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THE EUROPEAN MONETARY SYSTEM:
PROBLEMS AND PROSPECTS

A STUDY

PREPARED FOR THE USE OF THE
SUBCOMMITTEE ON INTERNATIONAL ECONOMICS

OF THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

AND THE

SUBCOMMITTEE ON INTERNATIONAL TRADE,
INVESTMENT AND MONETARY POLICY

OF THE

COMMITTEE ON BANKING,
FINANCE AND URBAN AFFAIRS
U.S. HOUSE OF REPRESENTATIVES



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October 31, 1979

The Honorable Lloyd Bentsen
Chairman
Joint Economic Committee
Washington, D.C. 20510

Dear Mr. Chairman:

Transmitted herewith is a staff study entitled The European Monetary System: Problems and Prospects. This study is designed to assist in understanding the most recent attempt at monetary integration within the European Economic Community. The objective of the European Monetary System is to create a "zone of monetary stability" within Europe.

The European Monetary System (EMS), launched on March 13, 1979, constitutes a major change in the International Monetary System. The new system is designed to rectify shortcomings in the earlier regional exchange rate system known as the "snake in the tunnel". Toward that end, the member states of the EMS have devised elaborate intervention rules aimed at the maintenance of intra-European exchange rate stability, and an early warning system (known as the "divergence indicator") designed to bring about appropriate adjustments on the part of any single member country--in surplus or in deficit--whose exchange rate gets too far out of line with the rest. They have also set in motion plans to establish a regional IMF known as the "European Monetary Fund", and they have created a European Currency Unit (ECU) which some people believe has the potential of becoming a common currency for Europe, one that could rival the dollar as a major reserve asset in the world monetary system.

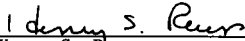
The evolution of the European Monetary System is of considerable interest to the United States. If it is successful, it will take us one step closer to the objective of European monetary integration, a goal long supported by the United States. If it fails, it could undermine the political and trading relationships of the European nations, both among themselves and with the United States. In short, the European Monetary System has important implications for U.S.-European monetary and trade relations, for the future evolution of the international monetary system and for the role of the dollar in world currency markets.

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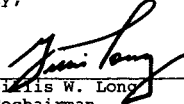
The Honorable Lloyd Bentsen
October 31, 1979
Page Two (2)

The European Monetary System: Problems and Prospects is a joint staff study written by Ben W. Crain, Staff Director of the Subcommittee on International Trade, Investment and Monetary Policy of the Committee on Banking, Finance and Urban Affairs, and by Lloyd C. Atkinson, Economist with the Joint Economic Committee. It does not necessarily represent the views or conclusions of the Subcommittee on International Trade, Investment and Monetary Policy, or of the International Economics Subcommittee of the Joint Economic Committee, or any of their individual members.

Sincerely,



Henry S. Reuss
Cochairman,
International Economics
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OF THE
COMMITTEE ON BANKING, FINANCE AND URBAN AFFAIRS
NINETY-SIXTH CONGRESS

Washington, D.C. 20515

The Honorable Henry S. Reuss
Chairman, Committee on Banking,
Finance and Urban Affairs
U.S. House of Representatives
Washington, D.C.

Dear Mr. Chairman:

Enclosed for your consideration is a staff report entitled
The European Monetary System: Problems and Prospects.

The European Monetary System (EMS) marks a major change in the international monetary system. The members of the European Economic Community have agreed on the establishment of a system of exchange rate intervention and mutual credit support for the purpose of creating a "zone of monetary stability" within Europe.

The EMS embodies several striking innovations. It creates a new type of composite monetary unit, the European Currency Unit, or ECU. The ECU could eventually develop into a common currency for Europe, and an alternative to the dollar and the SDR as reserve assets in the world monetary system. The EMS has set in motion plans to establish a "European Monetary Fund," which could play, within Europe, much the same role the IMF plays in the world economy. It could even have greater potential, as some see in it the embryo of a common European central bank. Finally, the EMS establishes, for the first time in international monetary relations, a so-called "divergence indicator" to measure the degree to which a currency diverges from a composite of all the currencies in the system. It is supposed to signal the need for the government of the diverging currency to modify its economic policies in order to stabilize its exchange rates. This kind of indicator is intended to help redress the asymmetry of the adjustment burden that has, in past fixed exchange rate systems, been borne primarily by the deficit countries. If the divergence indicator of the EMS proves successful, it could serve, some contend, as a useful model for a new approach to the stabilization of exchange rates among all the major currencies, not just within Europe.

The interests of the United States will be directly affected by the evolution of the European Monetary System. If it works well, it will

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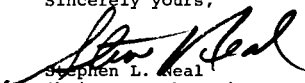
VIII

be a major step forward in the process of European integration -- a goal the United States has long supported. Its failure would be a serious setback to European political as well as economic cooperation. However it works, it will certainly affect the course of American-European monetary relations. It will have important implications for the trans-Atlantic management of exchange rates, for the future evolution of the international monetary system, and for the role of the dollar in the world economy.

The enclosed report describes the structure of the European Monetary System, and analyzes its approach to the creation of a "zone of monetary stability." While it is premature to reach firm conclusions, this study draws attention to the problems that must be resolved for the EMS to succeed.

The European Monetary System: Problems and Prospects is a joint staff study, written by Ben W. Crain, Staff Director of the Subcommittee on International Trade, Investment and Monetary Policy of the Committee on Banking, Finance and Urban Affairs, and by Lloyd Atkinson, Economist with the Joint Economic Committee. It does not necessarily represent the views or conclusions of the Subcommittee on International Trade, Investment and Monetary Policy, or of the Joint Economic Committee, or of any of their individual members. I transmit it to you for joint publication by the Committee on Banking, Finance and Urban Affairs, and by the Joint Economic Committee.

Sincerely yours,



Stephen L. Neal
Chairman, Subcommittee on International
Trade, Investment and Monetary Policy

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This report has not been officially adopted by the Subcommittee on International Trade, Investment and Monetary Policy, or by the International Economics Subcommittee, and does not necessarily represent the views of their members.

The authors are indebted to Richard Baldwin, Ellen Lessard, Helen Mohrmann and Jack Scheffel for their assistance in the preparation of this study. They are especially indebted to Linda Maisel who performed yeoman service in typing and then re-typing what must have seemed an endless number of drafts.

INTRODUCTION

On March 13, 1979, the world witnessed the launching of the much-publicized European Monetary System (EMS), the latest in a series of decade-long attempts at monetary integration within the European Economic Community (EEC). Originally targeted to start on January 2, 1979, its entry into force was delayed virtually at the last minute (on December 29, 1978) by French President Valery Giscard d'Estaing who insisted that a peripheral dispute between France and Germany over the EEC's tax and subsidy system for agricultural exports be settled first. The anxiously awaited settlement arrived on March 6, and one week later, the EMS came into being.

It is the purpose of this report to analyze the problems and examine the prospects of the EMS. The first chapter offers a brief history of the events leading up to the establishment of the EMS, including a discussion of the failure of previous attempts to achieve monetary integration. Chapter 2 analyzes the structure of the EMS. In Chapter 3 we examine the conditions that must be met in order for it to function successfully. Finally, Chapter 4 examines the relationship of the EMS to the dollar.

CHAPTER I

EUROPEAN MONETARY INTEGRATION: A BRIEF HISTORICAL REVIEW 1/

The general notion of a European monetary union is neither new nor novel. Formal arrangements bearing on the linkage of European currencies have existed, in one guise or another, for almost 30 years. This chapter describes the circumstances and events surrounding pre-EMS steps toward integration. Such an historical perspective is helpful in comprehending the rationale for the existing EMS structure, which is described in detail in the following chapter.

The Early History

The recognized need for some sort of union became apparent shortly after World War II. European currencies were not fully convertible, and there existed then a chronic shortage of other internationally acceptable "means of payment"--mainly gold and U.S. dollars. European currencies were not fully convertible in the sense that (a) domestic nationals could not freely sell domestic for foreign currencies and (b) nonresidents with balances in domestic currency could not freely sell them for desired foreign currencies. Under the circumstances, some novel method of financing intra-European payments imbalances had to be found in order to encourage a more liberal trading order among the nations of Europe. The common practice, up until 1947, of each country providing bilateral lines of credit to those other countries with whom it was in surplus

was deemed wholly inadequate. In an effort to economize on transfers of hard currency reserves--saving them for imports not otherwise obtainable--the European nations, with few exceptions, found it necessary to impose extensive controls on foreign exchange transactions, severely limiting, thereby, the volume of intra-European trade. The desire to avoid large bilateral imbalances created incentives for each country to discriminate in favor of imports from partners with whom it had bilateral trade surpluses even when goods might have been available at cheaper prices from other sources. At a minimum, there was a need for some sort of intra-European payments clearing system.

Between 1947 and 1950, the Europeans experimented with three different payments schemes--the Multilateral Monetary Compensation Agreement (signed in November 1947), and two successive Intra-European Payments and Compensations Agreements (signed in October 1948 and September 1949). Details aside, each of these agreements called for participating central banks to inform the Bank for International Settlements (BIS) each month of their bilateral debts to and credits on each other in order to facilitate the process of working out arrangements whereby debts and credits could be mutually cancelled or offset.

In general, these agreements did little to improve the payments problems of the European countries. The clearing process was not automatic; on the contrary, virtually all of the required intra-European official settlements necessitated the specific authorization of all concerned, a requirement that was seldom met in practice. Bilateralism virtually guaranteed that most countries were simultaneously in the position

of being creditors of some countries and debtors to others. The clearing process, in which debts and claims would be exchanged among countries, meant that a country's claims on net creditors would be replaced by claims on net debtors, and debts to net debtors would be replaced by debts to net creditors. Most countries would accept this outcome with reluctance, since it implied that some of its claims denominated in potentially strong currencies would be converted into claims denominated in potentially weaker currencies while some of its debts would be converted into currencies that were potentially somewhat stronger. This feature severely limited the clearing of positions. Indeed, it has been estimated that the compensations effected under these schemes actually cleared less than 4 percent of the positions that would have been cleared under a system that was full and automatic.

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The remaining imbalances (96 percent) were financed by the bilateral extension of credit and by American aid under the Marshall plan. Thus, the financing of European trade prior to 1950 was little affected by the multilateral agreements themselves.

The European Payments Union (EPU)

The real problem facing the European nations was the fact that their currencies were not fully convertible. By the turn of the decade, it was quite clear that the day of full convertibility was distant. Under the circumstances, a plan was needed that would permit the European nations to trade with one another as if their currencies were convertible. The early multilateral

agreements instituted between 1947 and 1950 proved to be inadequate because individual countries themselves had to assume all the currency risks. Some means had to be found to collectivize those risks. An ingenious solution was found in the form of the European Payments Union (EPU), which was put into operation on September 19, 1950.

The key features of the Union can be summarized as follows: Under the agreement, each country continued the practice of advancing credit on a bilateral basis. Each month, every participant would report all of its claims on and debts to other member countries to the BIS, the agent for the EPU. The BIS would consolidate all claims and debts, determining for each member its net position vis-a-vis the Union. The fact that member countries had to settle only their net positions with the Union itself economized on the use of reserves. In addition, the participants had no reason to reject the clearing arrangements that resulted in changes in the currencies in which debts and claims were denominated; under the agreement, the Union, and not any individual country or group of countries, became the creditor or debtor to each of the members, meaning that all members together jointly guaranteed the potential exchange risks involved.

Net positions with the Union were settled partly in gold and dollars, and partly in the grant or receipt of credit: countries in net surplus received partial payment in the form of gold and dollars, their remaining balance taking the form of a credit to the Union; countries in net deficit paid partly in gold and dollars, receiving a credit from the Union for the balance.

Although there was no explicit mechanism to ensure that countries would adopt policies aimed at rectifying balance-of-payments imbalances, it was hoped that the settlements provisions would elicit appropriate corrective action. That is, it was hoped that the requirement that net deficits be settled via the payment of gold and dollars--scarce monies that countries would part with only reluctantly--and via increased external indebtedness, would force deficit countries to pursue restrictive policy measures to slow their import growth; the requirement to grant credit to partially cover surpluses was considered incentive enough for net surplus countries not to permit their surpluses to grow. The credit lines would be used, it was hoped, only on a temporary basis to give countries "sufficient breathing space to take the steps required to restore their balance-of-payments without having to withdraw trade liberalization measures."3/

Despite these provisions and hopeful expectations, the EPU, throughout its seven year history, was plagued with the problem of persistent and abnormally large payments imbalances. It was necessary to devise a vast variety of ad hoc measures, from temporary suspension of import liberalization to complicated specially negotiated loan agreements, to deal with the imbalances.

The original EPU agreement set forth rather strict limits on the amount of credit that could be extended or borrowed by countries in net surplus and net deficit positions. However, almost from the moment of its inception, the EPU found it necessary to extend those limits--at first on an ad hoc basis, and in 1952, more formally--in order to accommodate members who were experiencing

either persistent intra-EPU payments imbalances or sharp reversals of their payments positions.

By 1954, it became apparent that the original EPU agreement was inadequate. As Leland Yeager put it:

"Credit granted by surplus countries through the intermediary of the EPU was no longer serving, as originally intended, to meet temporary balance-of-payments fluctuations only; some credit had remained outstanding for three or four years. Persistent creditors faced internal financial problems related to their loans to the Union, while debtors worried about their narrowed scope for meeting further deficits." 4/

The compromise fashioned by the EPU in 1954 constituted something of a step backwards. About three-quarters of the then existing debts to and claims on the Union were converted into bilateral debts to and claims on particular countries in an effort to partially rebuild previously exhausted EPU credit lines. Additionally, the EPU extended the borrowing and lending limits of the deficit and surplus countries, though with the proviso that a greater proportion (50 percent) of the imbalances be settled in gold and dollars.

In an effort to shift the settlement of imbalances in the direction of currencies that were fully convertible, the EPU in 1955 changed the agreement again to require that future imbalances be settled three-quarters in gold, dollars and other convertible currencies, and one-quarter in credit. At the same time, the EPU member countries added

a provision spelling out the procedures and circumstances for disbanding the EPU. Significant steps in the direction of currency convertibility had already been taken by a number of European countries, and once convertibility became a reality, there would be no further need for a Union to make European currencies transferable; the settlement of payments imbalances could be effected through ordinary foreign exchange market transactions. In the event the EPU was scuttled, it was to be replaced by the standby European Monetary Agreement (EMA), a centralized settlement system available for occasional use by member countries if desired.

During the last three years of its existence--1955-1958--the EPU continued to be plagued by the problem of growing intra-European payments imbalances, notably the surpluses of Belgium-Luxembourg and Germany, and the deficits of France and Britain. Recurrent payments crises resulted, as before, in the temporary suspension of trade liberalization and the negotiation of special loan agreements. Nonetheless, rapid progress continued to be made toward the goal of full convertibility. The stronger currency countries became less and less willing to finance the deficit countries through lines of credit to the EPU. Instead, they preferred to make their currencies more convertible--i.e., more saleable--and thereby by-pass EPU arrangements. Moreover, during 1958, the nations of Europe as a whole experienced a sharp increase in their dollar and gold reserves which made full convertibility possible. Finally, on December 27, 1958, currency convertibility became a reality for European currencies and the EPU was formally terminated.

The EPU was never regarded by its architects as a permanent feature of the European landscape. On the contrary, it was intended merely as a stop-gap arrangement designed to facilitate the shift from bilateralism to the ultimate achievement of currency convertibility. Once convertibility became a reality, the EPU served no useful function.

Although the Union was judged to be an overwhelming success, it was flawed by one major deficiency, a shortcoming that was increasingly recognized by the Union members themselves: the EPU lacked an effective mechanism for bringing about balance-of-payments adjustments. In response to persistent balance-of-payments disequilibria, the Union was called on repeatedly to provide a series of emergency credits and to approve borrowing and lending arrangements that exceeded by considerable margins previously agreed upon limits. In addition, the Union found itself in the uncomfortable position of frequently having to endorse the suspension of import liberalization. The requirement that payments imbalances be settled partly in gold and dollars and partly in credit was, by itself, not sufficient to bring about the changes in domestic economic policies required for overall balance-of-payments equilibrium. By the time the Union was suspended, European leaders were persuaded that, in the context of a system of fixed or near-fixed exchange rates, intra-European payments imbalances could be effectively eliminated only if member countries achieved a harmonization or coordination of their economic policies. And although official pronouncements on the subject of policy harmonization at that time were expressed in vague generalities, there was at least a very explicit recognition of the fact that as a

result of the freer flow of trade and capital between European countries, the economies of each had become increasingly vulnerable to the policy actions of the others.

Currency Convertibility and the European Monetary Agreement

When the EPU was terminated, the provisions of the European Monetary Agreement (EMA) of 1955 came into force. Under this agreement, the European Fund--fashioned after the International Monetary Fund (IMF)--was established. In place of the EPU's unconditional credits, the new Fund was empowered to extend conditional two-year loans to member countries experiencing balance-of-payments problems. But apart from a few loans to Greece, Iceland, Spain and Turkey (the heaviest borrower) little use was actually made of the loan facilities of the European Fund over its whole life. It served largely as a stand-by credit facility, and was finally liquidated in 1972.

The real story of the post-EPU era was currency convertibility. This step effectively put an end to the unscrutinized imposition or maintenance of exchange controls by the nations of Europe, so common in the ten year transition period after World War II; thereafter, the imposition or retention of exchange controls necessitated the specific authorization of the International Monetary Fund.

Currency convertibility did not, however, result in the immediate elimination of all exchange controls. Most European currencies became freely convertible for nonresidents only; most countries retained the right to control the foreign exchange transactions of

their own citizens. Neither did convertibility result in any new dramatic and immediate steps toward import liberalization; it was "more a symbol of liberalization already attained". ^{5/} Nevertheless, it did pave the way toward a more liberal trading order and the loosening of exchange restrictions.

The European Economic Community (EEC) and European Monetary Integration

The European Economic Community (EEC), which came into existence on January 1, 1958, established, as one of its ultimate goals, the attainment of a European monetary union. This objective was clearly set forth in the Treaty of Rome, but the language describing the nature of the proposed union was couched in general, cautious terms. Article 3 of the Treaty of Rome laid down as one of its principles "the application of procedures by which the economic policies of member states can be coordinated and disequilibria in their balance-of-payments remedied." The Treaty called for the coordination of the economic policies of the member states through cooperation between their appropriate administrative departments and between their central banks (Article 105); the liberalization of payments connected with the movement of goods, services or capital, as well as the transfer of capital and earnings (Article 106); policies with regard to rates of exchange were to be treated by each member state as a "matter of common concern" (Article 107); authorization for member states to take, for a strictly limited period of time, the measures deemed necessary to counter the consequences of exchange rate alterations which seriously distort conditions of competition (Article 107);

mutual assistance to members with serious balance-of-payments problems (Article 108); and, recognition of the possibility that a member state may need to adopt precautionary protective measures in the event of a sudden balance-of-payments crisis (Article 109). With respect to institutions, the Treaty of Rome provided only for the setting-up of a Monetary Committee with advisory status whose function it was to "keep under review" the monetary and financial conditions of member states and the Community, and to report regularly to the Council and the Commission.

The vague and cautious wording of these provisions is understandable. At stake here is the whole sensitive issue of national sovereignty in monetary affairs. 6/ Thus, the provisions in the Rome Treaty do not preclude the alteration of exchange rates by member countries; members are not obliged to adopt policies contrary to perceived national interests; and they are not required to coordinate their economic policies except to the extent necessary for the functioning of the Common Market, whatever that means. Nevertheless, the Treaty of Rome took the essential first step in the direction of a full monetary union,--namely, its designation as a goal toward which the Community was committed to move. Greater specificity could evolve only gradually.

The initiatives toward monetary integration pursued by the EEC in the years immediately following the ratification of the Rome Treaty were quite modest. During those early years, Europe was enjoying considerable prosperity, balance-of-payments problems were minimal, and the Bretton Woods system of fixed-but-adjustable exchange rates was functioning quite smoothly. In 1960 the EEC established a Committee on Short-Term

Economic Policy for the purpose of providing community-wide consultations on each member's business-cycle policies. This was followed in 1964 by the establishment of two additional committees--one designed to review the credit policies of each of the member countries, and the other to review each member's budget policy.

It was not until the monetary crises of 1968 and 1969, involving mainly France and Germany, that the Community was jolted out of its complacent attitude toward monetary integration. In 1968, in the wake of strikes of students and workers, a sharp loss of confidence caused a substantial flight of capital from France. The French government responded to the crisis by imposing exchange controls on resident capital outflows, by setting quotas on various commodity imports and by expanding the use of export subsidies. These measures, in combination with several domestic policy initiatives, failed to ease foreign exchange market pressures on the franc. Those pressures were compounded in the fall of 1968 by rumors of a possible revaluation of the German mark. The speculative attack on the franc, together with an unprecedented inflow of funds into Germany, caused the authorities to close the principal European foreign exchange markets. They remained closed while the finance ministers and central-bank governors met in emergency session in Bonn.

The widely-anticipated revaluation of the German mark and devaluation of the French franc did not, however, materialize. Indeed, French President Charles de Gaulle surprised everyone by announcing that the franc would not be devalued. Instead he opted in favor of a policy of monetary and fiscal restraint, tighter domestic price controls, more

extensive exchange controls and additional credit from France's partners. Germany likewise ruled out a revaluation of the mark, choosing instead to reduce its value-added tax on imports and its tax rebate on exports by 4 percentage points (a de facto kind of revaluation), and to impose a 100 percent reserve requirement on increases in foreign deposits in German banks (to discourage short-term speculative capital flows).

When the foreign exchange markets reopened, a period of relative calm set in, but did not last long. Speculative pressures against the franc and in favor of the mark continued to mount in the early months of 1969. They became very intense in the days following de Gaulle's resignation on April 28. Still the French refused to devalue, and Germany, on May 9, announced that the then existing parity of the mark would last "for eternity." Ultimately, however, on August 8, the franc was devalued by 11.1 percent against the dollar. And, in response to renewed speculative pressures in favor of the mark, the German mark's eternal parity was abandoned by a decision on September 29 to let the mark float. It jumped immediately, and four weeks later, a new revalued parity was established, up by 9.29 percent against the dollar.

France and Germany were not the only countries suffering foreign exchange market pressures in the middle and late sixties. The United Kingdom, Italy, Japan and the United States, among others, were all subjected to severe balance-of-payments difficulties as well, problems which intensified as the decade came to a close. From the point of view of European monetary integration, the balance-of-payments problems of Japan and Italy were less important than

those plaguing the U.K. and the U.S. The American and British balance-of-payments crises struck at the very foundations of the Bretton Woods system ultimately causing its collapse and paving the way for the era of generalized floating (albeit, increasingly "dirty"). Many European officials became convinced that some sort of union involving the coordination of European economic policies was required as a united defensive reaction to the tumult in world currency markets.

The growing deficit problems that plagued the U.K. ultimately resulted in a devaluation of the pound sterling in November 1967. Although the devaluation of the pound was widely anticipated, the event nevertheless sent tremors throughout the world's foreign exchanges: a devaluation of one of the world's key reserve currencies was, until 1967, all but unthinkable. Attention shifted toward the United States which was experiencing similar deficit problems.

In 1965, the U.S. current account commenced a deteriorating trend that persisted almost unbroken into the early seventies. This, in combination with continuing net capital outflows, put the dollar under increasing pressure, leading to the institution of voluntary controls over capital exports in 1965, and to the establishment of more stringent mandatory controls in 1968. Despite these efforts, foreign dollar holdings continued to accumulate. The ability of the United States to honor its commitment to convert officially-held dollars into gold on demand was thrown into question. Indeed, although the formal suspension of gold convertibility did not occur until August 1971, the actual conversion of foreign official dollar

holdings ceased, after 1968, to be routine. Large conversion demands, in particular, were strongly resisted.

The Barre Report

In the midst of these upheavals in world currency markets, the EEC began in earnest to ready plans for the establishment of a European monetary union. The Bretton Woods system--originally intended as a fixed-but-adjustable par value system, but which had evolved into a system of more rigidly fixed rates--was on the brink of collapse. Proposals to reform the international monetary system abounded, and, for the first time, the IMF was seriously entertaining the possibility of "replacing" the Bretton Woods system with one that would permit a greater degree of exchange rate flexibility. The EEC opposed the establishment of a more flexible rate system for its own members. The problems with the world's payments system lay not with the agreed upon set of par values, so it argued, but with the widely-divergent and uncoordinated policy initiatives of the world's individual economies. To many European leaders, the adoption of a more flexible exchange rate system would ultimately destroy the EEC itself. The solution--in their vision of Europe--involved, at a minimum, a recommitment to fixed rates of exchange and the coordination of economic policies.

The European monetary union debate was thus renewed in 1968 with the issuance of an EEC plan authored by M. Barre that called for: 1) a commitment on the part of member states not to alter their parity rates without prior mutual consent; 2) the elimination of margins of fluctuation of

exchange rates between EEC currencies; and 3) the establishment of machinery to facilitate the provision of mutual assistance between EEC countries.

The preoccupation of the Barre Plan with fixed rates of exchange was understandable since it was widely believed by the Europeans that the adoption of the Common Agricultural Policy in 1962--establishing an agricultural unit of account for intra-EEC transactions in farm products--ruled out changes in exchange rates among the European currencies. The threat posed by the pressures on the French franc and the German mark necessitated, in the view of the EEC Commission, a recommitment to fixed rates.

It was quickly recognized, however, that recommitment to fixed rates alone was not sufficient; the EEC member states had to commit themselves to the goal of policy harmonization as well. Thus, on February 12, 1969, the EEC Commission issued a report--known as the Barre Memorandum--that called for: 1) closer alignment of medium term economic policies through better synchronization of national programs; 2) closer coordination of short term policies through intensive inter-governmental consultations and introduction of a "warning indicator system"; and 3) the establishment of machinery to provide short term and medium term assistance to member states experiencing balance-of-payments problems.

The commitment to these principles, however, was not strong enough to prevent the realignments of the French franc and the German mark in August and September of 1969. Indeed, as the late Harry Johnson put it: "When the chips were down, it was the Common Agricultural Policy and not the members'

autonomy in domestic policy that had to give way." 7/ Despite this set back, the EEC Commission continued to press for agreement on the provisions of the 1968 Barre Plan and the 1969 Barre Memorandum.

How difficult it would be to reach consensus on the issue of exchange rate margins and policy coordination became apparent at the Council of Finance and Economic Ministers meeting in January 1970. At that meeting, agreement could be reached on only the noncontroversial short term credit issue, leading, in February 1970, to the establishment of a short term \$1 billion monetary support fund to provide renewable assistance for a period of three months. The more difficult policy matters--medium term aid and the coordination of economic goals and policies--were referred to a special EEC group, under the direction of Pierre Werner, for further study.

The First Werner Report

The First Report of the Werner group, issued in May 1970, was an amalgam of two distinct plans--the Schiller Plan for monetary, economic and financial cooperation, and the Second Barre Plan.

The principle objective of the Schiller Plan, strongly supported by the Germans and the Dutch, was the coordination of economic policies within the European Economic Community, to be phased in over a 10-year period in four stages. The first stage involved the establishment of medium term economic goals, the coordination of interest rate policies and the liberalization of policies governing intra-European capital

flows. The second stage foresaw tighter policy coordination, sufficient to eliminate most intra-EEC payments imbalances. The third stage called for (1) the creation of a supra-national monetary authority that would establish a community-wide monetary policy; (2) a reduction in the margins of exchange rate fluctuations between the national currencies of the member countries; (3) an increase in medium term aid to countries experiencing balance-of-payments difficulties; and (4) the establishment of a European Reserve Fund. In the fourth and final stage, national control over the conduct of monetary and fiscal policies would be transferred to the European Community proper; exchange rates between member states would be irrevocably set; and a single European currency unit would be introduced.

In a number of respects, the Second Barre Plan--reflecting the views mainly of France, Luxembourg, Belgium and the EEC Commission--was similar to the Schiller Plan. It asserted the need for a "unified personality" for the EEC in international monetary affairs. And, like the Schiller Plan, it emphasized the need for the harmonization of monetary and fiscal policies. However, proponents of the Second Barre Plan viewed the establishment of fixed exchange rates as the first order of business; once rates were fixed, member countries would be forced to take the ancillary steps required to coordinate their economic policies to ensure maintenance of those rates. Toward that end, the Barre Plan even called for the immediate reduction of margins of fluctuation around existing parity rates.

The Second Barre Plan was to be implemented in three stages. In the first stage the permissible margins of fluctuations

would be reduced; advisory committees would be established to assist member countries to coordinate their monetary and fiscal policies; and a European stabilization reserve fund would be created. The second stage sought to promote coordination through general economic policy directives, to be issued and reviewed by the Community every year. In the third stage, the EEC would be granted all the powers of a full economic and monetary union.

The Werner Report, which combined aspects of the Schiller Plan and the Second Barre Plan, was the main agenda item of the June, 1970 meeting of the Council of Ministers. It suggested a time table of 10 years for the attainment of the union, but only set forth detailed plans for an initial three-year stage.

The Werner Report was hotly debated. Proponents of the Second Barre Plan wanted an immediate reduction in the margins of fluctuation around existing parity rates. They stressed the importance of the creation of a community personality in the international monetary sphere, and toward that end, they proposed the immediate establishment of a European Stabilization Fund. Once the fund was in operation, the dollar would cease to be used as an intervention currency in the maintenance of intra-EEC parities; all intervention operations would be conducted in the currencies of the EEC member countries.

Supporters of the Schiller Plan opposed any reduction in the margins of fluctuation and felt that the creation of a reserve fund during the first stage was premature. In their view, all efforts in the first stage should be directed toward the harmonization

of economic policies. Once this goal was achieved, equilibrium parity rates of exchange would emerge naturally. It would be inappropriate to fix exchange rates at their current levels since there was no assurance whatever that such rates would ultimately emerge as the equilibrium rates of exchange. Thus, a reserve fund to support currencies should await the achievement of the goal of policy harmonization.

These differences between the Barre and Schiller forces could not be satisfactorily resolved. The Ministers were asked by M. Barre to vote on those aspects of the report for which there was agreement; the remaining issues would be referred back to the Werner Committee for further study. To the disappointment of many, immediate agreement could be reached on only three issues: the endorsement in principle of the concept of a full economic and monetary union by 1980 (involving the transfer of significant national powers to the Community proper and the creation of a single European currency) provided the member governments supported the union politically; the first stage of the integration process would start on January 1, 1971 and last for three years; and existing intra-European parity margins would not be widened even if wider bands were agreed to by the IMF. The Werner Committee had a lot of work to do.

The Second Werner Report

The Second Werner Report was issued on October 8, 1970. It was not substantially different from the first report, and it left several critical issues unresolved. It reemphasized the desirability of complete economic and monetary union by 1980. Once

again, only the first stage of the integration process was spelled out in detail. And, as before, agreement could not be reached on the permissible margins of fluctuation around parities. Although narrower bands for the EEC currencies were deemed highly desirable ultimately, it would probably not be appropriate to reduce the margins dramatically in the first stage. It was agreed that existing intra-EEC margins would not be widened, although enlarged margins with respect to the dollar would be permissible.

With respect to the issue of policy harmonization--and specifically, monetary policy harmonization--all the Committee could recommend was that it be studied further.

The Committee also recommended that, in the final stage, a supra-national monetary authority, modelled after the U.S. Federal Reserve System, be established. It would be managed by the EEC Central Bank governors.

On December 14, 1970, the Council of Ministers of the EEC agreed, in principle, to the implementation of the first phase. But the French blocked a decision on the issue of ultimate supra-national monetary control. In February 1971, the Council of Ministers agreed to the following actions: During the first stage of the integration process, intra-EEC exchange rate margins would be narrowed gradually from 0.75 to 0.60 percent on either side of parity; a \$2 billion reserve fund would be created to provide medium term assistance to members to supplement short term arrangements already in existence; a report would be readied by mid-1971 dealing with the question of the feasibility of establishing a European Fund for Monetary Cooperation; central banks would

be urged to increase their cooperation and to coordinate their policies. It was also agreed that the Council of Ministers would meet three times a year to establish guidelines with respect to the conduct of short term economic policies within the Community.

Although the Council of Ministers reaffirmed their determination to establish an economic and monetary union by 1980, they were only willing to commit themselves to the first stage of the integration process. They side-stepped the policy harmonization question by calling for a feasibility study, an action that apparently caused the Germans to bristle. Germany made it clear that its continued participation in the Union would be heavily dependent on how much progress was actually being made in the direction of the coordination of monetary and other economic policies. At Germany's insistence, a "precautionary clause" was introduced into the Council's resolution declaring that unless agreement was reached to move into the second stage by January 1, 1976, the monetary cooperation measures initiated during the first stage would be terminated.

It was the refusal of France to commit itself to anything beyond the first stage that caused the Council to hold back its vote on the second and third stages. The important issues had yet to be decided.

The upheavals in world currency markets in the weeks immediately following these meetings raised serious doubts about the feasibility of actually implementing even the first stage. The Commission and the Council, therefore, found it necessary to take more urgent steps on March 22, 1971. They decided: to intensify efforts aimed at the

coordination of member states' short term economic policies; to intensify efforts aimed at obtaining cooperation between member state central banks; and to begin, effective June 1, 1971 the process of narrowing exchange rate margins.

This "intensification" had not yet come into force when a renewed bout of speculative activity led to severe disruptions in European foreign exchange markets. Indeed, in May 1971, bearish speculation against the U.S. dollar became so severe that several foreign exchange markets in Europe were temporarily closed.

The EEC Commission immediately called a series of consultative meetings in an effort to devise an appropriate joint response. The outcome was not encouraging. The member countries could not reach agreement on the critical issue of monetary policy coordination, as a consequence of which the EEC was forced to postpone its scheduled narrowing of exchange rate margins. The member countries could not even agree on an appropriate response to the immediate crisis. The Commission, under pressure from the French, proposed that existing exchange parities be maintained and that joint action be taken to curb the inflows of dollars through regulation of the Eurodollar market. Germany, on the other hand, felt that this proposal was too interventionist and proposed instead that member currencies float jointly against the dollar, while remaining fixed against each other within narrow margins. No decision was made and the Germans and the Dutch allowed their currencies to appreciate somewhat against the dollar.

The failure of the EEC to agree on a common approach in the May crisis was

repeated later that summer when the United States suspended the convertibility of the dollar into gold. Again, Germany proposed a joint float of the member currencies against the dollar, but this was rejected by France. Italy, Germany, Belgium and Luxembourg temporarily allowed their currencies to float up further against the dollar. France introduced a two-tier system of exchange rates, imposed new controls on capital inflows and maintained its existing parity and intervention limits for current account transactions.

Foreign exchange markets remained in a chaotic state until the signing of the Smithsonian Agreement in December 1971. Under that agreement, the United States raised the official price of gold to \$38 an ounce even though it was neither buying nor selling gold at that price. The agreement also established a new set of parity rates that involved some realignment of intra-European parities. Finally, the band of permissible fluctuation of exchange rates was widened to 2-1/4 percent above and below the new parities with respect to the dollar.

The "Snake in the Tunnel"

The Smithsonian Agreement was, at best, a fragile compromise. Its exchange rate realignments were in the right direction and, given the growing volatility of international capital flows, wider permissible bands were badly needed. But whether the Agreement went far enough was very much an open question.

The EEC quickly took advantage of the more stable environment, deciding in March 1972 to reactivate the first stage of its plan for monetary union. However, in order to set the

wheels in motion yet another compromise to the original first-stage was required. In the view of the EEC Commission, the original goal of a 0.6 percent band on either side of intra-EEC parity rates was no longer realistic in view of the new wider band against the dollar. The fact that each European currency could deviate by as much as 2-1/4 percent on either side of the dollar central rate meant that any pair of EEC currencies could, under the new IMF rules, deviate by as much as 4-1/2 percent on either side of their bilateral parity rates. This range of fluctuation was deemed excessive. As a compromise the EEC governments decided to limit the range of fluctuation to half that magnitude--to 2-1/4 percent on either side of existing intra-EEC parity rates. The narrower EEC band within the wider dollar band caused the EEC system of exchange rates to be dubbed "the snake in the tunnel." (The even closer pegging of the Benelux currencies became "the worm in the snake".)

Central bank intervention would be used to keep the EEC currencies within the prescribed limits. When the limits of the Community band were reached, the central banks whose currencies were at the limit were to intervene using EEC currencies only. Dollar intervention by the central banks would commence only at the point where the limits of the dollar band were reached. This decision to intervene in dollars only at the dollar band limit appeared to solve a problem that concerned many EEC members. If no restrictions were placed on the use of the dollar as the intervention currency, problems could arise when the objectives of dollar intervention by some members conflicted with the objectives of other members. This problem arises once again in the EMS, which imposes no restrictions on the dollar

intervention policies of its members. It is a more serious problem for the EMS than it was for the "snake in the tunnel," because EMS members have no formal central rates for their currencies vis-a-vis the dollar, and thus no bands to define points for dollar intervention.

On April 24, 1972, the EEC currency snake was launched. In May, Britain, Ireland, Denmark and Norway joined the snake in anticipation of their membership in the European Economic Community. In June, the snake was subjected to its first test. The British pound, under heavy speculative pressure, had moved to the floor of the EEC band. Britain's required intervention led to reserve losses so extensive that she finally decided to drop out of the snake, only seven weeks after joining it, and to allow the pound to float; Ireland followed suit shortly thereafter. The reserve losses experienced by Denmark caused it to make its exit from the snake somewhat later in the summer. Italy also suffered reserve losses and wanted to leave the snake but was persuaded by the other EEC members to persevere longer. Thus, by September 19, 1972, three members had left the snake and the exit of yet another was a distinct possibility.

The sterling crisis in June 1972, that triggered the British withdrawal also provoked a heavy speculative attack on the dollar. As a result, the Community considered, but finally rejected, the possibility of a joint float against the dollar. Instead, direct controls over capital inflows (outflows in the case of Italy) were tightened throughout the Community.

Renewed pressure on exchange rates in the early months of 1973 caused the EEC countries in March to cease, at least temporarily, their intervention operations against the dollar; for a while, EEC currencies would float jointly against the dollar. With the "tunnel" abolished, the EEC exchange rate arrangement became known as "the snake in the lake."

The "joint float" meant that while exchange rates between the participating currencies would be held within narrow limits, no limits would apply between each of them and the dollar. But even this arrangement proved deficient. In the face of rising inflation differentials and the oil crisis, France abandoned the snake in the early part of 1974. She rejoined it in July 1975, and abandoned it again in March 1976. Sweden, which had become an associate member in 1973, left in 1977. The inability of the Europeans to maintain membership within the snake in the face of the 1973-74 oil crisis, and the widening of inflation and growth rate differentials left the snake in shambles.

The failure of the "snake" to function in the manner envisioned by its original proponents led to the development of a number of other proposals to supplant or to modify the "snake" arrangements. We note here two proposals which, although rejected by the EEC, left their mark on the EMS. 8/

The first plan--known as the Fourcade Plan--submitted by the French government in September 1974, called for the use of the European Unit of Account (EUA) in intra-European exchange rate relationships. In addition, it also emphasized the need for the establishment of a joint policy with respect

to the dollar. The movement toward an EUA was deemed essential in order that the burden of adjustment could be more fairly assigned. Thus, if one country's currency moved dramatically, up or down, relative to the average of all other European currencies, that country would assume the burden of undertaking measures to bring its currency back into line with the others.

The second initiative--the Duisenberg Plan--submitted by the Dutch government in July 1976, had as its objective the establishment of a mechanism that would trigger consultation among member states, the purpose being to better coordinate intra-European economic policies. The plan called for the establishment of a "target zone" for exchange rates. However, members had no intervention obligations to defend that zone; they had only the negative obligation not to undertake policies designed to push their rates out of the zone. It was hoped that some "objective" indicator could be found to automatically trigger discussions of policy coordination. In the Duisenberg Plan, the movement of any country's exchange rate out of the zone was deemed the appropriate indicator. Under the EMS, as we shall see, the indicator takes the form of the degree of divergence of a currency from the basket of ECU-currencies.

There was little enthusiasm for these more elaborate arrangements and the idea of a European monetary union lay dormant until revived by Roy Jenkins, Chairman of the EEC Commission, in a speech in Florence, Italy, on October 27, 1977. Many Europeans, who doubted that there existed sufficient political will to pursue the matter further, were surprised when West German Chancellor Helmut Schmidt in conjunction with French

President Giscard D'Estaing, turned the idea into concrete proposals, and worked vigorously to implement them.

The French-German proposal for the establishment of a European Monetary System (EMS) was presented in outline form at the summit meeting of European leaders in Bremen on July 6 and 7, 1978. The Finance Ministers of the nine EEC member countries met in Brussels on July 24 to discuss the Bremen communique; the technical details of the plan were presented to the EEC on October 31; and the plan was adopted at a December 4-5 meeting of the EEC Ministers. The European Monetary System (EMS) was set to take effect on January 1, 1979.

The launching of the EMS was delayed until March 13, 1979, however, because of a dispute between the French and the Germans over the EEC's tax and subsidy system for agricultural exports (the so-called Monetary Compensation Amounts (MCAs)). France argued that this tax and subsidy system, designed to neutralize the impact of currency fluctuations on the prices of agricultural products between EEC members, actually functioned in a manner that helped West German farmers at the expense of French farmers. The French argued that the system should be scuttled. Germany disagreed. France retaliated: until the dispute was properly resolved, the EMS would be held hostage. A compromise--granting France less than it had demanded--came on March 6 at a meeting of the EEC farm council in Brussels. The EMS was formally introduced one week later.

As far as the EMS is concerned, the details of the French-German dispute are less important than the fact that the resolution of a dispute involving narrow national

interests actually served to delay the implementation of a plan widely viewed by the vast majority of the EEC as essential to the attainment of goals they hold in common. This is highly significant, since the success or failure of the EMS will hinge on the extent to which individual countries are willing to subordinate some portion of their remaining autonomy in economic policy to the requirements for monetary integration among separate currencies. In this respect, there is ample reason to be skeptical. The design of a community-wide policy necessitates compromises, invariably involving conflicts of national interest. The fact that national policies would have to be fashioned to serve the average or majority interests of the member states means that it will not necessarily be beneficial to, and, indeed, may bring harm to the residents of some constituent states. This is the foundation on which the EMS rests. Can the EMS survive in the face of these conflicts? Of course it can, but the requirements for success are stringent.

CHAPTER I FOOTNOTES

1/ The material in this Chapter was drawn from several sources, including the following: Leland B. Yeager, International Monetary Relations: Theory, History and Policy (2nd ed.), (N.Y.: Harper & Row, 1976); P.T. Ellsworth, The International Economy, (N.Y.: Macmillan, 1950); Economic and Social Committee of the European Communities, Monetary Disorder, (Brussels, 1978).

2/ Robert Triffin, Europe and the Money Muddle, Yale University Press: New Haven Connecticut, 1957, p. 149.

3/ Managing Board of the European Payments Union, Fifth Annual Report, p. 63.

4/ Leland B. Yeager, International Monetary Relations: Theory, History, and Policy (2nd edition), Harper and Row: New York, 1976, p. 416.

5/ Leland Yeager, op.cit., p. 423.

6/ One might wonder why the EEC members were so cautious on the issue of monetary integration when so many other bold actions were taken. There are perhaps two explanations. At the time of the signing of the Treaty of Rome, currency convertibility was not a reality, so it would have been premature to spell out the details of monetary integration. The second, and more important reason, is that, as long as the Bretton Woods system functioned smoothly, there would be no need for regional monetary

integration since that would be successfully accomplished at the global level.

7/ Harry G. Johnson, "Problems of European Monetary Union," Euromoney, April 1979, p. 39.

8/ The discussion here draws heavily on the paper by Niels Thygesen, "The Emerging European Monetary System: Precursors, First Steps and Policy Options," in Robert Triffin, ed., EMS: The Emerging European Monetary System, (Belgium: The National Bank of Belgium, 1979), pp. 103-105.

CHAPTER II

STRUCTURE OF THE EMS

In this chapter we undertake a detailed examination of the existing structure of the EMS. We take account of the fact that there exists not one exchange rate system, but two--one based on the "parity grid" and the other on the "divergence indicator." We analyze each system separately and the relationship between them. In addition, we survey the credit mechanisms that have been set up under the EMS.

The Parity Grid

The management of exchange rates within the EMS is complicated by the juxtaposition of two distinct and separate systems: the "parity grid," based on bilateral exchange rates, and the "divergence indicator," based on the European Currency Unit (ECU). The "parity grid," the simpler of the two, embodies the binding commitments undertaken by the central banks. It defines a precise and coherent exchange rate system, quite independent of the ECU and the "divergence indicator." The "parity grid" should first be grasped, by itself, before the complexities of the ECU and the divergence indicator are introduced.

At present, there are nine members of the EMS: Germany, France, Britain, The Netherlands, Belgium, Luxembourg, Italy, Denmark and Ireland. All nine currencies are represented in the European Currency Unit (ECU). The British government initially declined to join the parity grid, though it retained the right to participate at some

later date. Thus, until the U.K. decides to participate, the pound sterling will not appear in the parity grid. Neither does the Luxembourg franc, since it is equivalent to the Belgian franc, by virtue of the Belgian-Luxembourg monetary union. Thus, seven currencies comprise the parity grid at present.

The key relationships between these seven currencies are the "bilateral central rates" and the permitted margins of fluctuation on either side of those central rates. Each currency has a "bilateral central rate" with each other currency. In Table I, these bilateral central rates are the middle numbers in each cell. The numbers above and below the central rates in each cell are the upper and lower limits within which the currency is free to fluctuate. For example, the DM-FF central rate is 1 DM = 2.35568 FF. The upper limit for DM appreciation is 1 DM = 2.4093 FF, the lower limit for DM depreciation is 1 DM = 2.3033 FF.

The rates recorded in Table I are those in effect after the realignment of rates announced on September 24, 1979. The EMS was launched in March 1979, with a different set of rates for the parity grid. The realignment of September 24 resulted in a revaluation of the DM against the FF, BF, Fl, L, and IP of about 2 percent, and a devaluation of the DK against those currencies of about 3 percent, in comparison with the initial rates in effect when the EMS was launched. The original parity grid is shown in Table II; the pattern of intra-EMS exchange rate movements from the inception of the EMS to the point just prior to the realignment is illustrated in Chart I.

September 24, 1979

THE REALIGNED PARITY GRID

TABLE I

	DM	FF	BF	L	DK	F1	IP
DM	 	2.4093 2.35568 2.3033	16.3955 16.0307 15.6740	495.287 466.46 439.312	3.0309 2.96348 2.8976	1.1305 1.10537 1.080775	.27553 .26921 .26323
FF	.43415 .4245 .41505	 	6.96 6.80512 6.65375	210.252 198.015 186.49	1.28667 1.25801 1.230012	.4799 .469235 .4588	.116881 .114281 .111739
BF	.0638 .06238 .06099	.15029 .146948 .14368	 	30.8961 29.0979 27.4044	.189072 .18486 .18075	.07052 .0689531 .06742	.0171755 .0167934 .0164198
L	.002276 .002144 .002019	.005362 .00505013 .004756	.03649 .0343668 .032365	 	.0067457 .0063531 .0059834	.002516 .0023697 .00223175	.000612801 .000577135 .000543545
DK	.3451 .337441 .32995	.813 .794906 .7772	5.5325 5.40942 5.289	167.13 157.403 148.242	 	.381475 .372998 .3647	.092909 .0908426 .088822
F1	.92525 .90467 .88455	2.1796 2.13113 2.0838	14.8325 14.5026 14.18	448.074 421.995 397.434	2.74198 2.68098 2.6214	 	.249089 .243548 .23813
IP	3.799 3.7146 3.632	8.9495 8.75034 8.5555	60.9020 59.5471 58.2225	1839.78 1732.7 1631.85	11.2585 11.00805 10.76322	4.1995 4.10597 4.0145	

DM = Deutsche Mark; FF = French Franc; BF = Belgian Franc; L = Italian Lira; DK = Danish Krone;
F1 = Dutch Guilder; IP = Irish Pound.

March 13, 1979

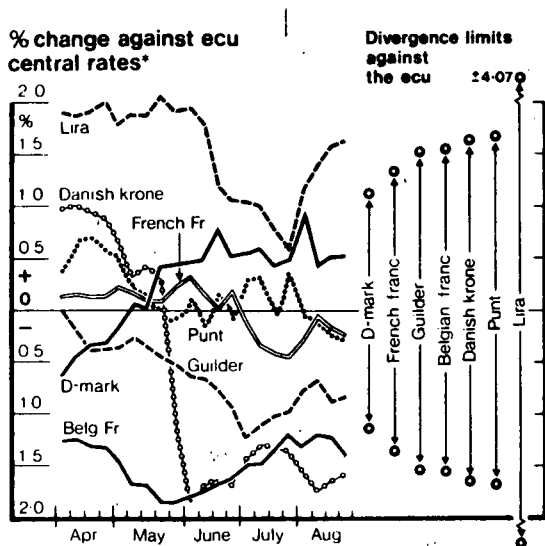
THE ORIGINAL PARITY GRID

TABLE II

	DM	FF	BF	L	DK	F1	IP
DM	 	2.3621 2.3095 2.2581	16.074 15.7164 15.3665	485.576 457.314 430.698	2.8866 2.82237 2.7596	1.10835 1.0837 1.0596	.269937 .263932 .25806
FF	.44285 .432995 .42335	 	6.96 6.80512 6.65375	210.252 198.015 186.49	1.24985 1.22207 1.1949	.4799 .469235 .4588	.116881 .114281 .111739
BF	.06508 .0636277 .06221	.15029 .146948 .14368	 	30.8961 29.0979 27.4044	.183665 .179581 .175585	.07052 .0689531 .06742	.0171755 .0167934 .0164198
L	.002322 .00218668 .002059	.005362 .00505013 .004756	.03649 .0343668 .032365	 	.006553 .0061716 .005813	.002516 .0023697 .00223175	.000612801 .000577135 .000543545
DK	.36235 .354313 .34645	.8369 .818286 .8001	5.695 5.56852 5.4445	172.045 162.033 152.605	 	.3927 .383967 .375425	.0956424 .0935147 .0914343
F1	.94375 .922767 .90225	2.1796 2.13113 2.0838	14.8325 14.5026 14.18	448.074 421.995 397.434	2.66365 2.60439 2.54645	 	.249089 .243548 .23813
IP	3.875 3.78886 3.705	8.9495 8.75034 8.5555	60.9020 59.5471 58.2225	1839.78 1732.7 1631.85	10.9365 10.6935 10.4555	4.1995 4.10597 4.0145	

DM = Deutsche Mark; FF = French Franc; BF = Belgian Franc; L = Italian Lira; DK = Danish Krone;
F1 = Dutch Guilder; IP = Irish Pound.

Chart I



* daily ecu rates calculated to exclude rises in sterling and lira in excess of 2¼% above their central rates

Source: The Economist, September 15, 1979.

The central rate between any two currencies is not the "market" exchange rate (except by coincidence). Central rates are defined by governments. Market exchange rates are those at which currencies are actually traded against one another by banks, corporations or individuals, in each "foreign exchange market." The organization, supervision and regulation of the foreign exchange markets can differ from country to country, but, for most major currencies, these differences do not prevent geographically separate markets from being integrated in an economic sense. Arbitrage between geographically separate markets establishes, with only minor and transient differences, virtually the same exchange rate between any two currencies, wherever they are traded. 1/

Like any uncontrolled price, exchange rates are determined, in the worldwide foreign exchange market, by supply and demand. The supply of and the demand for one currency against another result from the whole range of international transactions--trade and capital movements--between national economies. (They also arise from changes in the preferences of investors for holding assets denominated in different currencies.) To keep exchange rates where they want them, governments must influence that supply of and demand for their currencies. To hold actual market rates close to officially defined central rates, governments (generally through their central banks) must intervene directly in the foreign exchange markets, buying or selling foreign currencies, whenever private supply and demand move market rates too far away from official central rates. In practice, the central banks need only announce the rates at which they will buy and sell their own currency, and then respond to

requests from commercial banks to deal at those rates. Market rates will then stay within those limits, since no one would trade currencies at rates outside those limits when they could trade at those rates with the central banks.

The EMS specifies a band, or margin, around the central rates, within which market rates are free to move. The band is 2.25 percent above and below the central rates for all EMS currencies except the Italian lira, which enjoys a 6 percent margin on either side of its central rates. ²The parity grid table shows the upper and lower intervention points for each pair of currencies. When the market rate for any currency pair reaches its limit, both central banks are obliged to intervene to keep it within the band. As long as the rate is within the band, no intervention is required--though it is permitted.

For example, assume the French franc has a tendency to fall below the bottom of its band vis-a-vis the German mark, i.e., below 1 FF=.41505 DM. That means the German mark has a tendency to rise above the top of its band vis-a-vis the franc, i.e., to rise above 1 DM=2.4093 FF. To keep the market rate within the band, both the German and the French central bank accept the obligation to intervene, by selling DM for FF, when the rate reaches its limit. Both are free to intervene, as the rate approaches the limit, in order to pull it back.

In principle, it is not necessary for both central banks to intervene. Since both do the same thing, either central bank, acting alone, can achieve the same effect. Arbitrage will quickly spread the effects of intervention throughout the worldwide market,

regardless of where it is undertaken, or by whom. Of consequence is only the magnitude of the intervention. Nonetheless, it was no doubt easier, politically, to negotiate a system which imposes the same formal intervention obligations on all, even though the impact on exchange rates is the same, no matter who actually intervenes.^{3/} Thus, the EMS requires each central bank to intervene by responding to requests from its commercial banks to buy or sell any EMS currency at the stated intervention rates.

Although each currency is free to move to the limit of its band against each other currency, in practice it will seldom enjoy that complete range of potential movement. If the DM and FF are at their bilateral central rate, one currency could appreciate 2.25 percent against the other before either central bank would be obliged to intervene in DM or FF. But before that full range is traversed, it is likely that one or both of the currencies would hit its respective limit against a third currency. Assume the DM and FF are at their bilateral central rate, but somewhat below their central rates against the BF. Now let the DM appreciate against the FF. Since arbitrage will maintain consistent cross-rates,^{4/} an appreciation of the DM against the FF will necessarily entail a change in either the DM/BF or the FF/BF market rates, or both. Thus, a FF depreciation against the DM might well touch off a FF depreciation against the BF. But since it began at a discount from its bilateral central rate vis-a-vis the BF, it cannot fall a full 2.25 percent against the BF before hitting its bilateral limit against the BF. Thus, even though the French might deem a 2.25 depreciation of the FF relative to the DM as appropriate, its actual depreciation could be arrested before it

falls the full amount. As soon as the FF hits its lower limit against the BF, the French and Belgians will have to intervene to keep it from falling further against the BF. From that point on, the FF can depreciate against the DM only if the BF also depreciates against the DM. In practice, therefore, the managers of the currencies are likely to feel much more hemmed in than the 2.25 percent band might suggest. 5/

The "parity grid" laid out above is simple and unambiguous. Each central bank must only stand ready to buy or sell its currency at the stated bilateral limits. The central bank whose currency is at the top of its band against some other currency sells its own currency and purchases the other currency. In principle there is no limit to the amount of its own currency it can sell since, being the central bank, it can produce any amount of its own currency.

On the other hand, the central bank whose currency is at the bottom of its band against some currency must purchase its own currency by drawing down its holdings of the other currency or by borrowing what it requires. This effectively limits the magnitude of its intervention operations, since, at some point, these sources of foreign currency will be exhausted. Thus, sooner or later, countries with weak currencies encounter a constraint not felt by countries with strong currencies.

Generally speaking, European central banks do not own large stocks of other European currencies. Their foreign exchange reserves are held mostly in dollars and gold. Nonetheless, intervention within the EMS should, in principle, be conducted in EMS currencies. According to the Resolution on

the establishment of the EMS, "In principle, interventions will be made in participating currencies. Intervention in participating currencies is compulsory when the intervention points defined by the fluctuation margins are reached." 6/

That seems to rule out intervention in dollars, the traditional modus operandi of central banks. It does not, however, rule out the sale of dollars (and gold) to other European central banks for the purpose of obtaining the European currencies required for intervention within the EMS. And it does not strictly rule out "intramarginal" intervention in dollars, i.e., intervention in dollars while a currency is still within its band vis-a-vis other European currencies. In fact, it masks a major ambiguity. EMS members are free to intervene in dollars to influence their dollar exchange rates, subject only to a loose requirement that such intervention be coordinated with that of other members. Such dollar intervention should, in principle, be part of a common EMS policy toward the dollar. (This point is discussed below, in the chapter on the EMS and the dollar.) Dollar intervention could be used in lieu of intervention in EMS currencies in order to influence intra-EMS rates. Unless coordination among central banks on dollar intervention is extraordinarily close, it is not obvious that dollar intervention in the service of a common EMS dollar policy could be disentangled from dollar intervention as a tool for managing intra-EMS rates.

Technically, intervention in dollars could achieve any desired relationship between two nondollar currencies. Arbitrage will operate to keep "cross-rates" consistent. That is, if the FF/\$ rate were to move to 4 FF=\$1, and

the DM/\$ rate were to move to 2 DM=\$1, arbitrage would ensure that the FF/DM "cross-rate" quickly moved to 4 FF=\$1=2 DM, or 2 FF=1 DM. Thus, France and Germany could effectively determine the FF/DM rate solely by each fixing, through dollar intervention, its own respective dollar exchange rate. If the French franc is at the bottom of its band against the German mark, the French central bank could sell dollars, buying francs, while the German central bank could buy dollars, selling marks. The franc would then appreciate, and the mark would depreciate, both against the dollar, implying, in turn, an appreciation of the franc against the mark.

Thus, intervention via a common third currency could technically suffice to maintain desired exchange rates. But that form of intervention is a bit clumsy. It requires coordination among central banks so they do not work at cross purposes. Moreover, it would tend to emphasize the dollar's role in the international monetary system as a reserve and intervention currency. One of the implicit purposes of the EMS--it is widely alleged--is to move away from continued use of the dollar. The stipulation that intervention should be in EMS member currencies might be seen as a step in that direction. But it is a very minor step. Even for intra-EMS intervention, European central banks will probably make heavy, though indirect, use of the dollar. Some intra-EMS intervention will be financed by selling dollars directly to the central bank whose currency is needed, or by using dollars to repay credit extended by that central bank. While that would avoid routing dollars through the foreign exchange market, it is essentially no different from one central bank selling dollars into the market

(for a European currency) while the other central bank purchases dollars from the market.

The problem posed by intervention in dollars is not a question of the relative efficiency of dollar intervention for maintaining desired intra-EMS exchange rates. It would matter little whether EMS members intervened in their own currencies or in dollars, with one central bank buying, the other simultaneously selling dollars, as long as such dollar intervention were closely coordinated and used solely as a tool for stabilizing intra-EMS rates. But dollar intervention is not restricted to that objective. It is also used to influence dollar exchange rates directly. The Bundesbank intervenes in dollars because it is directly concerned about the \$/DM rate, not because it seeks, indirectly, to influence intra-EMS rates. The issue raised by dollar intervention is the problem of the joint management of exchange rates between the dollar and the EMS currencies. As argued below, that is one of the major tasks facing the EMS.

When central banks cannot finance intervention out of their own reserves, they can borrow foreign currency from private capital markets or from foreign central banks. The EMS rests on an extensive system of central bank credit. Each government has privileged access to the currency of each other country. ⁷Before this credit mechanism is described, it is necessary to introduce the European Currency Unit, the unit of value in terms of which inter-governmental credit is denominated.

The ECU

The European Currency Unit (ECU) is not a currency. It is not traded or held by private parties (though private debt could be denominated in ECUs, subject only to whatever national legal restrictions may govern the terms of private contracts.) Like the Special Drawing Right (SDR) of the International Monetary Fund, the ECU is a "basket" of currencies, containing specific amounts of the nine European community currencies. The amounts of each currency poured into the original ECU basket are:

Amounts of Each Currency in the ECU

Deutsche Mark - 0.828
 French Franc - 1.15
 Belgian Franc - 3.66
 Luxembourg Franc - 0.14
 Lire - 109
 Danish Krone - 0.217
 Dutch Guilder - 0.286
 Irish Pound - 0.00759
 Pound Sterling - 0.0885

(These amounts are subject to change by unanimous agreement of the member governments. They are chosen according to criteria that supposedly reflect the relative size of the economies, and of their intra-European trade.)

The value of an ECU is the value of that basket of currencies. If you owe one ECU, you would have to pay .828 DM plus 1.15 FF plus 3.66 BF, and so on. Or you would have to pay, in any single currency, the value of the ECU expressed solely in that currency. To calculate the value of the ECU solely in terms of a single currency, convert the specific amounts of all the currencies in the ECU into that one currency. The DM value of the ECU would be, for example, .828 DM plus the DM value of 1.15 FF plus the DM value of 3.66 BF, and so on. The value of the ECU in terms of dollars is found by converting the specific amounts of each currency in the ECU into dollars, then adding. Representative market exchange rates are used for the conversions necessary to establish a daily value of the ECU in terms of each of its constituent currencies, or in terms of the dollar.

The central feature to grasp about the ECU (or any other "basket" of currencies, such as the SDR) is that it has a value, in terms of any single currency 8/ that fluctuates as the currencies that comprise it fluctuate.

To illustrate, assume the DM appreciates against all other currencies in the ECU. The specific amount of each non-DM currency in the ECU would then convert into fewer DM. Adding those fewer DM to the constant .828 DM yields a smaller number of DM per ECU (or, conversely, a larger number of ECU per DM) than prior to the DM appreciation. In other words, DM appreciation against all other ECU currencies is unambiguously a DM appreciation against the ECU itself (or conversely, a depreciation of the ECU against the DM.)

What then happens to the value of the ECU in terms of other currencies (e.g., the

French franc) when the DM appreciates against all currencies? That cannot be answered so easily. Two cases can be distinguished. Assume, first, that the DM appreciates uniformly against all other ECU currencies, leaving the exchange rates among those other currencies unaltered. Converting the .828 DM in the ECU into FF yields more FF than prior to the DM appreciation, while all other currencies convert into the same amount of FF as before. Thus, the ECU is worth more FF than prior to the DM appreciation. The ECU has appreciated against the FF (or the FF has depreciated against the ECU.)

But the FF will not necessarily depreciate against the ECU when the DM appreciates against all other currencies in the ECU by different degrees. Then exchange rates among those other currencies would not remain constant: the FF would depreciate against the DM, but could appreciate against some or all of the other currencies. In that case, the DM unambiguously appreciates against the ECU, but the FF could either appreciate or depreciate against the ECU, depending on the degree and direction of its movement against all the currencies comprising the ECU.

The character of ECU behavior may be summarized in the following terms:

(1) If a currency in the ECU appreciates (depreciates) against all other currencies in the ECU, then it unambiguously appreciates (depreciates) against the ECU itself, i.e., the ECU depreciates (appreciates) against that currency.

(2) If a currency in the ECU appreciates (depreciates) uniformly against other currencies, those other

currencies depreciate (appreciate)
against the ECU.

(3) In a general movement of exchange rates, where one currency does not move uniformly against all the others, the movement of the ECU in terms of any single currency cannot be stated a priori, but will depend on the direction and degree of movement of each currency against each other.

(4) In general, a change in any exchange rate among any of the ECU currencies entails a change in the value of the ECU in terms of each currency. For example, a change in the DM/FF exchange rate would, in general, change the value of the ECU in terms of the Italian lira. To see this, recall how the lira value of the ECU is calculated. The specific amounts of all other currencies in the ECU are converted into lire at market exchange rates and added to the constant lira component. Thus, .828 DM are converted to lira at the DM/lira rate, and 1.15 FF at the FF/lira rate. With arbitrage maintaining consistent "cross-rates" in the foreign exchange markets, a change in the DM/FF rate necessarily entails a change in either the DM/lira or the FF/lira rate, or a change in both. If a change in only the DM/lira, or only the FF/lira rate occurs, the value of the ECU in terms of lire changes, because either the DM or the FF component of the ECU is now converted to lira at a new rate. If both the DM/lira and the FF/lira rates change, both the DM and the FF components of the ECU would then be converted into lira at new rates, producing, in general, a new lira/ECU

rate. Given the amounts of DM and FF in the ECU, there is a certain combination of DM appreciation against the lira and FF depreciation against the lira which would have precisely offsetting effects, leaving the lira value of the ECU unchanged. But that would be the unlikely exception to the general rule that a change in any exchange rate within the EMS entails a movement of the ECU against all its constituent currencies. One consequence of this arithmetic is the politically important fact that no member can devalue (or revalue) its currency against any other EMS currency without entailing a general realignment of all member currencies against the ECU. Thus, changes in bilateral central rates and ECU central rates require a unanimous decision by all member governments.

(5) There is a sense in which the ECU moves more sluggishly than its constituent currencies. An average movement of any one currency against all the others could be calculated by dropping the currency in question out of the ECU basket and calculating the percentage appreciation or depreciation of that currency against the remaining "mini-basket." The percentage change against the "mini-basket" (unless it should turn out to be zero) will necessarily be greater than the percentage change of that currency against the full ECU, since the full ECU contains the currency in question as one of its components. Because a currency doesn't move against itself, it moves less against the full ECU, of which it comprises a part, than against the composite of all the other currencies.

Stated the other way around, the ECU is more sluggish in its movements against its constituent currencies than any of them would be against the composite of the others.

This last feature of ECU behavior has led some to characterize the ECU as being, in a sense, more "stable" than any of its constituent currencies. But that "stability" is rather contrived. It is a consequence of comparing the movement of the ECU against a member currency with the movement of the "mini-basket" of other currencies in the ECU against that currency.

The economic significance of this relative stability of the ECU is not obvious. As a unit of account the ECU suffers several deficiencies. Economic agents would not necessarily reduce their risks, in terms of their own national currencies, by denominating their transactions in ECU's. French agents doing business with German agents would normally be exposed to the risk of fluctuation in the FF/DM rate. Denominating the transaction in ECU's is not a priori preferable, since the FF/ECU rate could be more volatile than the FF/DM rate, though it will be less volatile than the FF rate against the composite of all other ECU currencies. Indeed, one could imagine a fixed FF/DM rate of exchange, but a volatile FF/ECU rate, the result of fluctuations between the FF and other non-DM EMS currencies. The FF/ECU rate is a function of FF exchange rates with all ECU currencies, not just the DM. Hedging against changes in all those rates is not obviously easier or cheaper than hedging just against FF/DM fluctuations.

Credit Mechanisms

Credit to support the EMS is dispersed through three mechanisms: (1) short term monetary support (STMS), (2) medium term financial assistance (MTFA), and (3) "very" short term credit. The first two are expanded versions of previously existing credit facilities. The last is a revised version of the central bank credit lines that financed intervention among the members of the old "snake."

The detailed operations of the STMS and MTFA facilities are rather complex but, in essence, they represent normal intergovernmental credit, denominated now in ECU's. Under the STMS the available credit effectively amounts to about 14 billion ECU. STMS credits are extended, in principle, for three months, twice renewable. They are granted without conditions, but subject to the unanimous approval of the Committee of European Community Central Bank Governors. The amount of credit effectively available under the MTFA facility amounts to about 11 billion ECU. It is intended for countries in "difficulties or seriously threatened with difficulties as regards (their) balance-of-payments." MTFA credits run from two to five years, and are granted subject to economic policy conditions laid down by the Council of Ministers of the European Communities.

The economic arguments for the extension of credit for balance-of-payments support are quite familiar. If balance-of-payments adjustment is to proceed without major reliance on exchange rate changes, it may be desirable to have some official credit mechanisms available for the temporary financing of deficits while other policies implemented by the deficit country work to

restore balance. (An alternative view is that, even under a system of fixed exchange rates, a deficit country should have to finance its deficit solely in private capital markets.) Opinions differ widely over how liberal such official credit should be. The STMS and MTFAs facilities are simply two more sources of such credit, in addition to IMF credit, and ad hoc bilateral official credit. Plans for the future development of the EMS call for fusing the STMS and MTFAs, along with the "very" short term central bank credit lines, into a unified credit mechanism administered by a "European Monetary Fund."

"Very" short term financing is available to EMS members accepting the intervention obligations of the parity grid. (At present, the U.K. is a member of the EMS, and sterling is a component of the ECU, but Britain does not accept the intervention obligations of the parity grid.) Their central banks agree to extend unlimited credit to each other, on a "very" short term basis. The European countries do not normally maintain stocks of each other's currencies beyond small amounts of working balances. Thus, a country intervening to support its own currency--i.e., to buy its currency from the market by selling foreign currencies--will normally have to obtain the requisite amount of those foreign currencies by activating these very short term credit lines. (In the first six months of the EMS, some intervention was also financed by governments borrowing foreign currencies from private credit markets, not just from other central banks.)

Through intervention financed by drawing on official credit lines, the central banks become net creditors or debtors vis-a-vis each other. They become creditors by purchasing foreign currencies through

intervention (the foreign currency they buy is ultimately a claim on the foreign central bank) or by extending credit to finance the intervention of other central banks. They become debtors by borrowing to finance intervention, or by having other central banks purchase their currencies. (Financing intervention by borrowing on private credit markets does not give rise to creditor-debtor positions among central banks.)

The terms of settlement of these debtor-creditor positions are an important facet of any intervention system. It is easy to define a system of intervention which guarantees perfect maintenance of any arbitrarily chosen set of exchange rates. It would only be necessary for any two central banks to agree to purchase the other's currency, in unlimited amounts, from anyone who offers to sell at the stipulated exchange rate. As long as that agreement is honored, any exchange rate can be maintained indefinitely. But no government would agree to intervene, indefinitely and without limit, without a commitment by the debtor government to settle the resulting debts.

Settlement is made with "international reserves." That term denotes those kinds of assets which can be used directly for intervention to support exchange rates, or which can be transformed into the means of intervention easily, quickly, and with little capital loss. No hard and fast rule defines what can constitute an international reserve. In practice, international reserves are conventionally defined as (1) convertible foreign currencies, most notably the dollar; (2) any officially held liquid assets denominated in convertible currencies; (3) Special Drawing Rights from the International Monetary Fund; and (4) gold. But this

accounting is rather arbitrary, since any asset that can readily be sold for convertible foreign currency is, potentially, an international reserve asset.

Under the EMS, "very" short term debts normally fall due forty-five days after the end of the month in which the credit was granted (though extensions are possible). Regulations lay out the form of settlement. These will not be reviewed in detail here. The novel feature is the role the ECU plays in the mechanism.

The ECU enters the settlement process as a numeraire, a reserve asset, and a means of settlement itself. It serves as the unit of account in which all the debits and credits arising from the (unlimited) very short term credit lines among central banks are denominated. Thus, if the Belgian central bank borrows DM from the German central bank for intervention purposes, its debt is denominated in ECU's at the prevailing DM-ECU rate. If the German central bank purchases Belgian francs in the market, its resulting claim is denominated in ECU's at the prevailing BF-ECU exchange rate. The BF purchased by the Bundesbank would simply "vanish." In the place of those BF, the Bundesbank balance sheet would show, as an asset, ECU's owed to it by the Belgian central bank, while the Belgian central bank balance sheet would show, as a liability, ECU's owed by it to the Bundesbank. Settlement between Belgium and Germany would follow by Belgium transferring to Germany either DM or some acceptable reserve asset, such as dollars. The number of dollars required for settlement would depend on the dollar-ECU rate, which would likely vary over the life of the credit. If, before settlement is due, the BF begins to reverse

itself and strengthen against the DM, the Belgian central bank would then enjoy the option of purchasing DM from the market and using them to settle its debt with the Bundesbank, at the prevailing DM-ECU rate.

In addition to being the numeraire for denominating debt, the ECU becomes a reserve asset and a means of settlement through a scheme for the depositing of reserves with the European Monetary Cooperation Fund (or FECOM, after its French initials.) FECOM was established in 1973 to be the clearing agent between European Community members of the original "snake." For present purposes, it may simply be regarded as a set of books, maintained by the Bank for International Settlements (BIS) on behalf of the European Community. Each EMS participant has an account with FECOM, which is empowered "to receive monetary reserves from the monetary authorities of the member states of the Community and to issue ECU's against such assets."

Each member is required to deposit at least 20 percent of its holdings of dollars and gold in FECOM, against which it receives an equivalent amount of ECU's. (At three-month intervals, adjustments in amounts deposited may be required to maintain this ratio. 9/) Through these deposits an initial stock of ECU's is created. They represent reserve assets for the governments participating in the EMS. They may be transferred, subject to a limit, 10/ to the FECOM accounts of other members in settlement of ECU denominated debts. (In addition, dollars, gold, SDR's, or holdings of other members' currencies will continue to serve as means of settlement.)

The act of "depositing" dollars and gold with FECOM requires clarification. One might imagine that FECOM would thereby acquire assets--dollars and gold--which it "owned", and could presumably invest according to policies set by its governing authority. That is not the case. The "ownership" of those dollar/gold assets is legally ambiguous, and has touched off some political controversy. In France, some prominent Gaullists raised objections, in the National Assembly, to the government's transfer of gold/dollars to FECOM. Though the debate seemingly turned on the authority of the government to deposit those reserves with FECOM, the underlying concern was no doubt the perception of a threat to French monetary "sovereignty" from the transfer of French reserves to an embryonic supra-national monetary authority.

Germany claimed to lack a legal basis for transferring ownership of gold and dollar reserves to FECOM. According to the German Bundesbank, "a final transfer of parts of the central banks' gold and dollar reserves to the (FECOM) during the initial phase (the first two years of the EMS) is not intended. For any final transfer of reserves of the Bundesbank,.....a legal basis would have to be created in the joint view of the Federal Government and the Bundesbank." 11/

Creating such a legal basis at the outset would probably have exposed the EMS to political opposition within some national parliaments. It would certainly have raised difficult questions about the powers and authority of FECOM. The expedient chosen was to postpone those issues for the initial two-year experimental phase of the EMS, and to dodge the problem of transferring "ownership" of reserves to FECOM by resorting to so-called "swaps."

Technically, the participating central banks engage in three-month "swaps" with FECOM. A "swap" is a simultaneous "spot" sale and "forward" purchase of an asset. The swaps between central banks and FECOM are sales of dollars and gold to FECOM, in exchange for ECUs, combined with central bank commitments to purchase dollars and gold back from FECOM (by selling ECU's back to FECOM) three months hence. There is also a commitment to renew these three-month swaps, when they mature, throughout the initial two-year phase.

There is a peculiar feature of these transactions that distinguishes them from normal swaps. The "swapped" gold and dollars are not actually at the disposal of FECOM. They remain in the possession of the central banks, who continue to store the gold and invest the dollars to earn interest. Nonetheless, a proper accounting of the governments' international reserve positions would not show those "swapped" dollars and gold as reserve assets. Rather, the ECUs credited to their accounts at FECOM should replace (not supplement) the swapped gold/dollar assets in the international reserve holdings reported by EMS members.

A politically convenient feature of this arrangement is the fact that FECOM has no actual assets to deploy, i.e., its governing board has no investment decisions to make. This is not a general characteristic of swaps. In a normal swap, each participant has complete ownership of whatever he purchases spot, and can dispose of it as he wishes. FECOM is, at this stage, simply a bookkeeping operation with no initiatives to take in expanding or shrinking the assets or liabilities of its balance sheet, or altering their composition. ECUs come into being

through the 20 percent deposit requirement and are passed about from country to country as members settle accounts with each other. FECOM just records the transfer. In principle, no new international reserves are created. Some existing ones are simply renamed "ECU's".

In practice, there may be some reserve creation due to the price at which gold is valued for the purpose of determining an ECU value for gold. A country might obtain more real purchasing power from its gold stock by depositing that gold with FECOM than by selling it for foreign exchange. The option of depositing gold for ECU's might induce some countries to mobilize their gold for more active use in financing deficits than they otherwise would. The recent sharp jump in the price of gold has significantly increased the value of the gold held as international reserves. With their reserves worth much more, deficit countries could, in principle, finance larger deficits, or finance them for a longer time, thereby postponing the anti-inflationary policies they would otherwise be constrained to implement. By denominating some portion of their gold in ECU's, they would, moreover, be much more inclined to actually draw on those reserves for deficit financing. Thus it appears that the run-up in the price of gold combined with the swap of a portion of gold reserves for ECU's could generate more inflation in the EMS. (Preliminary calculations indicated that ECU's created against the deposit of gold would rise, due to the increase in the price of gold, from a dollar equivalent of about \$21 billion in June to about \$25 billion in September of 1979.)

Nonetheless, this argument is not conclusive. What has appeared to be "immobile" gold reserves might in fact function as full-fledged reserves by serving as collateral, explicitly or implicitly, for official borrowing, or by permitting governments to draw down their other reserves. (If a government owns gold, it may be more willing to see its stock of other assets fall to low levels before reacting.) Moreover, the price of gold is so volatile it is not obvious that an EMS member could rely for long on its gold stock, whether denominated in ECU's or not, to finance excessive deficits and avoid anti-inflationary remedies. Given these ambiguities, it is not clear that denominating a portion of a country's gold stock in ECU's will have much impact. The effect will probably be small, despite some concern "that light-hearted decisions to remonetize \$14 billion odd of gold (as in the EMS Agreement) could have inflationary effects...if undertaken at a cyclically inopportune moment." ^{12/} That concern is misplaced, since denominating gold reserves in ECU's, through depositing gold in FECOM, need have no effect on any country's potential rate of monetary expansion. The gold need not, in that sense, be "remonetized."

FECOM has no institutional or economic significance, being just a set of books for recording transactions. We have treated it at some length to dispel the illusion that something of importance has been created. But it could be the embryo of a major, and controversial, innovation.

The Bremen meeting of the European Council, in July 1978, called for the creation of a "European Monetary Fund" (EMF)

to replace FECOM. The EMF would accept deposits of members' reserves, and issue ECUs, just as FECOM now does. But, as initially envisaged, it would also have been empowered, within limits, to issue ECUs against the deposit of national currencies. That would have represented a portentous step in the direction of a supra-national monetary authority for the EEC. An EMF with those powers could effectively create new international reserves. Countries would obtain additional ECUs simply by depositing, with the EMF, some of their own currency, which their central banks can create at no cost, and without limit. Those ECUs could be used, within the EMS, to settle official debts with other member countries. The EMF would acquire member country currencies, the deployment of which could affect exchange rates and the monetary policies of those countries. At the extreme, one could foresee an EMF empowered to conduct open-market operations--exchanging ECU's for financial assets issued by member countries--on its own initiative.

The call to establish an EMF was not heeded. By December 1978, the European Council was prepared to empower FECOM to issue ECUs only against the deposit of dollars and gold. That is, it could not create additional reserves, but simply rename existing ones. Nonetheless, the resolution retained a commitment to move toward an EMF empowered to create new reserves, albeit within limits: 13/

We remain firmly resolved to consolidate, not later than two years after the start of the scheme, into a final system the provisions and procedures thus created. This system will entail the creation of the European

Monetary Fund as announced in the conclusions of the European Council meeting at Bremen on the 6th and 7th of July 1978, as well as the full utilization of the ECU as a reserve asset and a means of settlement. It will be based on adequate legislation at the Community as well as the national level.

The proposal of the Bremen meeting of the European Council was quite ambitious, as it called for the creation of about 25 billion new ECUs against the deposit of national currencies. By comparison, one might note that the initial creation of SDR's by the IMF amounted to about 9.4 billion SDR's, the equivalent of about \$10 billion, spread over three years and distributed among most of the members of the IMF. At present exchange rates, 25 billion new ECU's would be equal to about \$35 billion in new reserves. They would, however, only be usable among the members of the EMS.

The reserve creating power of any EMF likely to be set up in the near future will probably be more modest. It is most unlikely that it would, at the outset, be given discretionary power over the issue of ECUs against national currencies. The extent of new ECU creation would no doubt be fixed in advance, and might not be very large. There is, nonetheless, considerable skepticism that EEC members will be able to agree to grant an EMF even such limited power. Many will fear that ECUs created by an EMF--especially on the scale of 25 billion ECU's--could undermine the monetary policies of member governments, greatly relax the "discipline" that balance-of-payments deficits should impose on deficit countries, and impart to the EMS an inflationary bias.

The attempt to lodge real monetary powers with a supra-national body, even if such powers are initially closely circumscribed, would pose for the European Community a major question it has so far evaded: How shall political control over the EMS be exercised? 14/ The EEC has not yet had to face that question because the EMS, in its present form, leaves the full powers of monetary policy in national hands. The attempt to work a fixed exchange rate system without disturbing national monetary autonomy is highly problematical, dependent for success on the voluntary harmonization of monetary policies. But it is politically easier to launch such a system, (compared to a true monetary union), precisely because the harmonization it requires remains voluntary, and national sovereignties appear to remain intact. An EMF with some limited reserve creating powers, and with an implicit ambition to acquire more, could threaten those autonomies. Who should decide on the future rate of new reserve creation? Would the German central bank, jealous of its monetary independence, think that German interests would be sufficiently safeguarded just because the German government, controlled by the party of the day, had an equal voice in the governance of such an EMF? Would any of the governments, recognizing that real political power was at stake, permit an EMF to fall under the sway of mere central banks?

The power to create new reserves is the power to run an expansionary monetary policy for the entire EMS, or to override the restrictive policies of some of its members' central banks. The European Community will not call that power into existence at the outset, just by authorizing a small initial issue of new ECUs. But everyone will

recognize the potential latent in the institution, and thus the importance of political control over its future. Everyone will see, in embryo, a future European central bank that could eclipse national central banks. A report on the EMS, based on hearings held by the European Parliament, clearly points to that potential:

"(a) It is the intention that in due course the member states will receive a total of 25,000 million ECU in exchange for an equivalent amount in their national currency. In this way, the EMF will have national currencies at its disposal enabling it to take intervention measures and grant credits. The EMF will thus become a banker and play a part in decisions concerning the supply of DM, FF, etc. Potentially, this is a very important development.

(b) Making the granting of credits subject to compliance with economic policy conditions is the only compulsive way of bringing about convergence." 15/

Officials of the EEC can be quite forthright in outlining their ambitions for an EMF. According to the Chief Adviser of the Director-General for Economic and Financial Affairs of the European Commission, "The EMF must be more than an accounting and consultative body. In the near future it must dispose of its own assets and liabilities, play a role in intervention policy and in the granting of lines of credit, and lay the basis for an independent European central bank."16/

It is no wonder that, in the rush to launch the EMS, member governments drew back

from creating an EMF with even the hint of such real monetary powers, and left that step as a commitment for the future.

Divergence Indicator

From the outset, a key issue in the negotiations establishing the EMS was the choice between two different kinds of exchange rate systems: the "parity grid" and the "divergence indicator." Once it became clear that the support of the German Bundesbank for the EMS depended on the adoption of the parity grid, the German government insisted that the precise obligations to intervene must be those defined by the parity grid.

The parity grid is technically a complete, coherent, and consistent mechanism for exchange market intervention. It admits of no ambiguities. It can be defined and operated without any reference whatsoever to the ECU. If the EMS were based exclusively on the parity grid, there would have been no need for an ECU. (The use of the ECU as a unit of account in the credit arrangements is quite independent of the parity grid.)

The ECU is, however, at the heart of an alternative exchange rate mechanism, the "divergence indicator." This system was favored by the U.K. and France. When it was clear that Germany would not abandon the parity grid, the Belgians put forward the compromise on which the EMS was launched. Both exchange rate mechanisms were established, parallel to each other. The binding commitments governing intervention

are those defined by the parity grid, while the divergence indicator operates only as a signal, or warning device, with the "presumption" that governments will heed its warning.

How governments react to this warning will be crucial to the fate of the EMS. Before considering those reactions, however, it is important to clarify the technical relationships that tie together the parity grid, the ECU, and the divergence indicator. The nature of the interdependence among them can best be grasped by working through some illustrations.

Assume bilateral central rates for the parity grid are first established. These bilateral central rates can be chosen without any reference to an ECU. Now assume the ECU is defined. That is, specific amounts of each currency are chosen to comprise an ECU. This can be done without any reference to any central rates. Thus, bilateral central rates and the definition of the ECU can be determined independently. But, having been determined, they necessarily imply a specific set of "ECU central rates."

The method by which ECU central rates are determined is precisely the same as that described earlier for calculating the market-determined value of the ECU in terms of each currency, except that the officially defined bilateral central rates are used in place of market rates. For example, the ECU central rate for the DM is found by converting the specific amount of each currency in the ECU into an equivalent amount of DM, using bilateral central rates to make the conversion, then adding those DM to the .828 DM component of the ECU. The result is 1 ECU=2.48557 DM. This ECU central rate for

the DM is precisely determined, once the set of bilateral central rates and the definition of the ECU have been specified. The ECU central rates in effect after the first realignment of rates within the EMS (on Sept. 24, 1979) were:

1 ECU =

2.48557	DM	(Deutsche Mark)
5.85522	FF	(French Franc)
39.8456	BF	(Belgian Franc)
1159.42	L	(Italian Lira)
7.36594	DK	(Danish Krone)
2.74748	F1	(Dutch Guilder)
0.669141	IP	(Irish Pound)
0.649821	PS	(Pound Sterling)

In the illustration above, we moved from the establishment of bilateral central rates, and the definition of the ECU, to the determination of ECU central rates. If, instead, ECU central rates are given, one can derive bilateral central rates directly from them, without any reference to the definition of the ECU. (This is demonstrated in the appendix to this chapter.) The EMS agreement between central banks, as well as much of the literature on the EMS, speaks of bilateral central rates being derived from ECU central rates. Once the relationship between them is grasped, it makes no difference which is thought of as being derived from which. Bilateral central rates can be derived from ECU central rates, or ECU central rates can

be derived from bilateral central rates and the definition of the ECU. There is a real sense, however, in which bilateral central rates are more important than the ECU and ECU central rates. This report has proceeded by describing the parity grid and its bilateral central rates first, because it is important to understand that they can be defined independently of the ECU, and can serve as the basis for a coherent, consistent intervention system without reference to the ECU. Since it is the set of exchange rates between actual currencies that matters, the important issue concerns the definition of bilateral central rates. The determination of ECU central rates is then, given a definition of the ECU, just a matter of arithmetic.

These relationships among bilateral central rates, ECU central rates, and the composition of the ECU are developed more fully in the appendix to this chapter.

As market rates between currencies fluctuate, the market-determined ECU value of each currency fluctuates. The daily divergence of each currency's market-determined ECU rate from its ECU central rate reflects the divergence of market exchange rates from bilateral central rates. Indeed, the former is but a weighted average of the latter, the weights being those implied by the composition of the ECU.

A currency's divergence from its ECU central rate is not just an index--a single summary measure of its various divergences from its various bilateral central rates. Though it may be useful for some purposes to have a single measure of exchange rate behavior, one must always be cautious in interpreting the behavior of any

index, since the scheme for weighting its components is inherently somewhat arbitrary.

Given an ECU, a set of ECU central rates, and thus a set of divergences of ECU market rates from ECU central rates, one could construct an exchange rate intervention system based on the ECU. Intervention would still be in national currencies, since it can occur only in something traded in the market. At present, the ECU is neither held nor traded by anyone but central banks. It is simply an artificial composite unit of currencies. But intervention in currencies could be triggered by the movement of the ECU. That was, indeed, the type of intervention system implied by the Bremen communique on the EMS, issued by the EC heads of government in July 1978.

In such a system, each country would be obliged to intervene when its currency reached some stipulated limit of divergence from its ECU central rate. Intervention rules for divergence from ECU central rates could not, however, be as simple as intervention rules in the parity grid. In the latter, a currency reaches its limit (top or bottom of its band about its bilateral central rate) vis-a-vis some specific currency. Its government is then obliged to intervene in that currency. And the government of that currency incurs, simultaneously, exactly the same obligation. If currency A is at the top of its band against currency B, then B will be at the bottom of its band against A.

This simple symmetry does not hold for an ECU system. A currency can breach some stipulated divergence limit against its ECU central rate without any other currency moving outside its respective divergence

limit. That peculiar feature is precisely what makes the divergence indicator attractive to its supporters.

What accounts for this anomaly in the divergence indicator, and why is it regarded, by some, as a virtue? To answer the first part of that question, two concepts must be clarified: "maximum divergence," and the "threshold of divergence." (Confusion can be minimized by bearing in mind that both of these refer to divergences of a currency from its ECU central rate, as opposed to divergences from bilateral central rates.)

Under the parity grid, central banks are obliged to intervene to prevent their currencies from breaching the limits of divergence from bilateral central rates. Those bilateral limits thus define a maximum divergence of each currency from its ECU central rate. To calculate that maximum divergence, assume the currency has reached its permissible limit against every other currency in the ECU. For instance, assume the Belgian franc is at the bottom (or top) of its band against the French franc, the guilder, the DM, and all other ECU currencies. Using those exchange rates at the limit, one can then calculate an ECU value for the Belgian franc. That ECU value will represent the maximum degree to which the Belgian franc can diverge from its ECU central rate without going beyond any of its bilateral limits.

The degree of maximum divergence from ECU central rates is not the same for each currency. That may seem puzzling, at least for those currencies that have the same permissible degree of divergence from bilateral central rates. The Belgian franc and the DM, for example, can each diverge by

a maximum 2.25 percent from their bilateral central rates with all EMS currencies except the lira. Nonetheless, it does not follow that the Belgian franc and the DM can diverge from their respective ECU central rates to the same degree. The "maximum divergence" of the Belgian franc differs from that of the DM because the currencies do not play an equal role in the composition of the ECU. The DM is more heavily represented than the Belgian franc. The DM comprises about 33 percent, the Belgian franc (combined with the Luxembourg franc) about 9.6 percent of the ECU, based on the set of ECU central rates in place after the realignment of September 24, 1979. 17/

When any currency in the ECU moves against the other currencies, the ECU rate of that currency changes. But its ECU rate changes less than a weighted average of its change against the other currencies, because it is itself one of the components of the ECU, and does not change against itself. Thus, in diverging 2.25 percent from bilateral central rates against all other currencies, it would diverge less than 2.25 percent from its ECU central rate. The more heavily represented a currency is in the composition of the ECU, the less it would diverge from its ECU central rate, since the greater will be that portion of the ECU against which it remains constant. Consequently, the "maximum divergence" of the DM from its ECU central rate will be less than the "maximum divergence" of the Belgian franc.

For each currency, the "maximum divergence" represents an outer limit of permissible exchange rate movements. It is unlikely that it would ever reach that "maximum divergence," since it is unlikely it would ever simultaneously reach its

permissible divergence from its bilateral central rates with all other currencies in the ECU. The "divergence indicator" is designed to be an "early warning" device, signalling that some currency is out of step with the others. Obviously such a signal must be given before "maximum divergence" is reached. Fixing the point where the alarm sounds is necessarily somewhat arbitrary. The EMS fixes it at 75 percent of the maximum, and defines that point to be the "threshold of divergence." To calculate it precisely, simply determine the difference between a currency's ECU central rate and its ECU value at maximum divergence, and multiply that difference by .75.

Since the "maximum divergences" of the various currencies differ, and the "threshold of divergence" is three-quarters of maximum divergence, it follows that each currency's "threshold of divergence" is different. That is, the degree to which a currency must appreciate (or depreciate) away from its ECU central rate to reach its threshold of divergence will vary from currency to currency. That degree will be smaller for the more important currencies than for those comprising a lesser share of the ECU. To grasp this intuitively, imagine an ECU composed of only two currencies, one with a very large weight, the other very small. The more important currency reaches its "threshold of divergence" by moving a certain distance from its bilateral central rate with the less important currency. But that movement translates into a very small movement against the ECU itself, since most of the ECU consists of the large currency. Conversely, the smaller currency, in moving to its bilateral limit against the larger currency, would show a greater movement against the ECU. Given the current make-up

of the ECU, the DM reaches its threshold of divergence by appreciating (or depreciating) about 1.1 percent away from its ECU central rate. The thresholds of divergence for the other currencies are approximately: FF - 1.36%; Fl - 1.5%; BF - 1.53%; DK - 1.6%; IP - 1.66%; L - 4%. 18/

In the calculation of a currency's divergence from its ECU central rate, adjustments must be made to prevent the pound sterling and the lira from causing distortions. The ECU contains the pound sterling as one of its components, although the U.K. did not, at the outset, accept the intervention obligations of the parity grid. The pound is assigned nominal bilateral central rates against the other currencies, and bilateral limits at 2.25 percent are used to define "thresholds of divergence." As long as sterling's market exchange rates remain, in fact, within a 2.25 percent band around these nominal bilateral central rates, sterling is treated just like any other currency for purposes of calculating any currency's divergence from its ECU central rate. When sterling strays beyond that band, the calculations are made by assuming sterling to be precisely at the 2.25 percent limit. A similar adjustment is made for the lira. Though the lira enjoys a 6 percent band around bilateral central rates, the "thresholds of divergence" are calculated under the assumption that the lira's permissible bilateral limits are only 2.25 percent. When the lira strays beyond 2.25 percent, calculations of any currency's divergence from its ECU central rate assume the lira to be at the 2.25 percent bilateral limit.

The relationship between each currency's "threshold of divergence" and its possible

movements against each other currency cannot be easily summarized. A currency can reach, or even breach, its bilateral limit against one or several other currencies without reaching its "threshold of divergence" against the ECU; or it can reach its "threshold of divergence" without reaching any single bilateral limit. In the first instance, it may reach a bilateral limit against one currency, but be so close to its bilateral central rates against the others that it does not reach 75 percent of permissible divergence against the weighted average of all of them, and thus does not reach the "threshold of divergence." Or, in the second instance, it may be so close to its bilateral limits against several of them that it does reach 75 percent of its permissible divergence from the weighted average of all of them, even though it touches no bilateral limit against any single one of them.

When a currency does reach its bilateral limit against another currency, it may also cross its threshold of divergence; or that other currency may cross its respective threshold. But both cannot simultaneously cross their respective thresholds, i.e., both the strong and weak currency cannot simultaneously trigger the signal that both are so "divergent" that action should be taken to bring both back into line. 19/ This is the anomaly that so sharply distinguishes the divergence indicator from the parity grid. Under the latter, intervention obligations fall simultaneously on surplus and debtor countries. Under the former, whatever obligation is triggered by a crossing of the "threshold of divergence," it is triggered by a strong or a weak currency, but not by both.

Whatever its virtues, the divergence indicator suffers from several ambiguities, in addition to its technical complexity. There is some unease about an indicator that can fail to signal that a currency is "divergent" even though it has reached a bilateral limit within the parity grid. When it does signal that one currency is out of step with the composite of all the others, the divergence indicator is meant to point the finger at that country which should change its economic policies to bring its currency back in line. But the link between this technical, somewhat arbitrary exchange rate divergence and a fundamental divergence of economic policies is a bit loose. It may be difficult to interpret the divergence indicator properly when exchange rates are under the sway of random, accidental, or temporary forces.

There is a more fundamental problem with the conclusions to be drawn from the divergence indicator, even if it does help identify the country whose policies are out of step with the majority of EMS member states. In the absence of a clearly defined, unanimously agreed upon policy respecting both the overall community-wide rate of money expansion, and the corresponding consistent rates of expansion of national monies, the country singled-out by the divergence indicator could justifiably balk at the suggestion that it submit to "the tyranny of the majority." Why should it abandon its own inflation and employment goals in order to bring its policies into line with those of other members, particularly if it is divergent largely because it is more successful in attaining its goals than they are in attaining theirs? Although it was designed as a "trigger for policy coordination," the divergence indicator may,

in the final analysis, turn out to be a rather poor substitute for the real thing--the actual coordination of monetary policies.

Finally, the divergence indicator may be distorted by the movement of EMS currencies relative to the dollar. It is conceivable that an individual currency could cross its "threshold of divergence" because of changes in its value relative to the dollar. To the extent that a currency's relationship to the dollar is its "dominant" exchange rate, an appreciation or depreciation vis-a-vis the dollar could cause a similar change vis-a-vis other EMS currencies, thereby moving it to its "threshold of divergence" against them. (The tangled relationship of EMS currencies to the dollar is discussed more fully in the final chapter.) Again, the country singled-out could refuse to change its policies on grounds that the divergence was attributable to causes external to the EMS, or, more fundamentally, to the failure of the EMS member states to reach agreement on a common approach to the dollar.

These unresolved problems--monetary policy coordination and the establishment of an acceptable common policy toward the dollar--are discussed at greater length in subsequent chapters. Before turning to them, we examine the kinds of responses expected of a country whose currency has crossed the threshold of divergence.

What economic advantage does the divergence indicator offer, compared to the parity grid? Here the issues cease to be purely technical. They raise basic conflicts of interest, political as well as economic. The debate centers on the nature of

macroeconomic adjustment to balance-of-payments disequilibrium. 20/

At issue is an alleged asymmetry in the adjustment burden borne by deficit and surplus countries. When a country falls into balance-of-payments deficit (or surplus), its currency comes under pressure to depreciate (or appreciate). Letting it fall (or rise) is one of the primary mechanisms through which the balance-of-payments is kept in equilibrium. When its fall (or rise) is prevented, beyond narrow limits, by governmental intervention in the foreign exchange markets, alternative means must be found to correct the balance-of-payments disequilibrium.

According to classical theory (resurrected, with modern refinements, as the "monetary" approach to the balance-of-payments), disequilibria are ultimately self-correcting. But governments are loathe to rely on self-correcting mechanisms, which generally take hold only in the long run. In the short run, those mechanisms often seem to clash with other objectives of economic policy--notably, price stability and high employment. Governments tend to frame policy to cover a rather short future horizon; and they frequently adopt policies at variance with the actions needed to restore balance-of-payments equilibrium. As a rule, deficit countries should deflate, surplus countries should inflate. The refusal of either to undertake the required policy actions eventually forces the burden of adjustment onto the deficit countries. The reason for this is clear: Surplus countries are able to intervene to maintain their exchange rates virtually indefinitely because they sell their own currency, the availability of which is subject to their control, in exchange for

foreign currencies; deficit countries, on the other hand, are constrained to operate within the limits defined by their stock of international reserves, plus their access to credit. When reserves are depleted, and credit dries up, governments can no longer intervene to defend their exchange rates. They are forced to devalue. Britain struggled in vain, at considerable cost, to defend the pound in the 1960s, but finally had to devalue in 1967. Apparently fearing a weak pound in the future, the U.K. sought, in the negotiations on the EMS, to ensure that participants would have very generous access to official credit.

A large part of the case for the divergence indicator rests on the argument that the parity grid system imposes on participating countries asymmetrical adjustment burdens. Countries in deficit must eventually reverse the deficit, or devalue. Countries in surplus face no similar constraint. The necessity to act falls entirely on the deficit country. The economic policies required of the deficit countries--widely characterized as "austere" or "restrictive"--threaten to reduce employment and real growth, at least in the short run. In designing an exchange rate system, potential deficit countries tend to press for a mechanism that will also force surplus countries to take actions to correct payments imbalances more "equitably."

The argument that adjustment is asymmetrical should not be pushed too far. It is not true that surplus countries face no real constraint in the sense that they can be indifferent to surpluses indefinitely. Surpluses may imply a cost in real terms: The surplus country may be exporting real goods and services in exchange for financial

claims on deficit countries. At some point, it should want to limit its accumulation of financial assets and obtain something "real" in exchange for its exports. (After all, economic welfare is a function of real consumption as well as of the sometimes spurious security of hoarding claims to wealth.) Alternatively, its surpluses may derive from inflows of capital in excess of private capital exports. In that case, its intervention in support of fixed exchange rates alters the composition of its financial position vis-a-vis the rest of the world. Its liabilities to the rest of the world increase as foreigners purchase its bonds, securities, land, industries, etc., while it accumulates its offsetting claims on the rest of the world in part as official international reserves, which are typically placed in highly liquid financial assets. Beyond some limit, this may not be a desirable mix for an economy's external claims compared to its external liabilities.

Finally, and most importantly, the accumulation of international reserves expands the domestic money supply of the surplus country. Its central bank creates "new money" by purchasing foreign exchange through intervention. Intervention is simply an "open-market" operation in which the central bank purchases foreign currency instead of domestic financial assets. The domestic money supply expands by some multiple of the amount of such purchases. If this monetary expansion is unwelcome, the surplus country will usually try to offset it by contractionary domestic monetary policies. But it may be very difficult to offset the expansion completely, for very long. Beyond some limit, the resulting monetary expansion will stimulate greater inflation.

This monetary expansion in the surplus country could not be avoided by the surplus country even if it refused to intervene on its own. As long as its central bank extends the credit necessary to finance intervention by the deficit country, the monetary consequence is the same, regardless of who intervenes. It is worth quoting the President of the German Bundesbank on this point:

"In the negotiations leading to the EMS, much attention was devoted to the proper sharing of the burden of intervention between surplus and deficit countries. But that question is largely irrelevant. Whether the obligation to intervene...lies with the surplus or the deficit country is purely a technical detail. In either case, the effect is the same...Even when the central bank of the deficit country must intervene, this leads to monetary expansion through the central bank of the surplus country, because the former must borrow the currency with which to intervene from the latter, or acquire that currency by selling its reserves...In every case the surplus country must supply more of its own currency and accept the danger that an expansion of its central bank's money poses for its stabilization policies."

21/

If the surplus country did nothing to counteract this monetary expansion, the immediate consequence, for countries whose financial markets are closely integrated, would tend to be a flow of capital from the surplus country, where the short run impact of monetary expansion is a fall in interest rates, to deficit countries, where the short run impact of monetary contraction is a rise

in interest rates. If capital flows readily in response to small interest rate changes, balance-of-payments equilibria can be temporarily restored through these private capital movements. Official intervention in the foreign exchange markets would then serve not only to finance transient deficits, but, more importantly, to bring about the relative changes in monetary expansion required to induce private capital flows from the surplus to the deficit countries. Some claim that, prior to the creation of the EMS, the "snake" operated reasonably well precisely because the deficit countries permitted their deficits to restrain domestic monetary expansion, while Germany, the surplus country, permitted her surplus to push domestic monetary growth above the official target. 22/

But these private capital flows may not be adequate to correct the balance-of-payments disequilibrium. Even worse, they may operate perversely, flowing from the deficit to the surplus country, if the force of attraction is speculation on future changes in exchange rate parities rather than interest rate differentials. If capital flows fail to correct the imbalance, or even exacerbate it, then continual official intervention to stabilize exchange rates will continue to expand the money supply in the surplus country, relative to that of the deficit country. Inflation will rise in the former, relative to the latter. If permitted to run its course, this change in relative rates of inflation would ultimately move the balance-of-payments toward equilibrium.

That would be the final stage in the classical self-correcting mechanism. There is no doubt that it would eventually be attained, if the mechanism were permitted to

operate without interference. But the lags between intervention, monetary expansion, inflation and ultimate balance-of-payments correction may be quite long, and unpredictable. Moreover, the surplus country will not readily accept higher inflation, but will seek to counteract, through other tools of domestic monetary policy, the monetary expansion set in train by its foreign exchange intervention. It tries to "sterilize"--i.e., to offset--the monetary consequences of its balance-of-payments surplus. Complete sterilization may be difficult, especially in the long run. But it can, in the short run, thwart any "self-correction" of the surplus. ^{23/} The fact that the surplus country can "buy" time is important, for it may never have to make the required adjustments in its domestic policies if the deficit country runs out of time (i.e., reserves and access to credit) and is forced to devalue.

In short, the self-correcting mechanism is not, in principle, asymmetrical. To the deficit country, the "burdens" of adjustment might appear unfairly distributed, since it is generally forced to accept slower growth and higher unemployment, while the surplus country enjoys a temporary expansion of output and employment, albeit at the risk of higher inflation. Nonetheless, if this adjustment mechanism were seen to operate efficiently, there would be much less conflict over the design of a fixed exchange rate system. The conflict stems from the asymmetrical ability of governments to short-circuit the adjustment mechanism, at least in the short run. As long as the surplus country can neutralize the monetary consequences of its surplus, through offsetting domestic monetary policies, it can indeed force most of the burden on the

deficit country, which would then suffer even sharper downturns in output and employment. The deficit country can also try to neutralize the monetary impact of its deficit--by expansionary domestic monetary policies--and thereby relieve itself of this heavier burden. But that only exacerbates the basic disequilibrium between the surplus and deficit countries. Inevitably the deficit country must give way, by imposing the deflationary policies it has sought to avoid, and probably devaluing its currency. Thus, the real problem arises not from the basic mechanism of adjustment, but from the asymmetrical powers of surplus and deficit countries to thwart its effective operation. The conflict over the modalities of the exchange rate regime is a struggle between those who want to preserve and those who want to curtail the greater power of surplus countries to thwart the adjustment mechanism. A victory for the surplus countries would, in the short run, impart a deflationary bias to the entire system; a victory for the deficit countries, an inflationary bias. Faced with this potential impasse, deficit countries seek a system that will pressure the surplus countries into more active measures to adjust away their surpluses. In recent years, international jawboning has become fashionable--as the United States, and others, have brought pressure on the "problem" surplus countries, Germany and Japan, to stimulate their economies in order to reduce their current account surpluses. 24/ But jawboning is no system, and the "jawbonee" can defend itself by asserting its right to autonomy in its economic policies, and arguing that it is being called to task for its success in utilizing its autonomy to achieve a lower rate of inflation than the deficit countries. So the need, from the perspective of potential deficit countries,

is to develop rules that commit potential surplus countries to take positive steps toward suppressing surpluses, and not to offset the expansionary impact of those surpluses on monetary growth.

Under the divergence indicator, the obligation to intervene--or to undertake whatever other policies are required to step back into line--falls solely on the government of the divergent currency. If that obligation were defined entirely in terms of intervention, the monetary consequences of the divergence indicator would not differ greatly from those of the parity grid. As noted earlier, the monetary impact of intervention is the same--increasing the monetary base in the surplus country, decreasing it in the deficit country--regardless who intervenes. ^{25/} One might argue that the impact could be felt much longer under the divergence indicator than under the parity grid. If the obligation is shifted entirely onto the divergent country, and if it is divergent because its currency is too strong, the other countries would initially be spared the loss of reserves. Since a surplus country can accumulate reserves without limit, there is no necessary constraint on the scope or duration of its intervention, i.e., no constraint on the scope or duration of monetary expansion in the surplus country, and contraction in the deficit country, as long as the strong currency remains "divergent."

It might then seem that the government of a divergent strong currency would be forced to extend credit indefinitely to the other countries--since its purchase of their currencies is a form of credit extension--if the rules of the system required the

divergent country to intervene. But, if the rules for settlement of those credit positions were similar to the rules for settlement under the parity grid, the "burden of adjustment" would not, in fact, have been shifted very convincingly onto the strong currency country. The other countries will see their money supplies contract as the strong currency country intervenes, and will lose reserves as they settle the debts imposed on them by that intervention. 26/

In short, the shift from a parity grid to a divergence indicator system would not significantly shift the burdens of adjustment as long as they stemmed entirely from intervention. The argument that a divergence indicator is needed to redress an alleged asymmetry of adjustment is, in terms of intervention policies, rather weak.

If intervention is the appropriate response when a currency diverges, it is not obvious which currency should be bought or sold. No other currency will be simultaneously divergent in the opposite direction. The currency out of line diverges against a composite of the others, not any single one, and it could be brought back into line by intervening in any of them, or any combination. The resulting intervention will interfere with the monetary policy of the government whose currency is bought or sold, and will establish new debtor-creditor relationships which may not be desired by all parties.

Intervention could be carried out in a non-ECU currency, such as the dollar. As noted earlier, that could work quite well in pulling the divergent currency back into line against the ECU. Nonetheless, intervention in outside currencies is supposedly ruled

out, in principle, for the purpose of staying within the parity grid or the threshold of divergence. But therein lurks a major ambiguity. No common policy for ECU currencies vis-a-vis the dollar has been publicly elaborated. Dollar intervention to attain a desired dollar rate cannot be distinguished from dollar intervention to attain a desired ECU rate or bilateral rate within the EMS. (This issue is explored more fully below.)

Intervention is not the only way, or even the best way to stabilize exchange rates. The divergence indicator of the EMS does not require intervention. Other policy responses are permitted, even encouraged. The significance of a divergence indicator--assuming countries respond to it at all--will lie in calling forth policy responses other than intervention. The parity grid requires only intervention. In the short run, the monetary impact of intervention can be offset by other policies. But the divergence indicator should call forth a more comprehensive policy response--whatever is needed to suppress divergence. In that sense it can potentially shift the burden of adjustment more squarely onto the economy of the divergent currency. If the DM diverges upward, and if Germany responds by adopting more expansionary domestic (particularly monetary) policies without intervention, the German economy could be stimulated to grow somewhat faster, the German monetary aggregates will rise more rapidly, German inflation will increase, and the DM will weaken. At the same time, other countries need suffer no contraction of their own real output or employment. That is the way some deficit countries would like to see adjustment operate. They could try to get it to operate that way with a divergence

indicator, but certainly not with the parity grid.

But the Germans (supported by the Dutch) resisted a rigidly defined divergence indicator system. They seem unwilling to accept much higher inflation solely to preserve existing central rates within the EMS.

Unless bilateral central rates are regularly adjusted, the EMS can survive only if national inflation rates converge around some common norm. 27/ Where should that norm be struck? At the relatively low German rate, at the relatively high rate of some of the deficit countries, or at some mid-point? Statements from German officials reveal a firm reluctance to compromise at a much higher level than recent German rates of inflation. Acceptance of precise and binding rules under the divergence indicator could have entailed convergence at an unacceptably high rate. Emminger is emphatic on this point:

"A convergence of inflation among EMS members around the mid-point would be unacceptable to us, and not just because Germany would thereby sacrifice, solely to obtain some exchange rate stability, the price stability it has struggled to achieve. The risk is even greater. If Germany should relax its grip on price stability, the danger would arise that other EMS members would relax theirs even more, and push the mid-point of inflation ever higher. The present example of the United States illustrates what can happen when, even temporarily, the task of stabilizing prices is not taken seriously." 28/

Far from showing any willingness to accept higher inflation to attain some intra-European exchange rate stability, Germany tends to see in the EMS a device for promoting anti-inflationary policies in the rest of Europe. According to this interpretation, the EMS is supposed to provide other European countries with support and encouragement in their efforts to converge on the relatively lower German rates of inflation. It provides like-minded officials in other European governments with a compelling rationale, invoking "stability" and European integration, with which to defend their own price stabilization programs. It offers the model of low-inflation German monetary policy as an alternative to high-inflation American monetary policy, on the implicit assumption that the rest of Europe must choose between stabilizing their exchange rates vis-a-vis either the DM or the dollar. While they could always choose to try to peg to the DM without any formal exchange-rate system, they would be more likely to succeed within the framework of a formal system, replete with mutual credit lines and public commitments to "stability" and "coordination."

Given the basic conflict of interests the various parties brought to the EMS, it could be launched only on the basis of an untidy compromise. The agreement under which it is to function during its initial two-year experimental phase calls for the parallel operation of both the parity grid and the divergence indicator. The parity grid defines the limits for compulsory intervention. The divergence indicator is monitored daily, but obliges no government to take specific action.

When a currency crosses its "threshold of divergence," there is a "presumption" that adequate corrective measures will be taken. The resolution 29/ establishing the EMS spells out the options:

"When a currency crosses its 'threshold of divergence,' this results in a presumption that the authorities concerned will correct this situation by adequate measures, namely:

- (a) Diversified intervention;
- (b) Measures of domestic monetary policy;
- (c) Changes in central rates; and
- (d) Other measures of economic policy.

In case such measures, on account of special circumstances, are not taken, the reasons for this shall be given to the other authorities, especially in the 'concertation between central banks.'

Consultations will, if necessary, then take place in the appropriate community bodies, including the Council of Ministers."

Prior to establishment of the EMS, Germany and several of the smaller European countries operated "the snake," an exchange rate system based on a parity grid. When the divergence indicator was introduced, it was popularly christened a "rattlesnake." It rattles when a currency crosses the threshold of divergence. Moreover, it may be poisonous. It points a finger, triggers consultations, and calls for action. If adequate measures are not taken, the authorities must explain why. They may have to defend themselves at high political levels, including the EC

Council of Ministers. It is unlikely that the choice of economic policies pursued, or eschewed, by the "divergent" country can remain a technical issue to be resolved by experts. The choices are too important for domestic economic welfare, and the fate of governments.

There is a tendency to belittle the significance of the divergence indicator. It calls forth only a "presumption" of action, not a legal obligation to implement well-defined policies. That looseness leads some to contend that, "because there is no obligation...to act, either in the exchange market or by adjusting domestic policies, it is not clear that the rattlesnake will have any real sting at all." 30/

It is not because of their supposed "legal" force that agreements among sovereign entities may, at times, prove effective, but rather because they alter, or reinforce, the structure of incentives that bear on national policy-makers. No government, intent on preserving the presumption that it acts in good faith with its closest allies, will lightly dismiss the divergence indicator. It may still resist certain policy reactions, but it would be unlikely to mount just a casual defense of that resistance.

At best, the "consultation" triggered by the divergence indicator may truly enhance economic understanding among different national policy-makers, and promote better policy coordination. "All experiences in the Community suggest that, without such a basis, policy coordination will tend to degenerate into a mere exchange of information without any removal of tensions in the system." 31/ At worst, the rattlesnake will poison progress toward economic integration, and

harden the commitment of governments, ever more sensitive to encroachments on their presumed independence, to their preferred national policies. It is precisely because it is so imperfect--such an uncertain step toward real monetary integration--that the sting of the rattlesnake could poison the hopes of its proponents.

As the language of the resolution makes clear, there is a presumption to act, but no presumption as to how to act. That reflects both a lack of certainty as to what the indicator may really indicate, in each instance, and a recognition that the most effective policies may be politically unacceptable. Complete leeway must therefore be granted to search for alternative policies. The divergence indicator does not necessarily indicate a "fundamental disequilibrium" in a country's external position vis-a-vis its EMS partners. It is too arbitrarily defined, and too ambiguous in its economic significance, to send that clear a signal. It may prove to be sensitive to transient factors, or to cyclical movements that tend to reverse themselves. There is no point in legislating a precise, unambiguous response to an uncertain signal.

Particularly important is the inclusion of "changes in central rates" as a possible policy response. That has always been the ultimate response--and admission of failure--in fixed exchange rate systems. It is also the counsel of realism, since the starting point of the EMS, in terms of the wide dispersion of rates of inflation among the various members, virtually guarantees that changes in central rates will be required as the system evolves. 32/ Indeed, most commentary on the EMS stresses this realism,

and emphasizes that the EMS is to be flexible, adaptable and adjustable.

The danger is that this "flexibility" will undercut the very purpose, in the official rhetoric, of the EMS: the creation of a "zone of stability" in European monetary relations. To create stability, the EMS decrees a mechanism for intervention, which can stabilize rates only in the short run, and a device for pressuring "divergent" countries into unspecified policy changes which they may perceive as detrimental to their domestic economic goals. As an escape valve, changes in central rates are admitted, but only after consultation and negotiation, at the highest political levels and with the unanimous consent of all members.

Managing this system through appropriately timed and well-modulated changes in central rates would be a major challenge to even the most astute policy-makers. They would always have to be a step ahead of the market itself. Undue delay in making necessary changes will be an open invitation to speculation. Uncertainty as to whether the authorities will act on time, as to when that time will be, and as to how much of a change they will decree--these uncertainties can easily transform the "zone of stability" into a zone of intermittent rigidity, intermittent abrupt change, and continuing unpredictability. In that event, it will be hard to see how floating has been improved upon.

As this report is written, the EMS has undergone one realignment of central rates. The original set of central rates was changed on September 24, 1979. This change represented an upward revaluation of the DM of about 2 percent, and a devaluation of the DK of about 3 percent, each calculated

against their original bilateral central rates vis-a-vis the other EMS currencies. It is premature, as of this writing, to assess the impact of this realignment on the smooth functioning of the EMS. Considerable pressure pushing the DM upward, and the DK and BF downward, had been building up. From the inception of the EMS in mid-March to the end of August, the Bundesbank's total intervention in support of other EMS currencies had mounted to more than DM 8 billion. It is reported that the Germans were quite eager to revalue the DM, partly to relieve the expansionary impact of this intervention on their money supply, partly to offset rising import prices with a higher exchange rate. 33/

Given the key role of the German mark in the EMS, the policies of the German Bundesbank will be a decisive factor in the evolution of the system. The Bundesbank enjoys considerable independence from the government, and wide political support for the maintenance of that independence in the conduct of a monetary policy whose primary emphasis is domestic price stability. The President of the Bundesbank, Dr. Otmar Emminger, laid out his views on the EMS in a widely noted article in the German financial press. It was generally interpreted as an authoritative public statement, and warning, of the dangers the Bundesbank foresees in the EMS. To quote from it: 34/

"If the discrepancies between the most important members (of the EMS) cannot be reduced quickly and significantly, it will be necessary, from time to time, to alter the structure of exchange rates in order to reestablish balance-of-payments and price equilibrium...There is tacit

agreement that necessary exchange rate adjustments must be undertaken as timely and smoothly as possible. They cannot be too frequent, otherwise the credibility (and the usefulness) of a fixed-rate system would be undermined. But if necessary adjustments are delayed, foreign exchange crises within the EMS, similar to those in the final stages of the Bretton Woods System, cannot be excluded...A timely adjustment of exchange rates is, to be sure, rendered more difficult by the requirement that all members agree...In the future we will see if the members have learned the lesson of earlier fixed exchange rate systems, that necessary exchange rate changes must be undertaken quickly, without a lot of commotion. That explains why it is so important that decisions on exchange rates be separated from decisions in other areas of economic policy, in particular from the highly publicized policies on agricultural prices."

Emminger then focused on the dangers that intervention can pose for monetary policy. As the EMS was launched, those dangers did not seem acute, despite the great disparities in inflation rates among the members, because the current accounts in the balance-of-payments of France and Italy were fairly strong. One could count on some initial, though no doubt temporary, stability of exchange rates. ³⁵In the medium to long run, however, the obligation of the Bundesbank to intervene in support of weaker currencies in the EMS would inevitably threaten to push German monetary expansion beyond tolerable limits.

What then? Of course exchange rate parities should be adjusted. But, even in the old snake, experience showed that political resistance could still block proper and timely adjustments. ("In many countries devaluation is still perceived as an admission of failure and a loss of political prestige.") When intervention and domestic monetary control prove incompatible, and no relief is afforded by changes in exchange rates, Emminger insists that priority be given to control of the German monetary aggregates:

"Can the intervention obligations undertaken within the EMS eventually endanger the autonomy of the Bundesbank in the conduct of monetary policy? What happens when necessary exchange rate adjustments are delayed, or not undertaken, and the Bundesbank is forced into massive intervention, entailing massive monetary expansion? The decision to change exchange rate parities lies within the jurisdiction of the government, not the Bundesbank. The Bundesbank has several options. It can try to neutralize the impact of intervention on the money supply through use of other instruments of domestic monetary control. But complete neutralization cannot always or easily be attained ...In extreme cases the Bundesbank can temporarily suspend intervention until a decision is made on exchange rates. In the debate on the EMS in the German Bundestag (Parliament) on December 6, 1978, the Minister for Economics stated that '...The obligations to intervene lie within the jurisdiction of the Bundesbank, as does the possibility of ceasing to intervene when it believes it can no longer do so,

in light of its policies on control of the money supply.' This has also been confirmed by the Finance Minister and the Finance Committee of the Bundestag."

No nation will honor commitments it regards as impossible or intolerable. (The United States gave but one such example by suspending its legal commitment to the gold convertibility of the dollar.) By emphasizing, at the outset of the EMS, that its intervention obligations are not irrevocable, the Bundesbank was not just belaboring the obvious. It was putting on record its determination to resist being pressured into financing a significant jump in German inflation solely to preserve the facade of a successful EMS should the politicians prove unable to bring off the required changes in central rates. Its autonomy is protected, even enhanced, by publicly stating this interpretation of its responsibilities, making clear its priorities, and documenting political support for them before the need to assert its right to cease intervention arises.

Since inflation will not quickly or easily converge on the German norm, the system can work only if its policy-makers display the highest skill, and summon the political will, to adjust central rates at just the right pace. That pace must be adequate to preclude a build-up of severe speculative pressures, but not so rapid that member countries can continuously evade the policies required for a long run convergence of their rates of inflation. 36/ Until governments demonstrate they can master that challenge, the EMS will be plagued by the very exchange rate uncertainty and instability it is supposed to alleviate.

The first realignment of rates--a fairly small adjustment undertaken about six months into the operation of the EMS--illustrates the difficulties the European Community will continually face in its quest for monetary integration. The Germans are reported to have sought a larger revaluation of the DM, while the Belgians, who blamed the strains within the EMS on excessively tight German monetary policy, were reluctant to devalue the BF, even though it had been one of the weakest currencies. ³⁷The Belgium economy is very "open"; that is, a large share of its output is exported (about 45 percent) and a large share of its domestic demand is met by imports (about 49 percent). Of this foreign trade, a large portion is carried on with its EMS partners, especially Germany. Devaluing the BF against the other EMS currencies would raise import prices significantly, and would quickly feed through to cause a general rise in Belgian wages, which are extensively indexed to the rate of inflation. Belgium would, in the final analysis, stand to gain very little in the way of enhancing the international competitiveness of its industries by devaluing.

If the BF is weak against the DM, the easiest solution for the Belgians would be to cajole the Germans into a more expansionary monetary policy. But the Bundesbank persisted, over the first six months of the EMS, in raising German interest rates. To keep the BF within its bands, the Belgians were forced to accept even higher interest rates. (Although Belgian inflation was virtually the same as Germany's, around 5 percent, the Belgian discount rate was driven to 9 percent, the Belgian prime rate to about 12 percent, compared to German rates of 5 percent and about 7 percent, respectively.) Nonetheless, exchange-market pressure on the

BF grew more severe, and the Belgians had to accept a small devaluation against the DM, no doubt disappointed that they and the divergence indicator they sponsored had failed to pressure the Germans into relaxing German monetary policy.

The other members of the EMS resisted a larger DM revaluation in part because it would have led to increases in the "monetary compensation amounts" (MCA's) paid to Germany to offset the impact of a higher DM on German farm prices. The details of this complex scheme need not detain us. Its general purpose is to shield the common agricultural prices of the EEC from changes that would otherwise occur when exchange rates are altered. The French refused to permit the EMS to be launched on schedule--delaying it from January to March--and tried to hold it hostage while bargaining for an agreement on phasing out MCA's. The agreement reached in March, permitting the EMS to commence, stipulated that the first one percent of any DM revaluation against the ECU would not entail an increase in MCA's. The DM revaluation against the other EMS currencies brought about in this first realignment was the equivalent of a one percent revaluation against the ECU. Granting the Germans a larger revaluation would have entailed an increase in MCA's paid to Germany--an increase at which the rest of the EMS reportedly balked. Thus, the accidents of a side issue, and one engaging the sharp political controversies of EEC farm policy, seem to have determined the limits of exchange rate realignment. That is not an encouraging precedent for the future management of the system.

CHAPTER II FOOTNOTES

1/ Arbitrage is the act of buying something in one market and selling it in another to profit from any difference in prices between the markets. If the dollar is cheaper in London than in Paris, arbitrageurs will buy it in London and sell it in Paris, until the price is the same in both centers.

2/ From this point on, reference will be made to the 2.25 percent, or 6 percent band, without qualification. That cannot, however, be taken literally. A little arithmetic will demonstrate that if currency A appreciates 2.25 percent against currency B, it is not necessarily true that currency B depreciates precisely 2.25 percent against currency A. That is a consequence of the fact that an exchange rate can be expressed in either of two ways, e.g., $\$1=2DM$, or $1DM=\$.50$. If the exchange rate changes to $\$1=3DM$, it would appear as a 50 percent appreciation of the dollar, in terms of the DM. But stating it the other way, as $1DM=\$.33$, it would appear as a 34 percent depreciation of the DM, in terms of the dollar. In the parity grid, the precise intervention limits for each exchange rate must be the same, stated either way. They cannot, therefore, represent exactly the same percentage change from central rates, stated either way. But the 2.25 percent (or 6 percent) band is a close approximation, stated either way.

3/ This fact is apparently not widely appreciated, judging from commentary on the "dollar defense" program launched by the United States on November 1, 1978. The commitment by the U.S. government to intervene heavily in defense of the dollar

was not its central feature. In principle, exactly the same impact on exchange rates could have been achieved if all the intervention were done by Germany, Japan, Switzerland, or anyone. Intervention by the United States contributed only a momentary psychological impact on the short run expectations of participants in the exchange markets by signalling to them that the United States had become "serious" about arresting the decline of the dollar. The key element of the U.S. program was the tightening of domestic monetary policy (which, by some measures, proved to be temporary), not the marshalling of vast funds for intervention.

4/ A "cross-rate" is the third relationship between any three currencies. Consider the DM, FF, and BF. From the point of view of the DM, it has DM/FF and DM/BF rates, while the FF/BF rate is a "cross-rate." If $1 \text{ DM} = 2 \text{ FF}$, and $1 \text{ DM} = 16 \text{ BF}$, the consistent cross-rate would be $2 \text{ FF} = 16 \text{ BF}$, or $1 \text{ FF} = 8 \text{ BF}$.

5/ This feature of the multicurrency intervention system is developed more fully in "Intervention Arrangements in the European Monetary System," Bank of England, Quarterly Bulletin, June 1979.

6/ Resolution of the European Council on the 5th of December, 1978 on the establishment of the European Monetary System (EMS) and related matters.

7/ This access is "privileged" to the extent it is granted on easier terms than the debtor could obtain from private markets. According to one line of criticism, that imparts an inflationary bias to the EMS. See Roland Vaubel, Choice in European Monetary Union, pps. 13-14.

8/ Except where the meaning is clear from the context, one should beware of loose language about the ECU "rising" or "falling," since it rises or falls in relation to individual currencies. It will, in general, rise against some and fall against others.

9/ The ratio to be maintained is between the ECU's created by depositing gold and dollars with FECOM and official holdings of gold and dollars (valued in terms of ECU's), not between a member's holdings of ECU's and its holdings of gold and dollars. Having received ECU's by depositing the required amount of gold/dollars, a member can proceed to spend them--by transferring them to the accounts of other members--without any obligation to reconstitute its holdings of ECU's. A member must make new deposits of gold/dollars with FECOM only if its reserves of gold/dollars rise, or their value in terms of ECU's increases. A special formula determines how gold is to be priced, in reference to recent market prices for gold, for purposes of setting the ECU value of gold.

10/ A creditor central bank is not obliged to accept more than 50 percent of its claim in ECU's. This represents a compromise between the desire for full transferability, and a reluctance, apparently on the part of some potential creditors, to permit an unwanted concentration of ECU's in their hands.

11/ "The European Monetary System," Monthly Report of the Deutsche Bundesbank, March 1979.

12/ John Williamson, "The Failure of Global Fixity," EMS: The Emerging European Monetary System.

13/ "Resolution of the European Council of 5th December, 1978 on the establishment of the European Monetary System (EMS) and related matters."

14/ "What is important is to realize that (the EMS) is a major political event which... touches off once again the fundamental debate on the transfer of power to the community and how it shall be controlled. The EMS necessarily raises the problem of the creation of a European Monetary Fund, its place within the Community, the regulation of its functions, and the question of democratic control over those institutions empowered to set the conditions on which financial support will be extended..." Michel Vanden Abeele, L'ECU, Une Monnaie Politique. Institut D'Etudes Europeenes, Universite Libre de Bruxelles. (Translation by BWC.) Mr. Vanden Abeele, Economics Advisor in the cabinet of the President of the European Commission, also expressed the opinion that the EMS was "built by people who intended to limit the sovereignty of central banks." Interview with M. Vanden Abeele in Brussels, April 19, 1979.

15/ Report by Gerhard van den Berge, of the Directorate-General for Research and Documentation of the European Parliament, on hearings on the European Monetary System held by the Committee on Economic and Monetary Affairs of the European Parliament.

16/ Dr. Manfred Wegner, "Das Europäische Währungssystem und die Folgen," Europa-Archiv, Folge 7, 1979. (Translation by BWC.)

17/ To calculate the "weight" of each currency in the ECU, divide the specific amount of each currency in the ECU by the total value of the ECU expressed in that

currency. Two kinds of weights can thus be calculated: the weight determined by ECU central rates, and the weight determined by market exchange rates. Using ECU central rates, the weight of the DM would be .828 DM divided by 2.48557 DM, or about 33 percent. That weight remains constant, as long as ECU central rates and the composition of the ECU are unchanged. The market-determined weight of the DM would, on the other hand, vary with the market-determined DM value of the ECU.

18/ As calculated by the Financial Times, September 25, 1979, p. 2.

19/ This feature of the divergence indicator system is described by the German Bundesbank in its article "The European Monetary System," op. cit.. According to that article, it is impossible, as the system is now defined, for two currencies simultaneously to cross their thresholds in opposite directions, i.e., one appreciating, the other depreciating against the ECU. Presumably it is possible for two currencies to cross their thresholds simultaneously in the same direction. The DM and French franc could simultaneously diverge, in opposite directions, if thresholds were set at 68 percent instead of 75 percent of maximum divergence, according to Wolfgang Rieke of the German Bundesbank, in his "Comments" in EMS: The Emerging European Monetary System.

20/ "In light of the quite distinct political significance of the currency 'basket' scheme (i.e., the ECU and divergence indicator), I find it hard to understand the rationale of the comment in the British press and elsewhere, which urges us not to get diverted by the technicalities of the EMS but to concentrate on the issues of principle. Rarely, in fact, in the business of

international politics do the technicalities so clearly express the essential points at issue as in this case." Memorandum by Sir Andrew Shonfield, in Proposals for a New European Monetary System, Minutes of Evidence, Expenditure Committee (General Subcommittee), the House of Commons, November 3, 1978, p. 58.

21/ Otmar Emminger, "Das Europäische Währungssystem und die deutsche Geldpolitik," Handelsblatt, March 26, 1979. (Translation by BWC.) Implicit in Emminger's statement is the assumption that when the deficit country sells the financial assets it holds as reserves in order to acquire the demand deposits with which to intervene, it sells them to the central bank of the surplus country in exchange for newly created bank deposits. Selling those reserves in the private markets need have no impact on any country's money supply but its own. If, for example, it holds U.S. Treasury securities, and needs DM for intervention, it could sell the Treasury securities for dollars on the U.S. money market, then sell the dollars in the foreign exchange market for DM, then sell the DM for its own currency. If the Fed and the Bundesbank remained passive, there would be no change in the U.S. or German money supply but a contraction in the money supply of the deficit country.

22/ Niels Thygesen, "The Emerging European Monetary System: Precursors, First Steps and Policy Options," EMS: The Emerging European Monetary System.

23/ Thus the admonition, by a European official closely concerned with the EMS, that surplus countries should "keep their cool and not try to offset quickly and completely the liquidity effect of sudden inflows of

reserves." Jacques van Ypersele de Strihou, "Operating Principles and Procedures of the European Monetary System," Brookings Institution seminar paper (April 1979).

24/ "In practice,... deficit countries have to adjust when they exhaust their credit worthiness, while surplus countries become subject to ad hoc moral pressures when their surpluses get large enough to inconvenience other powerful countries, which tends to mean the United States." Williamson, op. cit.

25/ As we understand the rules of the EMS, this assertion should be true for the EMS. It is not necessarily true in general. In the EMS, members supposedly hold only small amounts of their reserves in assets denominated in other members' currencies. The Bundesbank, by purchasing FF, would presumably not increase its small holdings of FF assets. They would be transformed into an ECU asset of the Bundesbank, an ECU liability of the French central bank, and, in the process, the French monetary base would shrink, and the German monetary base expand, by an equivalent amount. Bundesbank intervention in dollars would not, however, shrink the U.S. monetary base, because the Bundesbank would typically use those dollars to purchase dollar-denominated assets (e.g., Treasury securities) and, in effect, restore those dollar balances to the U.S. banking system. This practice sterilizes any impact of U.S. deficits on the U.S. money supply, and thereby retards the adjustment mechanism. The alternative would be for the Bundesbank to hold its dollar reserves as deposits with the Federal Reserve, or in Treasury securities supplied by the Fed from its own portfolio. Then the U.S. monetary base would contract. For a more detailed examination of these results, see Anatol B. Balbach, "The

Mechanics of Intervention in Exchange Markets," Federal Reserve Bank of St. Louis Review, February 1978.

26/ Among others, the British government recognized that obligatory intervention under a divergence indicator system could force them to lose reserves, even when the pound was not divergent. Thus Mr. Healey, the Chancellor of the Exchequer, testified before a committee of the House of Commons: "One of the proposals which we have made... is that when a currency is found to be divergent... it should be automatically obliged to intervene to bring itself back within the system; and that the debts innocently incurred by countries whose currencies are used in intervention should be frozen, rather than should have to be repayed." Proposals for a New European Monetary System. Minutes of Evidence, Expenditure Committee (General Subcommittee) November 3, 1978, page 63. Though freezing the debts arising from intervention would protect other countries' reserves, it would not alter the impact of intervention on their money supplies.

27/ Inflation need not be the same in each country, but the spread, to be compatible with fixed exchange rates in the long run, must be fairly narrow. For further discussion, see Chapter 3.

28/ Emminger, op.cit. (Translation by BWC).

29/ "Resolution of the European Council of 5th December 1978 on the establishment of the European Monetary System (EMS) and related matters."

30/ Benjamin J. Cohen, "Europe's Money, America's Problem." Foreign Policy, Summer 1979.

31/ Thygesen, op. cit.

32/ One close observer suggests that European monetary authorities initially envisaged about one realignment of central rates per year, compared to the approximately half-annual realignments of the old snake. Thygesen, op. cit.

33/ The Financial Times, (September 25, 1979, page 2) reports "unparalleled satisfaction and relief by West German politicians, bankers and industrialists....this reaction is about the opposite of that thought likely by many other Europeans when the EMS was being established. Then, it was suggested that the West Germans were seeking to hold down the Deutsche Mark artificially and flood the markets of partner countries with cheaper exports."

34/ Emminger, op. cit. (Translations by BWC.)

35/ The relative tranquility in the foreign exchange markets during the initial few months of the EMS had less to do with the current accounts of the members, and more to do with the expectations of potential speculators. The political commitment to the EMS was so impressive, and the reserves plus credit available for short run support of weak currencies so ample, that there was little chance of a change in central parities during the initial months of the system's operation. Given that basic expectation, speculation would be a stabilizing force. It may well have accounted for the unusual behavior of EMS currencies in the first few months when supposedly weak currencies were in fact very strong. With interest rates in the countries of supposedly weak currencies much higher than those of supposedly strong currencies, short term capital could easily

flow from the "stronger" to the "weaker" in search of higher returns, since the near term risk of devaluation was thought to be very small. Nevertheless, many market participants expected at least some small degree of adjustment of parities within the first year of operation of the EMS. It is instructive to note how quickly the initial expectation of near term stability gave way to the expectation of imminent change, with growing upward pressure on the DM, leading to the realignment of September 24.

36/ In other words, "what is needed is to have, or simulate, a crawling peg with a diminishing rate of crawl." Alexander K. Swoboda, "Comments" in EMS: The Emerging European Monetary System.

37/ This account of the first realignment is based on The Economist, (September 29, 1979), and Le Monde (September 25, 1979).

APPENDIX TO CHAPTER II

To clarify the relationships between bilateral central rates, ECU central rates, and the definition of the ECU, it is useful to examine a simplified version of the real system. The ECU itself consists of nine currencies, which render the mathematics of their interrelationships rather tedious. Nothing is sacrificed in understanding the logic of those interrelationships if we focus instead on a simpler system consisting of only three currencies, for example, the German mark (DM), French franc (FF), and Italian lira (L).

Assume these three currencies comprise an "Artificial Currency Unit" (ACU). The ACU would be composed of specific amounts of each currency. Let:

d = amount of DM in the ACU
 f = amount of FF in the ACU
 l = amount of L in the ACU

So 1 ACU = d + f + l.

Each currency has an ACU central rate. Adopting the notation DM/ACU to mean the number of DM per unit of ACU, FF/ACU to mean the number of FF per ACU, etc., we can let:

$$a_1 = \frac{DM}{ACU}$$

$$a_2 = \frac{FF}{ACU}$$

$$a_3 = \frac{L}{ACU}$$

Each currency has a bilateral central rate in terms of each other currency. Let those central rates be:

$$b_2 = \text{FF/DM} = \text{number of FF per DM}$$

$$b_3 = \text{L/DM} = \text{number of L per DM.}$$

These suffice to define all central rates, since the other central rates can be expressed in terms of b_2 and b_3 :

$$1/b_2 = \text{DM/FF} \quad b_2/b_3 = \text{FF/L}$$

$$1/b_3 = \text{DM/L} \quad b_3/b_2 = \text{L/FF.}$$

The bilateral central rates can be derived directly from the ACU central rates. For instance, a little arithmetic reveals that, if $b_2 = \text{FF/DM}$, $a_1 = \text{DM/ACU}$, and $a_2 = \text{FF/ACU}$, then, for the system to be internally consistent, it must be that $b_2 = a_2/a_1$. And, $b_3 = a_3/a_1$.

All these relationships are recorded in the following table:

TABLE OF CENTRAL RATES

	ACU	DM	FF	L
ACU		$a_1 = \frac{DM}{ACU}$	$a_2 = \frac{FF}{ACU}$	$a_3 = \frac{L}{ACU}$
DM	$\frac{1}{a_1} = \frac{ACU}{DM}$		$b_2 = \frac{FF}{DM} = \frac{a_2}{a_1}$	$b_3 = \frac{L}{DM} = \frac{a_3}{a_1}$
FF	$\frac{1}{a_2} = \frac{ACU}{FF}$	$\frac{1}{b_2} = \frac{DM}{FF} = \frac{a_1}{a_2}$		$\frac{b_3}{b_2} = \frac{L}{FF} = \frac{a_3}{a_2}$
L	$\frac{1}{a_3} = \frac{ACU}{L}$	$\frac{1}{b_3} = \frac{DM}{L} = \frac{a_1}{a_3}$	$\frac{b_2}{b_3} = \frac{FF}{L} = \frac{a_2}{a_3}$	

The table is read by moving across a row to ascertain a currency's central rates. For example, what is the central rate for FF, in terms of the ACU and the other currencies? Reading across the FF row, one sees that the number of ACU's per FF is $1/a_2$; the number of DM per FF can be expressed as $1/b_2$, or its equivalent, a_1/a_2 .

From the definition of the ACU, and the relationships among the ACU central rates and bilateral central rates, several conclusions can be drawn. They are stated here for this artificial three-currency ACU, but can be generalized and shown to hold for the nine currency ECU.

(I) Bilateral central rates can be derived directly from ACU central rates. Knowledge of $a_1, a_2,$ and a_3 is sufficient to determine b_2 and b_3 .

(II) ACU central rates cannot be derived directly found bilateral central rates. The central rate relationships are:

$$(1) \quad b_2 = a_2/a_1$$

$$(2) \quad b_3 = a_3/a_1.$$

Three unknowns cannot be found from only two independent equations, so $a_1, a_2,$ and a_3 cannot be derived solely from knowledge of b_2 and b_3 .

(III) To derive ACU central rates, one needs, in addition to bilateral central rates,

the composition of the ACU. ACU central rates are determined by the equations:

$$(3) \quad a_1 = d + (1/b_2)f + (1/b_3)\ell = DM/ACU$$

$$(4) \quad a_2 = (b_2)d + f + (b_2/b_3)\ell = FF/ACU$$

$$(5) \quad a_3 = (b_3)d + (b_3/b_2)f + \ell = L/ACU$$

(IV) Although bilateral central rates can be derived directly from ACU central rates, and ACU central rates can be derived from bilateral central rates plus the composition of the ACU, the composition of the ACU cannot be derived from ACU central rates and bilateral central rates. That is, knowledge of a_1 , a_2 , a_3 , b_2 , and b_3 is not sufficient to determine d , f , and ℓ . It might seem that d , f , and ℓ could be found from equations (3), (4), and (5). But (3), (4), and (5) are not independent equations. They can be rewritten as:

$$(3)' \quad a_1 b_2 b_3 = (b_2 b_3)d + (b_3)f + (b_2)\ell$$

$$(4)' \quad a_2 b_3 = (b_2 b_3)d + (b_3)f + (b_2)\ell$$

$$(5)' \quad a_3 b_2 = (b_2 b_3)d + (b_3)f + (b_2)\ell.$$

Since $a_1 b_3 = a_3$, from (2), and $a_2 b_3 = b_2 a_3$, from (1) and (2), it follows that (3)' and (4)' are the same as (5)'. Instead of three independent equations, there is only one.

Thus, in addition to knowledge of the a 's and b 's, two of the three components of the ACU,-- d , f , and ℓ --must be known to determine completely the composition of the ACU.

- (V) It is not possible to change just one bilateral central rate. Changing b_2 requires changing either b_3 or b_2/b_3 .
- (VI) It is not possible to change just one ACU central rate, unless the composition of the ACU is also changed. That can be seen from equations (3), (4) and (5). For example, it is not possible to change just a_1 by changing just b_2 and/or b_3 . Though tedious, it can be shown that there is no combination of changes in b_2 and b_3 that leaves a_2 and a_3 unchanged. But, contrary to some assertions about the EMS, it is possible to change one ACU central rate without changing all ACU central rates. For example, a set of changes in b_2 and b_3 can be found that leaves a_2 constant, while changing a_1 and a_3 . In general, though, one expects a change in any ACU central rate to entail a change in all.

CHAPTER III

THE CRITICAL UNRESOLVED ISSUE:

THE HARMONIZATION OF NATIONAL MONETARY POLICIES

Though timely exchange rate adjustments will be required to make the EMS work in the medium run, over a longer period the ambition is to move toward a system requiring fewer and fewer adjustments and eventually a true monetary union. Real progress toward that goal will require a very considerable harmonization of economic policies, of which the coordination of monetary policy will be paramount. One argument for the divergence indicator, or for any kind of similarly "objective," even if somewhat arbitrary, indicator of disequilibrium is the need for something beyond the intervention obligations of the parity grid to goad members into more effective policy coordination. 1/

A true monetary union can be achieved by either the establishment of a single common European currency, or the irrevocable fixing of parities among participating European currencies. Technically, the choice between the two systems would appear to be unimportant. However, as the first Werner Report emphasized, "...psychological and political considerations would strongly support the adoption of a single currency thus guaranteeing the irreversibility of the action."

Whatever form monetary integration takes, it is attainable only with the establishment of a common European monetary policy. As

Richard Cooper, now U.S. Under Secretary of State for Economic Affairs, put it a few years ago: "A Europe with one money cannot be conceived without a Europe with one policy. The two ... go hand-in-hand." 2/

If integration takes the form of the creation of a common European currency, a common European monetary policy could be fashioned under the direction of a supra-national monetary authority; each country would transfer to such a supra-national authority all of the monetary control powers it now exercises. The coordination of monetary policies would cease to be a consideration since there would no longer be any independent policies to coordinate. Undoubtedly, disputes would arise concerning the direction of monetary policy within the union reflecting, in part, the narrower political interests of each of the constituent member states. But, however such disputes are resolved, no coordination problem could arise.

Coordination problems will be acute if the member states set as their goal a more or less permanent fixing of intra-European exchange rates. Whether or not this goal can be realized will depend on whether or not the constituent states pursue monetary policies that are mutually consistent with the maintenance of fixed rates. This requirement does not mean that all member countries must adopt the same uniform rate of money expansion; but it does mean that the member countries are constrained in their use of monetary policy.

The constraints imposed on the constituent states are of two sorts--the "agreed upon" growth rate of money for the union as a whole, and the mutually consistent set of

individual country money growth rates. The "agreed upon" overall rate of money expansion does constrain the money supply growth rates of the individual members, but the requirements for the fixing of intra-EMS rates of exchange are quite independent of the overall rate of money expansion. Whether the overall rate of money supply growth is high or low, all that is required for the fixing of exchange rates is that the overall rate be divided up properly among the member states.

It is possible that the EMS countries could enter into an explicit agreement respecting the overall growth of money for the union as a whole. One could then discover, in principle, those individual country money growth rates that would achieve both the desired overall rate of money expansion and the goal of fixed intra-EMS exchange rates. Assuming that the division of the overall rate of money expansion was "correct," foreign exchange market intervention would not be required except to counter the effects of random, transient or unforeseen exogenous shocks.

In the absence of any explicit community-wide agreement on the union-wide rate of money growth, there arises the inevitable question of how the constituent states will achieve the "correct" (i.e., mutually consistent) rates of money expansion. It is, of course, possible that the union would "agree" to let the overall rate of money growth be determined by a single member country. This possibility arises because in a union involving n convertible national currencies, there are only $n-1$ exchange rates in terms of any single currency. Thus, one member--and one member alone--can pursue a truly independent monetary policy. The

monetary policies of the other n-1 countries must be directed toward the single-minded purpose of preserving the fixed parities; for those other n-1 countries, monetary policy will cease to have any degree of freedom beyond the objective of pegging exchange rates. 3/As long as the other n-1 countries constrained their individual money supply growth rates in ways consistent with the maintenance of fixed rates, there would result, de facto, the proper division of money supply growth. From a political point of view, however, it is difficult to get everyone to follow the leader--unless the leader clearly sets an attractive model for all to follow.

The problems that can arise when a single member de facto adopts an independent monetary policy are amply illustrated in the events that led up to the EMS currency realignments on September 24, 1979. Given the widely divergent rates of inflation among the EMS members, some realignment of exchange rates would probably have been required eventually. But the realignment that took place on September 24 was quicker than most observers would have anticipated largely because of the very restrictive monetary policies put into place by the Germans. The German Bundesbank at the beginning of the year adopted a monetary policy that resulted in a near-zero rate of monetary growth (measured for M1) for the first nine months of 1979. In order to keep intra-EMS exchange rates within the originally prescribed bands, most of the other EMS members were forced to follow Germany's lead and to adopt even tighter monetary policies than before. When it became apparent that Germany would not reverse its policy stance and it became too difficult for the others to continue to follow the lead of Germany, the EMS members

felt constrained to abandon the original parities in favor of new ones.

The problem of devising a single community-wide monetary policy was summed up by Harry Johnson in these terms:

"The centrally co-ordinated policies of the Community will have to be devised to serve the average or majority interests of the members; and this will involve conflicts of interest. As is well known from the experience of national states, a policy designed to serve the overall national interest is not necessarily beneficial to, and, indeed, may bear cruelly on, the residents of the constituent regions of the nation. Similarly, a Community economic policy could bear severely on the welfare of an individual member nation. There is likely to be a national analogue to the existing regional problem within nations, in a Community currency area. Maintenance of overall balance in the Community's balance-of-payments with the outside world, or (with adequate flexibility of the exchange rate against the outside world) implementation of the monetary and fiscal policies required to achieve the desired Community trade-off between inflation and unemployment, may well mean that some member nations prosper while others suffer from chronic stagnation." 4/

The task of reaching a consensus on a community-wide monetary policy will prove formidable. However, if a single overall monetary policy is agreed upon, it is possible to state the objective requirements for the mutual consistency of national

monetary policies and the fixity of intra-union exchange rates. The rules are a direct outgrowth of the conclusions reached by the so-called "monetary approach to the balance-of-payments." It is appropriate, therefore, to set forth the central features of that approach in order to clarify the prerequisites of monetary integration through exchange-rate fixity. (A useful summary of this approach is the work of Mordechai Kreinin and Lawrence Officer. 5/)

The key proposition in the monetary approach to the balance-of-payments (hereafter referred to only as the monetary approach) is that balance-of-payments disequilibrium is the result of a discrepancy in the domestic demand for and the domestic supply of money. Specifically, under fixed rates of exchange, a balance-of-payments surplus occurs when the domestic demand for money exceeds the domestic stock of money; a deficit occurs when the domestic stock of money exceeds the domestic demand for it.

The relationship between balance-of-payments disequilibria and discrepancies in the demand for and supply of money is explained by Kreinin and Officer as follows:

A Surplus:

"A surplus occurs when the demand for monetary balances exceeds the money stock. If the excess demand for money is not satisfied from domestic sources..., funds will be attracted from abroad to satisfy it. Such an inflow can be generated by a surplus on commodity trade or on the service account, direct investments by foreign companies, or an attraction of private

long term or short term portfolio funds.
 The precise composition is immaterial
 --- 6/

A Deficit:

"----a balance-of-payments deficit reflects excess supply of money as a stock. When the stock of money exceeds the demand for money balances, people try to get rid of the excess supply. They do that by increasing purchases of foreign goods and services, by investing abroad, or by transferring short term funds abroad to acquire foreign assets. Thus the deficit is viewed as a spillover of the excess supply of money; its composition is immaterial. 7/

This reasoning does not mean that balance-of-payments surpluses or deficits are the result only of monetary policies. On the contrary, all of the other factors usually identified as having been the cause of balance-of-payments disequilibria--i.e., growth and inflation differentials, OPEC pricing decisions, trade and capital controls, etc.--are not reduced in importance in the monetary approach. The key notion of the monetary approach is that all factors affecting the balance-of-payments can be reformulated in terms of the effects they have on either the demand for or supply of money (or both), and that a persistent surplus or deficit in the balance-of-payments will always be associated with a persistent imbalance in the domestic demand for or supply of money. Whatever its initial cause, the ultimate resolution of the disequilibrium in the balance-of-payments requires a resolution of the disequilibrium between money demand and money supply; if the latter disequilibrium is resolved--by self-

correcting mechanisms or by conscious policy--the former disequilibrium will also disappear.

A second key feature of the monetary approach is the argument that balance-of-payments disequilibria are inherently temporary and self-correcting. A surplus--the result of an excess domestic demand for money--will continue only until the funds attracted from abroad raise the stock of money to the level necessary to satisfy the demand. It should be noted that the stock rises because the central bank intervenes in the foreign exchange market, purchasing the foreign exchange attracted from abroad with the new money it creates. A deficit--the result of a domestic excess supply of money--will continue only until the outflow of funds reduces the money stock to the level of desired money balances. Again, it is central bank intervention in the foreign exchange market that actually causes the stock to fall.

If this mechanism works well, why would a country ever face a balance-of-payments problem? Because the self-correcting characteristic of payments imbalances can be frustrated by the policy actions of the monetary authorities. Thus, if the monetary authorities pursue a sterilization policy -- which, in the case of a surplus country means the adoption of a policy designed to reduce the money supply at the same time the inflow of funds is serving to augment it; and which, in the case of a deficit country means the adoption of a policy to expand the money supply at the same time the outflow of funds is serving to reduce it--the initial payments disequilibria can persist for an extended period of time. 8/ Even if the inflows and outflows are not sterilized by the monetary

authorities, there is no guarantee that payments imbalances will be corrected quickly: lags in the adjustment of actual to desired money balances may be long and variable; factors that influence the supply of money may affect the demand for money in different ways or in different degrees, and thereby frustrate the adjustment process; and, the demand for money might not be stable.

The usefulness of these propositions of the monetary approach for analyzing the balance-of-payments does not depend on the complete validity of all the tenets of monetarism, though the approach was developed and refined largely by monetarists, and is generally regarded as an extension of domestic monetarism. The crucial point is the proposition that all balance-of-payments changes will be reflected in changes in the excess demand for money. Thus, changes in exchange rates, tariffs, interest rates, fiscal policies, monetary policies, energy policies, regulatory policies, levels of income and inflationary expectations, to mention only a few forces, will have a significant impact on a country's balance-of-payments only to the extent that they alter the balance between the supply of and the demand for money. Indeed, any factor upsetting that money balance will also upset the payments balance; and any corrective action to enforce the payments balance can only succeed by reestablishing the money balance.

The rule for the coordination of national economic policies is thus clear. In order to ensure the absence of intra-union payments imbalances, policy makers must follow policies that keep the domestic supply of money in line with the demand for money, in

each national currency. If, as the monetarists allege, the long run demand for money is a stable function of a few variables, and these variables are independent of the factors that influence the money supply, the rule governing the coordination of national economic policies reduces to a rule governing the coordination of the supply of national monies. Short run discrepancies in the demand for and supply of money--implying short run balance-of-payments disequilibria--can be dealt with through appropriate foreign exchange market intervention policies.

Let us illustrate, first, the requirements that each country must meet in order to ensure the stability of exchange rates in the long run without direct official intervention. We will then examine the short run circumstances where intervention would be appropriate. 9/

Suppose the union members agree to a community-wide policy that calls for complete stability in the prices of intra-union tradable goods. 10/

Suppose further that for each country the long run demand for money balances is a stable function of that country's nominal GNP, and that the monetary authorities have the power to control the secular growth of the domestic money supply. Under these circumstances, each national monetary authority would be obliged to follow a very simple rule. Given the projected increase in real GNP and the projected increase in the GNP deflator (consistent with the agreed upon unchanged price of intra-union tradable goods), each monetary authority would maintain a growth of the domestic money supply equal to the sum of the projected

percentage increase in real GNP and the projected percentage increase in the GNP price deflator.

It is interesting to note that this simple rule has long been recognized by several European monetary authorities. As Armin Gutowski emphasizes:

"In its last report the West German Council of Economic Experts, of which I am a member, devoted a chapter to monetary policy in Europe, making some proposals and showing that they can be implemented in spite of differences in the tools used by European central banks.

The council recognizes the limits on member countries' solidarity and willingness to adapt imposed by their individual political and social situations. Taking for granted that all EEC members still intend to arrive finally at an economic and monetary union, the council feels that one possible new basic principle would be to make multilateral assistance from other member states conditional on all member states' forsaking some of their independence in national monetary policy and adhering to jointly agreed upon monetary policy targets. As the most adequate monetary aggregate, the council chooses the monetary base. Its expansion should move in line with the growth of productive capacity and with the rate of price increases deemed unavoidable. For each member a monetary policy objective has to be set at a level that varies according to the initial situation in the country. Over a period of time, the rates of central

bank money supply would have to move gradually closer to the target of the group of the most stable economies... If member countries agree on such rules for their monetary policy, a complementary commitment has to be made that joint assistance will be provided for intervention in the foreign exchange market as soon as exchange rates leave the path corresponding to the monetary targets--that is, the target zone." 11/

Note the implications of this monetary rule. Coordination does not require that each member grow at the same rate in real terms; nor does it require the same rates of domestic inflation (though any discrepancies which exist must be consistent with a constant price for tradable goods 12/): across country and within country differences in productivity growth rates could well produce differences in real rates of growth and inflation between countries that could, in principle, be accommodated within a union which has as its goal the irrevocable fixing of exchange rates.

What about the coordination of fiscal policies? Actually, such policies do not need to be coordinated. Given the circumstances described above, there is room for the development of independent fiscal policies to deal with "regional" problems of depression. However, in view of the rule governing national monetary policies, budget deficits arising out of independently formulated fiscal policies would have to be financed in private markets, the same as individual states within the United States must finance their deficits.

In the short run, official foreign exchange market intervention for the purpose of maintaining the stability of exchange rates would be necessary. At a minimum, it would be required because the short run demand for money is likely to exhibit considerable short run variation, creating temporary discrepancies in the demand for and supply of money, and corresponding temporary payments imbalances. It is critical, however, that the secular or long run growth in the domestic money supply not be disrupted by these temporary swings in the balance-of-payments. (This assumes, of course, that the long run monetary growth paths are in fact consistent with long run exchange rate stability.) Thus, it is critical that the resultant inflows and outflows associated with discrepancies in the demand for and supply of money not be sterilized. Any departures from the long run growth path of the money supply should follow solely from changes in the projected rates of growth of real GNP and the GNP deflator.

The short of these considerations can be summarized as follows:

1. If the union members are unwilling or unable to coordinate their monetary policies in the manner described above, the inevitable result, under fixed rates of exchange, will be growing intra-union payments imbalances;

2. If the union members refuse to adjust their internal monetary policies in ways required for the restoration of balance-of-payments equilibrium, payments imbalances will have to be eliminated either by changing exchange rates or by imposing restrictions on the

movement of goods and/or capital internationally;

3. If monetary policies are inconsistent, and if trade and capital restrictions are not imposed, it will be impossible to maintain the predetermined fixed rates of exchange. As long as capital movements are relatively free, speculative pressures will become so intense that a change in exchange rates becomes inevitable. The reason for the speculative pressures is simple: speculators are provided with the kind of situation they dream of--a sure thing! Since there is no prospect whatever that the par value of a country with a large payments deficit will ever be revalued, speculators are provided with a one-way option. At worst, the value of a currency would not be changed at all in which case speculators would lose only small amounts in the form of transactions costs. However, if the par value is changed, they profit immensely. Moreover, since speculative flows magnify the payments imbalances that were the cause of the speculative flows in the first place, speculation can act to intensify itself, virtually guaranteeing an unstable outcome.

4. Intervention operations, even if they are highly coordinated, can stabilize exchange rates only temporarily.

CHAPTER III FOOTNOTES

1/ "The main importance of the divergence Indicator is that it represents for the first time in Community and world monetary history an agreement on the use of an objective indicator as a trigger for policy coordination." Thygesen, op. cit.

2/ Richard N. Cooper, "Monetary Unification in Europe: When and How," Morgan Guaranty Survey, May, 1972.

3/ In order to illustrate this proposition, consider a union consisting of two countries only. There is only one exchange rate between the two countries. Both could agree to a rate of money expansion for each that would ensure a fixed rate of exchange between the two currencies. But, if one country were designated "the leader", the other country would be forced to adopt whatever rate of money expansion that, given the leader's monetary policy, would cause the exchange rate to remain fixed.

4/ Harry G. Johnson, "Problems of European Monetary Union," Euromoney, April 1971, p. 42.

5/ Mordechai E. Kreinin and Lawrence H. Officer, The Monetary Approach to the Balance of Payments: A Survey, Princeton Studies in International Finance, No. 43 (Princeton, New Jersey, Princeton University Press, November 1978.)

6/ Ibid., p. 8.

7/ Ibid., p. 9.

8/ A more technical discussion of these issues is contained in the appendix to this chapter.

9/ The material in the remainder of this section follows closely the recent important work by Ronald I. McKinnon, Money in International Exchange (New York: Oxford University Press, 1979), Chapter 10.

10/ For a discussion of this issue, see Ibid., pp. 233-234.

11/ Comments by Armin Gutowski, in Samuel I. Katz (ed.), U.S.-European Monetary Relations, (Washington, D.C.: American Enterprise Institute; 1979), pp. 73-74.

12/ It is possible that union members would agree to permit tradable goods prices to advance at a non-zero rate. If that were the case, intra-union inflation differentials would have to be consistent with the agreed upon rate of increase in the prices of tradable goods.

APPENDIX TO CHAPTER III

In this appendix we state more formally the requirements for the effective coordination of monetary policies within the EMS. We begin first with a precise statement of the conditions for balance-of-payments equilibrium and disequilibrium for each country as defined by the monetary approach. We then set forth the monetary policy coordination rules.

For simplicity, assume that the demand for nominal money balances (M_d) is a stable function (L) of the price level (P), real income (y) and the nominal interest rate (i):

$$M_d = L(P, y, i) \quad (1)$$

Assuming no money illusion, equation (1) can be rewritten as (2):

$$M_d = P L^*(v, i) \quad (2)$$

If it is further assumed that the demand for nominal money balances is unaffected by changes in the interest rate, or that the nominal interest rate shows no secular trend (an outcome that is consistent with the assumption that the price of tradable goods remains fixed $\frac{1}{P}$), then, for our purposes, equation (2) can be rewritten as (3):

$$M_d = P L^{**}(y)$$

And finally, if the income velocity of money is invariant to changes in real income, equation (3) can be written (4):

$$M_d = kPy$$

where k is the inverse of the income velocity of money. With a constant income velocity, equation (4) implies that an increase in nominal income will lead to an equi-proportionate increase in the demand for nominal money balances.

The money supply (M), on the other hand, is assumed equal to the product of the money multiplier, m , and the monetary base, B :

$$M = m \cdot B$$

The base is the sum of two components: a domestic component (D) and an international component (R). The domestic component consists of base money created by the monetary authorities through the purchase of domestic securities (via open market operations) or through direct lending to domestic banks; the international component consists of base money created by the monetary authorities through the purchase of foreign exchange. Under fixed exchange rates, a balance-of-payments surplus will result in an increase in the international component of the monetary base; a deficit will result in a decline in the international component.

Money-market equilibrium is given by equation (6):

$$M_d = kPy = m(D+R)$$

Expressing (6) in terms of differences, we obtain (7):

$$\Delta M_d = m \cdot \Delta D + m \cdot \Delta R$$

Balance-of-payments equilibrium means $\Delta R=0$; in other words, only when the change in the demand for money is equal to m times the change in the domestic component of the base. Thus, if ΔM_d exceeds $m \cdot \Delta D$, a balance-of-payments surplus will arise; the funds attracted from abroad will raise the international component of the monetary base, raising the money supply and setting in motion forces to eliminate the surplus. Similarly, if ΔM_d is less than $m \cdot \Delta D$, a balance-of-payments deficit will arise; the outflow of funds will lower the international component of the monetary base, lowering the money supply and setting into motion forces to rectify the external deficit.

Equations (6) and (7) represent money-market equilibrium conditions. Of course, the money-market need not be in continuous equilibrium. When the money-market is thrown out of equilibrium by one force or another, equilibrium will ultimately be restored, but it may take a considerable period of time. In the interim, as the money-market adjusts from one state of equilibrium to another, there will exist disequilibrium during which it is possible that $m \Delta D$ will not equal ΔM_d and yet $\Delta R=0$. Having acknowledged this

possibility, we now ignore it. The discussion here, and in the text, focuses instead on the fact that it is precisely the equilibrating of the total money-market that generates a non-zero ΔR when ΔMd does not equal $m.\Delta D$.

The balance-of-payment disequilibria will be self-correcting ultimately unless frustrated by a policy of sterilization. By sterilization is meant the adoption of a monetary policy designed to lower (or raise) the domestic component of the monetary base in line with the increase (or decrease) of the international component.

Assuming that the monetary authorities do not sterilize changes in the international component of the monetary base, and further assuming that agreement has been reached on the common policy that will permit stable exchange rates (we suggest as one possibility, in the text, stable tradable goods prices), each national authority would then follow the fairly simple rule described by equation 8:

$$m.gD = gy + gp$$

What (8) states is that gD , the change in D as a percent of the total monetary base ($D+R$), should be set equal to the projected growth rate of real output, gy , plus the projected growth rate of the GNP deflator, gp (the latter being constrained by the requirement that, for all countries, the prices of tradable goods must remain constant).

APPENDIX TO CHAPTER III FOOTNOTE

1/ On this point, see Ronald I. McKinnon, Money in International Exchange: The Convertible Currency System (New York: Oxford University Press, 1979) pp. 235-236.

CHAPTER IV

THE EUROPEAN MONETARY SYSTEM AND THE DOLLAR

It is often asserted that the European Monetary System was created to shield Europe, and Germany in particular, from the instability of the dollar. 1/

How is this to be understood? The value of the dollar can be unstable in two senses: in relation to goods, and in relation to other currencies. Under fixed rates of exchange, the tendency of the prices of traded goods to move in tandem, and the impact of required intervention in the foreign exchange markets on monetary growth, both operate to minimize inflation differentials among countries. Smaller countries can not, for very long, avoid adopting the rates of inflation generated by larger countries. Conventional theory holds that to shield oneself from having to import inflation governments would have to abandon the fixity of exchange rates and permit their currencies to float fairly freely. Freed of the obligation to intervene, each country could regain control over its domestic money supply, and thus over its own rate of inflation.

In 1973 fixed exchange rates between the major European currencies and the dollar were indeed abandoned. In the ensuing years, exchange rate flexibility made possible a much wider dispersion of rates of monetary expansion and rates of inflation among the major countries than could have been accommodated within a fixed exchange rate system without considerable turmoil and

realignment of parities. If U.S. inflation were the instability that troubled Europeans, the standard response would be that their economies were already effectively "shielded," at least to the extent they availed themselves of the freedom they enjoy to float against the dollar. They would not need to invent an EMS to make full use of that freedom.

The lessons of floating since 1973 are not easy to interpret, for at least three reasons. First, floating has been, at times, heavily managed, with considerable intervention. Second, floating was exploited, in some countries, not in order to bring monetary expansion under control, but to let it get out of control. 2/ The resulting exchange rate changes were apt to be attributed to an inherent instability in floating exchange rates, rather than the normal consequence of domestic monetary extravagance.

Finally, floating has had to cope with a shift away from the dollar as the currency in which many of the world's wealth holders prefer their assets to be denominated. We are not now concerned to explain this shift, just to note its importance for the way floating has worked, or has been perceived not to work very well.

These shifts can be characterized as "stock" adjustments, since they stem from desired changes in the currency composition of the existing stock of financial assets. For example, investors may attempt to substitute German for American securities in their existing portfolios. These stock shifts are superimposed on the foreign exchange transactions that arise from ongoing trade and other current account flows. Given

the large outstanding supply of dollar assets, relative to comparable assets denominated in other currencies, strong pressure on exchange rates can be touched off by modest stock adjustments of this type. In a free float, these stock shifts can induce significant changes in trade and other current account transactions. Assume, for example, that investors want to shift some portion of their assets from dollars to DM, over and above (and perhaps in a direction opposite to) the change in the dollar-DM mix arising from current account developments in the U.S. and German balances-of-payments. As they try to sell off dollar assets and purchase DM assets, the dollar depreciates against the DM. That exchange rate movement should, in the medium term, help improve the U.S. current account, and weaken the German current account--both developments being necessary to increase the supply of DM financial assets, and reduce the supply of dollar assets, in line with the kind of shift asset holders desire.

These exchange rate adjustments have appeared unduly disruptive to many policy-makers. At times, exchange rates seem to "overshoot" reasonable bounds, and lose their links to the underlying fundamentals (real output, trade, inflation, etc.) that supposedly govern exchange-rate behavior. This overshooting threatens the output and profitability of export and import-competing industries in the country of the "overvalued" currency, and dampens investment in those sectors. In addition, exchange rate fluctuations are thought to be fueled, at times, by perverse speculation, and to jump sharply over short periods rather than follow smooth paths. By appearing irrational, exchange rate fluctuations are thought to have deprived economic agents of a rational

basis for planning and decision-making. The more the exchange rate matters, i.e., the greater the share of trade and international capital flows in a nation's economy, the more sensitive the government will be to perceptions of disruptive fluctuations. (On this score, most European governments will necessarily be hypersensitive, compared to the United States.)

Whether this account of exchange rate behavior under the float of the past six years is well founded or not, it is the model most widely accepted in Europe. By and large, Europeans just do not think that floating works. ^{3/} The Germans, in particular, are thought to have suffered from a chronic overvaluation of the DM, and to have sought through the EMS to mitigate this overvaluation by creating a "common front" against the dollar.

Prior to the EMS, the DM (along with the Swiss franc and the yen) had become a "refuge currency" for investors trying to get out of the dollar. Speculative pressure against the dollar largely took the form of flows of funds into DM, Swiss franc and Japanese yen. There was a much smaller shift out of dollars into other European currencies. When the DM tended to appreciate relative to the dollar by more than the other major European currencies (save the Swiss franc), the DM would then necessarily appreciate relative to those other European currencies, a matter of considerable concern to the German authorities because almost half of German exports were sold in European markets. Some DM appreciation against other European currencies was quite appropriate, given the lower German rate of inflation and the strong German balance-of-payments on current account. But a tendency was attributed to

the DM to overshoot its "equilibrium" exchange rate--its justifiable degree of appreciation against other European currencies--and to overshoot against them as a consequence of its tendency to overshoot against the dollar. It must have seemed especially troubling to Europeans intent on fostering European integration that intra-European exchange rates were buffeted about because of alleged disequilibrium dynamics between the DM and a non-European currency.

We do not attempt to judge whether the DM has been truly "overvalued." The important point is the perception by many Europeans that intra-European exchange rates were being jerked about, excessively and irrationally, as a by-product of what appeared to them as a "dollar problem." The Germans are said to have felt themselves victimized by the inflationary policies of the United States, which lay at the root of the dollar's weakness on the foreign exchange markets. As one commentator put it:

"The result was a deterioration of German-American relations as the Germans came to see themselves as victims of American economic irresponsibility. Because the U.S. could not keep its own economic house in order, German goods were being priced out of world markets by comparison with French goods, Italian goods etc. The DM's refuge currency status put extreme pressure on the German authorities to contain the rise of the DM by inflating their German economy either directly or indirectly via increased support for the dollar. The Germans were able to avoid this inflationary outcome by backing the EMS." 4/

Through the intervention arrangements of the EMS, the DM, it was believed, could be temporarily stabilized against other major European currencies. If it appreciated against the dollar, it would pull the others up along with it. The extensive trade and financial flows between Germany and the other major EC countries would not then be unduly disrupted. The entire EMS, as a bloc, would move in common against the dollar, once its currencies had exhausted the small scope for independent movement they enjoyed by virtue of their bands vis-a-vis each other.

A further refinement of this argument held that, not only would intra-European rates be stabilized, but the bloc as a whole would be more stable against the dollar than would the DM on its own. The weak currencies in the EMS would serve as an anchor, holding down the DM. The EMS anchor would be much "heavier" than the old snake, because it now included the FF and L; if the pound sterling also joined the parity grid, the anchor would gain additional weight.

The EMS would apparently serve to anchor the DM in two ways. First, the EMS would serve to arrest the appreciation of the DM relative to other European currencies caused by the shift out of dollars into DM. Second, it would serve to limit the appreciation of the DM itself relative to the dollar.

The behavior of this anchor is more complex and uncertain than the simple metaphor implies. Assume the DM commences to appreciate against the dollar. Assume that, absent the EMS, it would also tend to appreciate against the FF, while the FF/\$ rate remained relatively stable. Though the German government might perceive the DM to be "overvalued" against the FF, speculators

would not, according to the standard argument, counteract this overvaluation by moving funds from DM into FF. Under the EMS, on the other hand, the DM and the FF would rise together against the dollar, since, if private speculators would not keep them moving together, compulsory governmental intervention would. Then, the argument concludes, the DM would not rise relative to the FF, and neither would rise as much against the dollar as would the DM by itself.

Why does that conclusion follow? The intervention within the EMS necessary to maintain intra-European rates of exchange within their prescribed bands tends, ultimately, to accelerate German monetary growth, and to moderate monetary growth in the other EMS countries. It is the altering of those relative rates of monetary expansion, by comparison with some given American rate, that would tend to brake the appreciation of the DM, relative to both the dollar and the other EMS currencies, and stimulate the appreciation of the other currencies vis-a-vis the dollar. 5/

If those long run tendencies come into play quickly enough, the EMS would indeed anchor the DM against the dollar. But those tendencies need not govern the short-run dynamics of exchange rate behavior. Indeed, the notion that the DM's upward movement is somehow cut loose from the "fundamentals" that should determine exchange rates implies that, at least in the short run, an incipient change in the basic trend of those fundamentals need have little impact on the DM's alleged overvaluation. Moreover, as noted earlier, the monetary impact of intervention can be "sterilized" in the short run. Thus, the EMS could easily, instead of anchoring the DM, induce an

equivalent "overvaluation" of other EMS currencies against the dollar. Of course, if the change in fundamentals dictate a rise in the DM relative to both the dollar and the other EMS currencies, market forces will continue to operate to push the DM and the other EMS currencies apart. As the DM pulls up those other currencies, the market could simply fail to move funds from them back into the dollar, as would be necessary to "anchor" the DM. With no immediate restraint on the DM's rise, the other currencies could be subjected to very severe tension within the EMS. Heavy intervention, coupled with increases in domestic interest rates, would be necessary for them to keep pace with the DM against the dollar. That strain could easily sour intra-EMS relations, and lead to EMS parity realignments that would be blamed on forces external to the EMS, namely, the weakness of the dollar.

In principle, the same dynamics govern the behavior of the EMS against every outside currency. But its relationship to the dollar is the most important. Typically a significant share of the international reserves of European countries is invested in dollar assets, so they stand to suffer capital losses from dollar depreciation. Extensive trade and capital flows link the EMS economies with the United States. In addition, many of their economic transactions with the rest of the world are denominated in dollars. Many countries around the world peg their currencies to the dollar, so the movement of the dollar is crucial for European transactions with those countries. And many commodities, including oil, are priced in dollars. Thus, for a country like France, the FF/DM exchange rate may be paramount, but the FF/\$ rate retains considerable importance.

For these reasons, quite aside from the merits of the anchor argument, members of the EMS will attach considerable importance to the joint behavior of their currencies against the dollar. It is widely believed that a stable dollar is virtually a prerequisite for a well-functioning European Monetary System. As noted above, a rapidly depreciating dollar can generate severe strains within the EMS, such that the European currencies could not be held within their bands without some of their governments resorting to intolerable monetary policies. They would soon be forced to realign EMS parities. Indeed, a popular interpretation of the first realignment of EMS parities finds its proximate cause precisely in the precipitous plunge of the dollar against the DM. 6/The readiness of the Germans to revalue the DM within the EMS (and they sought an even larger revaluation than they attained) strongly suggests that they were in fact not willing to permit the EMS to operate as an anchor on the DM. They proved unwilling to countenance the monetary expansion that would have followed from the intervention necessary to keep the whole EMS bloc moving in step with the DM against the dollar. As argued above, it is precisely an acceleration in German monetary expansion that would have eventually served to brake the rise of the DM.

Europe can exercise considerable control over its monetary aggregates--and, in the long run, its rates of inflation--by permitting a fairly free float of its currency bloc against the dollar. If, on the other hand, it tries to "manage" that float through considerable dollar intervention, it will sacrifice some control over its monetary aggregates, and its rates of inflation will

be significantly influenced by U.S. inflation.

Whichever objective Europe chooses--or whatever middle route between managing the EMS-dollar relationship and monetary independence it tries to pursue--as long as its major currencies are locked together, it will need to settle on a common policy toward the dollar.

This common policy need not be consciously defined and pursued by all members. It could be implemented by only one member, if all other members ignore their respective exchange rates against the outside currency, and concentrate solely on stabilizing their exchange rates within the bloc. Then the bloc as a whole would have a perfectly consistent common policy toward the outside currency.

That kind of common policy--"common" by default--seems natural to a bloc in which one country is clearly predominant, in economic and financial strength. Though some see the DM as the natural "hegemonial" currency within the EMS, its predominance is not so stark that German policy can automatically define a common EMS policy toward the dollar. Other members retain the right to intervene in dollars, and to participate in the management of the EMS-dollar relationship. It is a potentially serious flaw of the EMS that no clear guidelines on such a common policy have yet been established. The Brussels Resolution of the European Council simply notes that "the durability of the EMS and its international implications require coordination of exchange rate policies vis-a-vis third countries and, as far as possible, a concertation with the monetary authorities of those countries. 7/

This flaw need not be fatal, since a workable common policy could emerge from ad hoc consultations and coordination among the monetary authorities of the EMS governments. But it raises the specter of a continual conflict of interest among the members. EMS members want stable exchange rates among themselves, but are aware that their common exchange rate vis-a-vis the dollar may not develop to their common satisfaction. EMS members are subjected only to a loose requirement that they coordinate dollar intervention. They could well disagree on the direction in which to "manage" their joint exchange rate against the dollar.

Early in the life of the EMS, the German Bundesbank was selling dollars to strengthen the DM against the dollar. The Belgian monetary authorities reportedly complained that the Bundesbank's dollar sales were forcing the BF to the bottom of its band against the DM. Belgium protested against this policy in the course of consultations triggered by the BF crossing its "threshold of divergence" against the ECU. Ironically, it appears that the divergence indicator was used by the government of the divergent currency to try to fix the blame for its weakness on the policies of other governments. Nonetheless, the Belgians were forced to raise their interest rates sharply to try to keep the BF within its bands. Some interpreted this episode as "a clear signal that (the Bundesbank's) priorities for managing the exchange rate of the D-Mark remain firmly geared to holding down German inflation rather than maintaining stability in the EMS." 8/

Ultimately, the weaker currencies would always be forced to follow the lead of the stronger in setting policy toward a currency

outside the bloc. If two currencies within the bloc diverge in their relationship to the outside currency, they will be driven to their bilateral limits against each other. That strain within the EMS would touch off intra-EMS intervention which could exhaust the reserves of the weaker currency. If, moreover, the monetary authorities of the stronger currency "sterilized" the impact of such intervention on its monetary aggregates, it would be in a strong position to conduct a kind of "exchange-rate warfare," forcing the weaker EMS partner to follow its lead in managing the EMS-dollar relationship. That kind of conflict could well undermine the willingness to proceed toward greater European monetary integration. It is the appreciation of this problem that lies behind the widely held opinion that a stable dollar is essential for the success of the EMS.

A pure joint float (or very lightly managed float) of the EMS bloc vis-a-vis the dollar would secure for Europe all the monetary independence that is possible in a world of free capital flows. But European opinion shows no willingness to adopt that position. From its persistent anxiety over the course of the dollar, one is forced, despite much of the rhetoric surrounding the EMS, to draw the conclusion that Europe does not seriously seek monetary independence from the United States. Europe would prefer, in fact, the very opposite, namely a return to much greater fixity for dollar exchange rates. On the other hand, the confidence of many European officials in U.S. monetary policies, and economic policies in general, has been so eroded over the past decade that they draw back from outright advocacy of a full return to fixed exchange rates with formal intervention obligations vis-a-vis the dollar.

The monetary dilemma facing Europe is most acutely felt by Germany. The German initiative in launching the EMS should be read not primarily as a device to brake somewhat the DM's "excessive" appreciation. Its foremost purpose is to help stabilize prices in the rest of Europe through the anti-inflationary policies other countries must pursue in order to align their currencies successfully with the DM. But the simultaneous unwillingness to cast free from the dollar--to intervene little, if at all, in dollars--engenders a degree of schizophrenia in attitudes and policy. German officials tend to react strongly when the dollar falls against the DM, and have, at times, been willing to join in considerable intervention to arrest a sharp decline. As the dollar then recovers--as it did after the "dollar-defense" package of November 1, 1978--German import prices begin to rise, and the Bundesbank fears the expansionary impact of intervention on its money supply will cause it to exceed its monetary targets. Then German policy swings in the other direction--toward monetary tightening, the selling rather than the buying of dollars, with a manifest eagerness to attain the price dampening effects of an appreciating DM.

As long as the DM is chronically stronger than the other EMS currencies against the dollar, the monetary authorities of those other currencies are then forced into undesired intervention and monetary tightening, and inevitably into periodic realignments. This tension can be relieved only if the dollar is stabilized against the DM as a consequence of U.S. domestic policies that restrain American inflation. Were that to be done, the strains that would continue to arise within the EMS would be clearly attributable to the divergent developments of

the European economies. It is assumed that, if U.S. and German inflation converged at a low level, the alleged tendency of the \$/DM to "overshoot" its equilibrium relationship would disappear, and the remaining adjustments between European economies required to stabilize the EMS would be much more manageable.

Stabilizing the dollar technically through intervention can only be a temporary expedient, unless accompanied by a sustained reduction in the growth of U.S. monetary aggregates sufficient to bring U.S. inflation down to German levels, (or more rapid growth in Germany's money supply to bring her inflation up to U.S. levels). In the wake of the "dollar-defense" measures of November 1, 1978, the combination of intervention and monetary tightening in the United States was designed to finally bring the dollar "under control." In the glow of the immediate success of those measures, some assumed a foundation had finally been laid--in terms of a "real" American commitment to reduce inflation--on which the \$/DM rate could be stabilized, through more or less formal arrangements, without Germany having to import unacceptably high levels of U.S. inflation. That view was reflected by the Chairman of the Monetary Committee of the EEC: "the smooth start of the EMS has been helped by the relative stability of the dollar. This reflects largely the new and effective concern of the U.S. authorities concerning the dollar. It has been manifest in monetary policies since November 1 of last year...In this framework, I am wondering whether in the future one should not try to formalize somewhat the effort on both sides of the ocean to continue this effort at greater stability." 9/

That hope was soon dashed by renewed rapid growth of the U.S. money supply, an acceleration of inflation, and another slide of the dollar against the DM, through the summer and early fall of 1979. It was revived again on October 6, 1979 with the announcement of a basic change in the operating technique of U.S. monetary policy-- a shift from targeting a short term interest rate to more direct control of the monetary base, and, through the base, of the money supply. In announcing that change, the Chairman of the Federal Reserve emphasized "that the fundamental solution to the instability in the foreign exchange markets does not lie in intervention and that the kind of actions we take here are ultimately more important."

Most European officials would want the United States to exploit this change in technique to bring about a sharp tightening of monetary policy--to whatever degree be required to stabilize the dollar. But many Americans are troubled by the short run impact of such monetary tightening on U.S. output and employment, and give a much lower priority to stabilizing the foreign exchange value of the dollar. At the time of this writing, the resolution of this debate within the U.S. is far from complete. Its ultimate resolution will largely determine the course of U.S.-European monetary relations, and significantly affect the future direction of European monetary integration.

CHAPTER IV FOOTNOTES

1/ "Because the sharp decline of the dollar in 1977-78 wreaked havoc in European financial markets, the principal attraction of the EMS for most members is that it would help shield them from similar instabilities." Cohen, op. cit. "Finally, the EMS is seen as an instrument to insulate the European economies from the instabilities of the dollar." Paul de Grauwe and Theo Peeters, "The EMS, Europe and the Dollar," The Banker, (April 1979).

2/ "The main lesson from the experience of flexible exchange rates is that its main impact is on the permitted rate of inflation. Freed from the constraints of fixed exchange rates, the U.K. was able to pursue an independent monetary policy. It used its freedom to generate rapid money supply growth and rapid inflation." Alan Budd and Terry Burns, "Should We Join the European Monetary System?" Economic Outlook, (London Business School), October 1978.

3/ See, for example, Alexandre Lamfalussy, "The Failure of Global Flexibility?" in EMS: The Emerging European Monetary System.

4/ Melvyn B. Krauss, "Is West Germany Now the European Monetary Leader?", Wall Street Journal, August 9, 1979.

5/ For recent evidence on this monetary determination of exchange rates, see Michael W. Keran, "Money and Exchange Rates: 1974-79," Federal Reserve Bank of San Francisco Economic Review, (Spring 1979).

6/ "Yet another rise in American interest rates had failed to stem the drain to the D-mark from the dollar....So the D-mark had to be upvalued against the weaker members of 'supersnake', rubbing home the lesson that EMS is highly dependent on its dollar policy." The Economist, September 29, 1979, page 77.

7/ Resolution of the European Council of the 5th of December, 1978, on the establishment of the European Monetary System (EMS) and related matters.

8/ David Marsh, "Europe's Monetary Link Showing Strain," The Financial Times, June 6, 1979.

9/ Jacques van Ypersele de Strihou, op. cit. There remarks were made in the spring of 1979, and referred to U.S. policy in the few months after November 1, 1978.