PRINCETON STUDIES IN INTERNATIONAL FINANCE NO. 38

Organization and Administration of a Monetary Union

Polly Reynolds Allen

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I. INTRODUCTION

In 1970, the European Community announced its plans for forming an "economic and monetary union" in the coming decade. The blueprint for this plan, the Werner Report (European Communities, 1970), dealt explicitly only with the first stages of monetary union and remained deliberately vague about the final form of the Community's economic and monetary union. At the time of the Werner Report, exchange rates among the members of the Community had remained fairly stable for a number of years, and their economies appeared to be moving more closely together. Ten years did not seem to the authors of the plan to be an unreasonable time horizon.

Today the prospects for European economic and monetary union look far less hopeful. A recent Commission Study Group considers "that the efforts undertaken since 1969 add up to failure. Europe is no nearer to economic and monetary union than it was five years ago; in fact if there has been any movement it has been backward" (European Communities, 1975a). In large part, this situation is due to economic disturbances that have come from outside the Community—large speculative capital flows resulting from uncertainty about the long-overvalued dollar, the breakdown of the Bretton Woods international monetary system, and the large increase in the price of oil. These events affected the countries of the Community in different ways, making it painfully clear that the harmonious movements of their economies had depended upon stable economic conditions. Another source of problems has been the wide variety of understandings, and in many cases lack of understanding, of what is entailed in forming an economic and monetary union.

Some of these disagreements stem from differences in motivation for pursuing economic and monetary union. At one extreme are those who envision a total European union, encompassing political as well as economic and monetary integration; this is the ideal of many who work within the Commission. In that context, monetary union is but one step

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toward much more comprehensive unification and, as such, has occasionally been viewed as a means of forcing other forms of integration. In contrast have been the motivations of the French, who pushed for the early formation of a monetary union as a means of forming a common Community position in international monetary negotiations, as a balance particularly against the strength of the American views. At the same time, the French place a high value on national autonomy in most economic and political matters; their vision of monetary union is quite different from those favoring a total European union. Other countries, such as Germany, have placed more emphasis on the nonmonetary economic aspects of union, stressing the impossibility of coordinating monetary measures in advance of cooperation on and integration of other economic policies.

Beyond the differences in motivation, however, there appears also to have been a lack of understanding in the Community of the implications of taking certain steps toward economic and monetary union. Insufficient attention was paid to the interrelationships of various aspects of economic and monetary policies, wherein advances made in one area affect, and are affected by, conditions in other areas.[1] The European Study Group, mentioned above, attributes the failure of the Community to progress toward economic and monetary union to three main factors: (1) adverse external developments, (2) lack of political will on the part of the governments, and (3) insufficient understanding of what is involved in forming such a union (European Communities, 1975a).

There are a number of reasons why the European Community may still wish to pursue an economic and monetary union despite these setbacks. The recent disruptions to the European economies, while making coordination or integration more difficult, are viewed by some as emphasizing the importance of coordinated European action. The economic and political spillovers among the European countries, and the perceived impossibility for any one country effectively to meet external challenges in the face of fragmented and conflicting national policies, are taken as evidence that European union in some form is essential. The Commission has recently reaffirmed that economic and monetary union is its primary objective (European Communities, 1975c, p. 7).

[1] Balassa (1975) discusses, for instance, the inconsistency of medium-term objectives of the European governments and the Community, when these objectives are evaluated in the context of a single macro model.

It is to increase the understanding of the relationships in an economic and monetary union, between monetary and other economic policies and between monetary policy and market integration, that this study is written. Since the initial steps toward economic and monetary union in Europe were primarily concerned with the monetary aspects of the union, and since much of the European debate has centered on the possibility of moving toward a monetary union before establishing economic union in other areas, the focus of this paper is on *monetary union.* I examine some of the problems of administering monetary policy for a monetary union of several countries and some of the necessary conditions for such a policy to be effective. I consider the implications of the formation of a monetary union for the other economic policies of governments and the likely impacts of these other policies on the effectiveness of union monetary policy. While the study is directed toward considerations of monetary union, it also asks which other economic policies must be unified in conjunction with the monetary union.

The analysis begins with the assumption that a monetary union is to be formed and then asks what characteristics, beyond the minimal requisites, will be necessary to make the monetary union work. Immediately one sees the need to define the minimal requisites of a monetary union and to agree on what is meant by saying that a monetary union "works." The failure to come to agreement on these very basic issues has been one of the problems for the proposed European economic and monetary union.

Before I give a basic definition of a monetary union, however, let me point out that a number of areas relevant to an understanding of the implications of a monetary union are not considered in this paper. First, the study bears only peripherally on the crucial question of whether a group of countries, and the European Community specifically, *should* form a monetary union; it starts with the initial assumption that a monetary union is to be formed. I do, however, draw conclusions that certain decisions concerning institutions, market integration, and unification of other economic policies are necessary for a successful monetary union, and these conclusions may in turn influence the initial assumptions about the desirability of monetary union. There is a substantial body of literature on optimum currency areas, and on the European case in particular, that is specifically concerned with the question of whether countries should form a monetary union.[2] In exam-

[2] The early contributions to the literature on optimum currency areas are in Mundell (1961) and McKinnon (1963). The considerable work since that time,

ining the conditions necessary to conduct an effective union monetary policy, this study considers the implications of market integration in facilitating adjustment to *monetary* disturbances. The adjustment process in response to nonmonetary disturbances, such as different rates of growth or inflation within the union, is not discussed here; balance-of-payments adjustment to nonmonetary disturbances has been treated extensively in the literature on optimum currency areas and existing monetary unions. Finally, the study concentrates on the requirements for an existing, although newly established, monetary union. While it is important to understand these requirements in order to know how best to move toward a monetary union, the study does not specifically examine, or make recommendations for, the transition process toward a monetary union.

Definition of Monetary Union and of Economic Policies

It is useful to draw a distinction between the characteristics that are essential for any monetary union and the additional characteristics that are necessary for the continued and successful existence of the monetary union. The minimal definition is by far the easier.

First, in any monetary union either there must be a single currency or, if there are several currencies, these currencies must be fully convertible, one into the other, at immutably fixed exchange rates, creating effectively a single currency.

Second, as the immutability of fixed exchange rates depends upon mutually consistent monetary policies within the union, there must be an arrangement whereby monetary policy for the union, including control of high-powered money and regulations affecting the commercial banks' ability to create money, is determined at the union level, leaving no national autonomy in monetary policy.

Finally, since there can be only one rate of exchange between an external currency and the union currency, there must be a single external exchange-rate policy. Toward this end, the national authorities

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either dealing directly with optimum currency areas or having important implications for the subject, is surveyed in some detail by Tower and Willett (1976). Discussions of monetary union with particular reference to the European Community are in Corden (1972), European Communities (1970), Hirsch (1972), Ingram (1973), and Magnifico (1973). Some of the transitional questions raised by moving toward a monetary union in the Community are treated in European Communities (1973a, 1973b, and 1973c), Magnifico and Williamson (1972), and Mundell (1973). "Economic" aspects of the union are the focus of Denton (1974).

must relinquish individual control over their international reserves and invest such control in a union authority.

These three requirements—effectively a single currency, a single union monetary policy, and union control of international reserves and the external exchange rate—are regarded here as minimally essential for any arrangement to qualify as a monetary union. It would probably not be difficult to find a consensus on the necessity of these conditions for a monetary union, though certainly not on their sufficiency.[3] The additional characteristics that are necessary for the success of the monetary union are more subjective and controversial, varying with the underlying political and economic conditions for a particular union and with the ultimate goals of the countries forming the union. Those additional conditions for a successful monetary union are the main subject of this study.

Since the arrangements whereby governments conduct economic policies, and the kinds of policies they pursue, vary widely from country to country, it is important also to be clear about our definitions of these policies. This study discusses three kinds of governmental economic policies—monetary, fiscal, and credit. For our purposes, they are defined as follows:

1. Monetary policy includes (a) the standard instruments of internal monetary policy—open-market operations in securities by the monetary authority, the setting of reserve requirements for commercial banks, and discount policies (i.e., the conditions under which the monetary authority will extend loans to the commercial banks)—and (b) the basic instruments of external monetary policy—control of the external exchange rate through intervention in the foreign-exchange market and the setting of any external barriers to the flow of financial capital.

2. Fiscal policy includes government purchases of goods and services, taxation and transfers to the public, and the issuance of securities to finance any resulting budget deficits.

[3] This definition is essentially in accord with the definitions of the Werner Report (European Communities, 1970) and of other economists who have analyzed European monetary union, such as Corden (1972), Ingram (1973), and an EC Study Group (European Communities, 1973a). Some definitions, such as the Werner Report's and Corden's, go further, however, and include complete lack of capital controls within the union as a prerequisite for monetary union. Here, rather than assuming the necessity of intra-union capital mobility and making it part of the definition of monetary union, in Chapter IV I examine to what extent and why capital mobility is important for the conduct of union monetary policy.

3. Credit policy includes measures, taken either by governments or the monetary authority, to channel investment toward particular sectors and to direct the flow of saving through certain financial markets. (Direct quantitative and qualitative controls over commercial banks' balance sheets are defined here as credit policy, rather than monetary policy, because of their effects on the flow of funds. Because such direct controls over commercial banks affect the banks' ability to create money, however, this aspect of credit policy must be included with the mandatory centralization of monetary powers in a monetary union.)

Goals of Economic and Monetary Union

One of the major difficulties in the Community's unification effort has been the failure to agree on its ultimate goals in forming an economic and monetary union. As a result, it has found itself with a variety of definitions of what such a union should be. That issue, of course, cannot be resolved in this study but must be worked out within the Community itself.

For our purposes, it is useful to compare some of the possible intentions in setting up an economic and monetary union and to consider how they reflect upon our suggested characteristics for a "successful" monetary union. The essential question is to what degree and in which areas the member nations wish to turn over national sovereignty to union authority. While it is expected that every nation will act in its own national interest, that interest may best be served for some purposes by exchanging a national identity for a union identity. In other situations, a nation may wish to retain its identification with its own national interests but may recognize at the same time that the national interest can best be served through cooperation and compromise to form a single union policy.

In economists' terms, the choice between these two postures is the choice between maximizing a *union* welfare function or some weighted average of separate *national* welfare functions. If the member countries are sufficiently integrated to have adopted a union welfare function for some purpose, the question of whether to centralize the relevant policy becomes largely a question of efficiency. On the other hand, if countries are maximizing their individual national welfare functions, the desirability of centralizing a policy depends, for each nation, upon the gains from cooperation compared with the costs of compromise.

Since the European Community seems far closer to the latter model, recognizing the need to cooperate but reluctant to relinquish national autonomy, this study is based on the assumption that countries have

determined to have a monetary union but are reluctant to give up any more national autonomy than is necessary. The arguments on centralizing fiscal and credit policies are couched in terms of how the relative gains and costs are influenced by the existence of monetary union. At times, I will ask whether national interests are best served through coordination of national policies for a particular function or by relinquishing national autonomy in the interests of a single union policy.

II. THE STRUCTURE OF THE UNION MONETARY AUTHORITY

A group of nations could conceivably form a monetary union by (1) agreeing to fix their exchange rates permanently and to guarantee convertibility of the currencies; (2) instructing the central bankers of the respective countries to meet and negotiate on the monetary policies to be followed by each, with the understanding that they must abide by the group decision; and (3) having a single agent for external exchange-rate policy who would control the common pool of reserves for that purpose. This minimal arrangement might function as a monetary union, but it is doubtful if it would work for long.

A workable monetary union requires that the member nations be committed to its permanence and that they perceive the net benefits of remaining in the union to exceed the potential gains from secession. Furthermore, the financial institutions, firms, and households of the union must generally believe in its permanence. If they do not have such confidence, they will continue to presume that dealings with other countries of the union involve exchange-rate risk and risk of discriminatory capital controls. This would reduce their willingness to hold the other national currencies, to incur debts or acquire assets with other countries' financial institutions, or to make long-term contracts across national borders of the union. The resulting separation of national securities markets would in all likelihood constitute a failure to achieve the union's goals and would certainly make more difficult the implementation of a union monetary policy, as will be discussed in Chapter IV. Furthermore, if the union were suspected to be temporary, there would be reluctance to grant the union monetary authority significant powers that it might need to operate effectively.

The question addressed in this chapter is then: What provisions for the organization of the union monetary authority, beyond the minimal requirements, will improve the gains and reduce the costs of the union, promote its stability, and create confidence in its endurance?

National Banks and National Currencies

The minimal requirements of a fixed exchange rate and a single monetary policy permit the countries of the monetary union to retain their national currencies and to have separate national banks within

the structure of the union monetary authority. The national banks would presumably be the remnants of the pre-union central banks, operating in the monetary union under reduced authority and independence. While national banks and national currencies are consistent with our definition of monetary union, there is some question whether the continued existence of these national institutions would contribute to a workable monetary union.

It has been noted that strong commitments to the union by the member countries are required for the success of the union, perhaps even for its continued existence. One measure of the strength of these commitments is the difficulty nations would have extricating themselves from the monetary union. By this criterion, a single central bank and a sole union currency would indicate strong national commitments to the union, for there would be formidable practical barriers to a nation's withdrawing from the monetary union if it no longer had either a national bank or a currency it could claim as its own. The desire of governments to retain these national institutions within the structure of the monetary union might stem from questionable commitments to that union. And even if governments' commitments were in fact incontrovertible, the citizens of the union might view the retention of national banks and currencies as an indication that the union would not be permanent. Such perceptions would make full participation in the union highly unlikely and could create political pressures on a national government to withdraw, particularly if monetary factors were blamed for a bad national economic situation. These kinds of doubts about the permanence of the monetary union would probably be assuaged by the creation of a single union central bank and by the replacement of the national currencies with a single union currency. Such a course of action may not, however, be the best way to ensure member nations' commitments to the union and the credibility of those commitments.

1. Arguments concerning national banks. There are potential advantages in retaining the national banks in the organization of a union monetary authority. It may be less costly to use the established bureaucracies of the national central banks than to set up a wholly new union central bank. In a large diverse economy, decentralization of ongoing monetary operations may be more efficient than a single central bank. As a practical matter, the central banks would probably be more willing to cooperate in the formation of the monetary union if they were going to lose only their independence and not their very existence. Moreover, public confidence in the monetary system may require a

continuity of institutions that could be achieved only by incorporating the national central banks into the new union monetary authority.

At the same time, there are bound to be difficulties in requiring central banks, which have always either formulated their own monetary policies or answered to their national governments, to accept the rulings of the union monetary authority in all significant decisions. This problem is aggravated when the monetary practices of the member nations have traditionally differed, as has happened in the European Community in its efforts to unify banking regulations. Monetary structures and policies in the Community differ widely—in the number and size of the banks controlled by the central bank, in the emphasis on written regulations or informal agreements to enforce monetary policy, and in the use of market pressures or quantitative and qualitative controls to effect monetary policies, to name a few. Furthermore, the jurisdiction of each national bank coincides with the jurisdiction of the national government. The possibility that a national government could claim independence for its national bank, making the national bank no longer subject to the union monetary authority, might present a temptation to a government needing another tool to manage its economy.

The relationship between the union monetary authority and the national banks can, however, be designed to minimize this pressure for national monetary independence while still retaining the national banks in the system. Basically, the role of the national banks must be limited to carrying out the instructions of the union monetary authority in all major decisions, with very little latitude for autonomous action. To the extent that national monetary interests may differ, these can be accommodated by negotiation at the central level among the national representations within the union monetary authority. But the result of such bargaining must be a *single* union monetary policy.

Moreover, whenever possible monetary policy should be implemented, as well as planned, by the central monetary authority. Open-market operations, for instance, should probably be conducted at the central level. Instead of buying and selling securities for their own account at the instructions of the union monetary authority, the national banks should deposit the relevant securities in a central open-market fund. The central authority would buy and sell securities for the open-market fund, crediting and debiting the respective accounts of the national banks in accordance with centrally determined allocations. Under such an arrangement, a national bank would not have the means to defy the open-market policy of the union monetary authority if it so desired. Similarly, the national banks should deposit

their international reserves in a common reserve-pool fund so that intervention in the foreign-exchange markets also could be accomplished at the central level.

Within narrow and specific limits, the national banks may be given some responsibilities for making their own determinations, particularly where judgments must be based on knowledge of local conditions. But the scope for independent action by the national banks should be sufficiently narrow that their autonomous decisions would not significantly affect the union money supply. Furthermore, even such limited autonomy of the national banks should be understood to be not a right but a privilege, to be assigned or taken away at the discretion of the central monetary authority.

A single, centrally administered union monetary policy does not necessarily mean the uniform application of monetary tools in all countries. While the formulation of union monetary policy would be much easier if there were sufficient economic integration and similarity among the national economies to justify a uniform, union-wide policy, the isolation and peculiar characteristics of a particular national or regional economy may warrant a specially designed use of monetary tools for that area. Decisions on nationally or regionally differentiated policies must be made by the union monetary authority, however, and not by the national banks.

The Federal Reserve System of the United States, with its twelve Federal Reserve banks, is sometimes viewed as an appropriate model for a system of national banks in a monetary union. There are insights to be gained from such a comparison, from both the likely similarities and the probable contrasts.

First, the political problem of potential monetary independence does not exist in the American system. Historically, no Federal Reserve bank ever controlled an independent currency area; the Reserve banks have always been part of the same nation, with a strong federal government. Moreover, the coincidence of monetary and political jurisdictions does not occur even with respect to the various states, because the boundaries of the Federal Reserve districts cut across, rather than follow, state boundaries.

Second, although it is true that the Federal Reserve System was initially established with the idea of decentralizing power, little remains of this notion. Decentralization of authority was an important and controversial issue when the Federal Reserve was formed in 1914. But as the system has evolved, very little independence is left to the Reserve banks. The major tool of American monetary policy is open-

market operations, which are conducted centrally by the Open Market Committee. Other tools, such as reserve requirements and interest-rate ceilings, are centrally determined (Young, 1973).

The setting of each district's discount rate is still nominally the prerogative of the respective Reserve bank. The discount rates are subject to review and determination by the Federal Reserve Board, however, and the Reserve banks must propose a discount rate to the Board every fourteen days or more often, as required. Any independence of the Reserve banks in this area is more symbolic than real, and the Board assures that discount rates remain closely aligned. Moreover, the existence of a nationwide money market makes it virtually impossible for a Reserve bank to alter the relative money supply of its district, even if it were to maintain a different discount rate. For instance, commercial banks of such a district, facing relatively higher borrowing costs at their Reserve bank than those paid by banks in other districts, would simply borrow from other districts through the federal-funds market. For these reasons, discount rates of the Reserve banks almost never vary by more than one-half of 1 per cent between districts, and a differential seldom lasts as long as two weeks.

If a monetary union is formed in the European Community, there are strong arguments for establishing a Community monetary authority that incorporates the existing central banks of the member countries as national banks that would have no independent authority. The size and diversity of the Community's economy, the long-established history of these institutions, and the strong national identities of the member countries all argue in this direction. But these same factors also increase the pressures for national monetary independence in the countries of the Community, emphasizing the importance of structuring a Community monetary authority so that all effective monetary power is centralized, *de facto* as well as *de jure*.

2. *Arguments concerning national currencies.* The other area of national monetary identity is the national currency. On this question, the important condition for a monetary union is that the currencies function as a single currency whether or not separate currencies are retained. The several currencies would in fact function as one if there were confidence in the pledge of permanently fixed exchange rates and of full costless convertibility.

The arguments for a single currency are similar to those for a single central bank. The survival of the monetary union may be viewed as more credible if the member countries have committed themselves to

a single currency. There is no possibility of an exchange-rate change when a single currency serves as the legal tender throughout the union. Moreover, the commitments of the member countries to the monetary union actually may be stronger if the national currencies are eliminated. The Werner Report acknowledges these factors when it states that "considerations of a psychological and political nature militate in favour of the adoption of a sole currency, which would confirm the irreversibility of the venture" (European Communities, 1970, p. 10).

In spite of these arguments for a single union currency, there may be justification for retaining the national currencies. In order to serve its purposes, money requires public confidence. In some cases, habits and national identities may be sufficiently strong that people would be unwilling suddenly to use a different currency. For example, a report by a Community study group suggests that the maintenance of national currencies meets a "deeply rooted European emotional need" and that the national currencies will be likely to remain in circulation long after completion of monetary union (European Communities, 1973a, p. 20). The premature substitution of a union currency for the national currencies could produce widespread confusion and suspicion, causing the entire financial system of the union to suffer a serious loss of efficiency.

Given such attachments to existing national currencies, the problem for the monetary union is how to achieve what is effectively a single currency while maintaining the symbolic forms of the national currencies. A union currency should without doubt be introduced, even though the national currencies are retained; minimally, it would serve as the reference numeraire for the national currencies and could circulate whenever there was a demand for it. All newly printed bills of the national currencies should perhaps include a statement of their worth in terms of the union currency and of the other national currencies, emphasizing for the bearer their interchangeability. And, finally, the union monetary authority must have the right to issue any of the national currencies as well as the union currency. It must guarantee a perfectly elastic supply of each currency in exchange for any one of the others, thus assuring that any preference of either the commercial banks or the nonbank public as to the national-currency composition of money holdings will be met at no cost.

Assuming that these measures are taken by the union monetary authority, the attitudes of the commercial banks and other financial institutions are then the key to creating a *de facto* single currency. In industrialized economies, most money and other financial assets

exist only as entries on the books of commercial banks and other financial institutions. If it were a matter of indifference to these institutions whether their assets and liabilities were denominated in a union currency or the national currencies, they would willingly denominate all such accounts in the union currency, while permitting withdrawals and deposits in any member currency with no additional transactions costs because of choice of currency. As long as goods or services continued to be priced in national currencies, buyers could write checks on their accounts in whatever currency the seller requested. There would be no hesitation, because of currency considerations, to conduct economic transactions in other member countries, for the selection of the currency would truly be immaterial. In such a situation, the existence of separate national currencies would have purely symbolic value; for any tangible economic considerations, the union would effectively have a single currency. National currencies might or might not gradually disappear, but it would make no difference one way or the other.

The essential element of such a system is a true and convincing commitment to the monetary union by the governments of the member nations. Only if there is no doubt about the permanence of either the exchange rates or the costless convertibility of the currencies will financial institutions be willing to treat the denominations of their balance sheets as a matter of indifference. This unconcern about the denominations of balance sheets applies, of course, only to the currencies of the member nations and to the union currency. Currencies of the outside world would present various degrees of exchange-rate and other risks, depending on the situation, and would not be perfect substitutes for union currencies.

Proposals have been made in the European Community for the introduction of a European currency as a means of transition to the monetary union (Mundell, 1973; Magnifico and Williamson, 1972). This is an interesting suggestion meriting consideration. It raises questions of how well such a union currency would be accepted during the transitional period. These are qualitatively different considerations from those faced by a monetary union, however. The problem of the monetary union is how to make the union currency and the various national currencies perfect substitutes, in order to create confidence in the union. Yet acceptance of the currencies as perfect substitutes itself depends upon complete confidence in the union. Neither complete confidence nor perfect substitutability, then, is a possibility for the transition period.

Balance-of-Payments Settlement within the Union

If the national banks are retained in the structure of the union monetary authority, there will have to be an agreed process of intercountry settlement among them. There are efficiency arguments for accomplishing these settlements through some centralized clearing process. The question remains open as to what form of payment would be acceptable among the national banks.[1]

The assets of the national banks include reserve certificates (claims on the union's reserve-pool fund, received in exchange for the required deposits of international reserves), open-market certificates (claims on the open-market fund, received in exchange for securities deposited there at the instructions of the union monetary authority), and other securities not used in open-market operations. Because the responsibility for determining the money supply must lie with the union monetary authority, the national banks can have no independent freedom to alter the size of their asset holdings.

A national bank will automatically lose assets whenever there is a net balance-of-payments deficit for the commercial banks under its jurisdiction. To the extent that the deficit results from exchange with the outside world, assets are transferred to the reserve-pool fund; deficits with other countries of the union necessitate a transfer of assets to the national banks of the surplus countries. It is essential that the means of settlement be the same for external and intra-union deficits. Otherwise, there would be an incentive to distort the direction of trade and capital flows.[2] The term "intercountry settlement" will refer to payments both between a national bank and the reserve-pool fund and among the national banks.

A logical means of intercountry settlement would be the transfer of reserve certificates. This would be the equivalent of each country financing its balance-of-payments deficits with international reserves. Automatic balance-of-payments adjustment would come about in the

[1] This is not a question of conserving international reserves. It is assumed that the international reserves of the member countries are placed in the common reserve-pool fund. Presumably, reserve settlement within the union would take the form of transferring deposits at the reserve-pool fund rather than actual reserves. This would create the lesser demand for external reserves in a monetary union that was discussed by Salant (Krause and Salant, 1973).

[2] This was a problem with the European Payments Union. Because the means of settlement within the EPU were different from the requirements for settling with outside countries, there were incentives for discrimination (see Triffin, 1957, pp. 203–204).

same manner as under a gold standard. The problem with such a system is that, while the money supply of the deficit country automatically declines by the amount of the deficit, as does the stock of reserve certificates held by its national bank, there is no assurance under fractional reserve banking (where a national bank's liabilities are only partially backed by reserve certificates) that a country's deficit will be eliminated before the national bank depletes its stock of reserve certificates.

In a similar situation, the independent central bank of a country on the gold standard has two options that are not available to the national bank of a monetary union. The independent central bank can reinforce the automatic adjustments in the money supply, thereby assuring that its reserves will not be depleted before the deficit is eliminated, or it can alter the domestic currency price of gold, eliminating the deficit through currency depreciation.

As neither of these options is permissible for the national banks, both being incompatible with the definition and operation of a monetary union, the union monetary authority must take measures to assure adequate means of payment among the national banks and thus eliminate the possibility of a balance-of-payments crisis within the union. In one way or another, when one of the national banks runs low on reserve certificates, the union monetary authority must effect a redistribution of reserve certificates among the national banks. There are basically three ways of accomplishing such a redistribution.

The first possibility is for the union monetary authority to take the same reinforcing measures of the automatic adjustment process as independent central banks on the gold standard might take. The monetary authority would adopt relatively restrictive monetary measures in the deficit countries, as compared with the surplus countries, accomplishing for the national banks what they do not have the power to do for themselves. The objection to such a solution is that balance-of-payments adjustment probably involves real economic costs, which will be increased by forcing a more rapid adjustment. This is particularly true if securities markets are not well integrated, in which case most of the adjustment must come by means of changes in the current account. The member countries have already lost a degree of freedom by renouncing exchange-rate adjustments when they joined the monetary union. Under such a system of accelerated intra-union balance-of-payments adjustment, they are given no additional latitude in compensation for that loss.

The second possibility is for the union monetary authority to make provisions for the national bank of the deficit country to borrow from the other national banks or from the reserve-pool fund. As long as such loans must be repaid, however, borrowing provisions are simply a means of postponing the reinforced adjustment process of the first option, with its inherent economic costs. Moreover, the necessity of repaying the loans requires not only that the deficit be eliminated, but also that the country run a future surplus in order to earn the means of repayment.

The third possibility is for the union monetary authority simply to order a rearrangement of assets among the national banks whenever one of the banks runs low on reserve certificates. The national bank of the deficit country then receives additional reserve certificates in exchange for either open-market certificates or other approved securities. This option does not eliminate automatic balance-of-payments adjustment, for the money supply of the deficit country still declines by the amount of the balance-of-payments deficit. It does remove the need to reinforce this automatic adjustment process solely for purposes of maintaining intercountry settlements in reserve certificates.

Countries with independent central banks must earn or borrow the international reserves they need to settle their accounts. Such a requirement serves as a brake on excessive monetary expansion at fixed exchange rates in the deficit countries. Such discipline is unnecessary within a monetary union, however, because the control of the union money supply is lodged with the union monetary authority rather than with the national banks.

This type of provision exists for the Federal Reserve banks of the United States. The Reserve banks settle among themselves in "gold certificates," the equivalent of international reserves. Whenever a Reserve bank runs short of "gold certificates," a transfer is made from some other Reserve bank in exchange for government securities. Although such transfers are seldom necessary, the provision for them removes even the possibility of a balance-of-payments crisis among the Reserve banks (see McCalmont, 1960, 1963).[3]

[3] There is no reason why the union monetary authority could not simply rule that the national banks could use *either* deposits at the reserve-pool fund *or* other approved assets as a means of intercountry settlement, rather than requiring settlement in deposits at the reserve-pool fund initially and then redistributing these deposits whenever necessary. The former is simply a more direct means of accomplishing the same end result. I describe the system of reserve settlement and

To my knowledge, the European Community has at no time publicly discussed the possibility of completely eliminating the requirement that each member country must earn or borrow the international reserves it needs for intra-Community settlements. Granted, its proposals for short-term monetary support arrangements have applied only to the near future (European Communities, 1973c). During the transition to monetary union, when national monetary authorities still retain the power of money creation, arrangements for only limited monetary support arrangements are appropriate. Opportunities for unlimited redistribution of the Community's reserves would not be feasible until the monetary authority was centralized. At such time as the European Community establishes a monetary union, however, a requirement for intra-union settlement in international reserves (or in the equivalent deposits with the Community's reserve pool) should be accompanied by a provision for redistribution of these reserves within the Community whenever necessary to avoid balance-of-payments problems for one of the national banks.

There is a possibility that differential economic pressures on the member countries of a union will tend to put some countries continually in balance-of-payments deficit and others continually in surplus. The automatic adjustment of the balance of payments will work to eliminate deficits but will never induce a surplus for the chronic-deficit country. In such a situation, the chronic-deficit country over time will receive real net transfers from other members of the union. These net transfers could, of course, be eliminated if the union monetary authority were to require that each country either earn or borrow (with an obligation to repay) the reserve certificates needed to finance its deficit. It is my firm belief, however, that the resulting economic costs of reinforced adjustment to payments imbalances and the possibility of a balance-of-payments crisis within the union would seriously weaken the stability of such a monetary union. If countries wish to form a monetary union, they must be willing to endure the possibility of long-run net transfers within the union as a result of some countries' tendencies to fall into payments deficits.

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subsequent redistribution, first, because that is the practice of the Federal Reserve System and, second, because such an arrangement may be more appealing to central bankers who remain concerned about the composition of their balance sheets.

III. DEFINITION OF MARKET INTEGRATION AND INTERNAL MONETARY POLICY

My minimal definition of a monetary union does not include any requirements concerning the integration of markets. Integration of markets, particularly securities markets, is an important factor, however, in determining the timing and distribution of the impacts of union monetary policy. Pressures also go in the other direction: the existence of a monetary union influences the integration of markets. My concern with market integration focuses on its various relationships to the administration of monetary policy.[1] This chapter first defines the concept of market integration and then describes the framework of the monetary institutions and the instruments of internal monetary policy that are assumed in the subsequent discussion.

Definition of Market Integration

The integration of markets has two aspects, both of which are relevant to the administration of union monetary policy. The first is the *degree* of integration, and the second is the *domain* of integration.[2] I shall discuss these two aspects of integration with reference to securities markets, but the concepts apply equally, with only slight changes in terminology, to markets for goods, services, or currencies.

The degree of integration between two or more securities markets reflects the degree of substitutability between those securities. Alternatively, the degree of integration may be said to describe how close are the relevant markets to functioning as a single market, where the sale of one of the securities and the simultaneous purchase of the other in

[1] Another aspect of market integration that is important for a monetary union is its role in helping the union economy adjust to nonmonetary disturbances. Ingram (1959, 1962, and 1973) and Kenen (forthcoming) have emphasized the role of securities-market integration in financing the payments imbalances that result from exogenous disturbances between countries. Mundell (1961) has stressed the importance of factor mobility as a requirement for an optimum currency area; expressed another way, factor mobility implies integration of factor markets. Corden (1972) evaluates, among other things, the importance of the integration of labor markets, in terms of both labor mobility and trade-union integration.

[2] My thoughts on the definition of market integration owe much to conversations with my colleague, Peter B. Kenen. A discussion of a slightly different concept of market integration appears in the first part of Kenen (forthcoming).

no way affects their relative price.[3] Perfect integration of two securities markets does not require that *all* actual and potential owners regard the securities as perfect substitutes, only a number who have sufficient holdings of, or demands for, the relevant securities to fulfill all desired exchanges at the existing relative price.

This identification of the degree of integration of two markets with the degree of substitutability between the items exchanged on those markets does not necessarily imply that in the case of perfect integration there will be a single nominal price or that the relative price must equal unity. For any of a number of reasons, there may be a fixed differential between the prices of two securities exchanged effectively on a single market. Such a price differential could result, for example, from a tax on the interest on foreign securities held by domestic residents, from perceptions of a fixed risk differential between the two securities, or from a fixed difference in transactions costs. If, given such a price differential, asset holders regard the two securities as perfect substitutes, the purchase of one security and the sale of the other in like amounts will have no effect on the prices, for asset holders will gladly substitute one security for the other. Such markets are perfectly integrated in spite of the difference in price.

The integration of markets is sometimes linked with their efficiency. The "efficiency" of securities markets can be said to describe how well these markets operate to achieve an "optimal" allocation of resources —that is, an allocation that maximizes the current real value of the economy's expected current and future output. Since a price differential produced solely by the existence of a border tax implies nonoptimal allocation of resources, it follows that perfect integration of markets is no guarantee of efficiency. Nor, on the other hand, is a perfect degree of integration a requirement for efficiency. For instance, the substitutability between two securities perceived to have somewhat different characteristics may be quite low, implying only a small degree of integration between the two markets. If the perceived differences between the two securities reflect actual differences in characteristics that determine the ability to command real resources, such as risk or maturity date, the low degree of integration does not necessarily sug-

[3] This is essentially in agreement with Scitovsky's definition of asset-market integration: "The unresponsiveness of the asset's price to selling in one and buying in another region is the best index of the degree to which the market is integrated" (Scitovsky, 1969, p. 90). It is also consistent with the definition, common in industrial organization, of a market as constituting those items where the substitutability is extremely high.

gest inefficiency in these securities markets. But if the perceived differences are simply the result of national bias or lack of information, a higher degree of integration would probably improve the efficiency of these markets. Even when the differences between securities are quite real, there may be potential for improving the integration of these markets and their efficiency by the development of financial intermediaries.

Questions of risk may also limit the integration of securities markets without impairing their efficiency. Considerations of risk suggest that two securities identical in all respects except for an element of equal but uncorrelated risk may both be held in a single portfolio, even though the return may be higher on one than the other. This possibility stems from the potential for reducing the overall risk of the portfolio through diversification. The element of uncorrelated risk in such a case prevents the two securities from being perfect substitutes. The sale of one such security and the purchase of the other may induce an adjustment in their prices, as asset holders strive to achieve the desired composition of their portfolios. Such markets are not perfectly integrated, although they may be operating efficiently.[4]

While the degree of integration of securities markets depends upon the possibility of exchange among these securities, it is not necessary that the possibility of exchange exist between each and every combination of securities. Two markets can be integrated indirectly, if each of the two securities is regarded as a substitute for a third security (or for one of two other securities that are themselves substitutable and exchangeable). The markets for mortgages in two countries could, for example, be highly integrated even though no resident of either country would consider holding a mortgage on property in the other country. If mortgages in each country were considered to be close substitutes for some other security that was widely traded between the two countries, then the two mortgage markets themselves would be

[4] Logue *et al.* (1974) argue for covariation of interest rates as a measure of integration. As I have defined market integration, strong covariation of interest rates in the presence of a one-sided disturbance would indeed imply integration of those markets. If, however, the covariation was a response to a common disturbance, such as a generalized increase in inflationary expectations, it would not imply integration of those markets. Admittedly, Logue *et al.* define integration somewhat differently, stressing market efficiency in the face of risk. I do agree with them, however, that another frequently used empirical measure of market integration—the degree to which interest rates on different securities are the same—is also imperfect, for perfectly integrated markets can be consistent with a price differential.

integrated by way of integration with the market for the intermediate security. Such indirect substitutability would be sufficient to keep the national mortgage rates in line, even when demand for mortgages rose in one country and fell in the other.

The second aspect of integration of two or more securities markets is the domain, which refers to the geographic area over which the securities are marketed and to the total volume of these securities held in portfolios. Determining the appropriate geographic area for the domain of integration is necessarily somewhat arbitrary. Some minimum number and proportion of the relevant securities must be held within a region if it is to be included in the domain. In some cases, the domain of integration will coincide with the domain of each market, such as in the case of integration of two markets for different types of securities, both of which are held over the same geographic area. In other cases, there may be little actual overlap of the market domains, so that the domain of integration effectively makes up the sum of the separate market domains; an example of this would be the integration of two national government securities markets where each government's security is held primarily by its own residents. When there is a high degree of integration between two markets with largely separate domains, the *potential* domain of either market will coincide with the domain of integration. Reverting to the previous example, although asset holders may not actually hold the security of the other country, the high degree of integration indicates that they would be willing to do so if the supply of that security increased at the expense of the supply of their own security.

In considering the relationship between market integration and the administration of union monetary policy, it is useful to compare the jurisdiction of the union monetary authority, which by definition must cover the entire monetary union and no more, with the domain of integration for various markets.[5] It will be argued in the following chapter that a high degree of securities-market integration over a domain covering the entire monetary union and including a large stock of securities is a desirable situation for the conduct of union monetary policy. The implications of a high degree of securities-market integration over a domain that extends *beyond* the jurisdiction of the union monetary authority, as when union financial markets are integrated with those of the outside world, will be examined in Chapter V.

[5] Cooper (1968) has discussed the relationship of the "domain" of a business enterprise, which is in many ways comparable to our domain of integration, and the "jurisdiction" of a government.

Assumptions about Financial Structures and Monetary Policy

The monetary authority of the union is presumed to consist of a national bank for each country, all totally under the direction and control of the union monetary authority. The terms "national bank" and "union monetary authority" will be used interchangeably.

The term "commercial bank" refers to financial institutions other than the national banks over which the union monetary authority has some control or responsibility. Other financial institutions are referred to as "financial intermediaries." The commercial banks are assumed to hold deposits at their respective national banks. The liabilities of the national banks make up the money base, serving both as currency in circulation and as a means of payment among the commercial banks. Demand liabilities of the commercial banks and currency in circulation constitute the union money supply. There is assumed to be effectively a single union currency, as described in Chapter II. The term "securities" refers to all financial assets other than liabilities of the national banks and demand liabilities of the commercial banks.

Monetary policy, unless otherwise specified, refers to internal monetary policy. In discussing the relationship between market integration and internal monetary policy, only the "standard" instruments of monetary policy are considered—open-market operations, discount policies, and reserve requirements for the commercial banks. For purposes here, it is unnecessary to specify which of these instruments is being used, for each results in a change in the money supply that is exactly offset by an opposite change in the holdings of securities by the nonbanks. This inverse relationship between money and securities held by nonbanks is obvious in the case of open-market operations. Through open-market purchases, the monetary authority directly increases the money supply in exchange for securities. To the extent that the nonbank public deposits the increment of new money in the commercial banks, open-market purchases also increase the domestic reserves of the commercial banks. An increase in commercial banks' holdings of domestic reserves, an easing of domestic reserve requirements, or a more liberal discount policy each induce the commercial banks to acquire additional assets from the nonbank public, paying for them through increased demand liabilities.[6] The money supply thus rises and nonbank holdings

[6] Direct bank loans to the public are liabilities of the public, which can be viewed as negative holdings of securities by banks. The relationship between the money supply and public holdings of securities holds, therefore, whether banks extend direct loans or purchase outstanding assets.

of securities decline. Whichever of these monetary instruments is chosen by the monetary authority, the increase in the money supply is always accompanied by a purchase of some security from the nonbank public by either the monetary authority or the commercial banks. Such purchases will be referred to simply as "bank purchases of securities."

This relationship between the money supply and nonbank holdings of securities stems from our assumption that only the union monetary authority and the commercial banks can create money and that neither purchases goods or services or levies taxes. The separation of the responsibilities of the monetary authority from those of the government is particularly important in analyzing a monetary union, where monetary and fiscal responsibilities are likely to be lodged at different levels.

Although one can think of examples where an increase in the money supply is not accompanied by a decline in nonbanks' securities, in such cases monetary policy is always combined with either a government budget deficit or a current-account surplus in the balance of payments. Any fiscal deficit necessitates the issue of government securities; if the new securities are purchased directly by the union monetary authority, the *combination* of fiscal and monetary policy results in an increase in the money supply with no decline in securities holdings of nonbanks. Similarly, if one is willing to think of foreign exchange as a security, a current-account surplus results in the receipt of such securities (foreign exchange) by the nonbank public. These new securities may be purchased by the union monetary authority as part of its external monetary policy of fixing the exchange rate; a *combination* of a current-account surplus and external monetary policy also results in an increase in the money supply with no decline in holdings of securities by nonbanks. But monetary policy alone will always involve an equivalent offset in securities holdings of nonbanks, regardless of the choice of monetary tool.

The *objectives* of the monetary authority refer to the variables it wants ultimately to influence through monetary policy, such as the level of income, the rate of growth of output, the rate of price inflation, etc. The relationship between such objectives and monetary policy is, however, somewhat indirect. The monetary authority is thus assumed to aim its policies toward the achievements of certain *targets* that are more directly under its control, such as the level or rate of growth of the money supply, interest-rate levels, or some combination of these. Any such target implies a particular level of the money supply at a point in time. Thus, it is possible to couch the discussion in terms of the monetary authority's impact on the union money supply without neces-

sarily implying that the level of the money supply is the monetary authority's explicit target. We shall be concerned with the actual and target *distribution,* as well as overall level, of the union's money supply. The monetary authority accomplishes changes in its targets through changes in the monetary *instruments.*

External monetary policy also affects the union's money supply whenever the monetary authority conducts open-market operations in the foreign-exchange market. The next chapter ignores external monetary policy and external repercussions on the union. The absence of external influences implicitly suggests either a closed economy for the union or a situation of flexible external exchange rates and very little or no integration of securities markets between the union and the outside world. Chapter V then explicitly examines some of the external considerations that must be taken into account if these assumptions are relaxed.

IV. MARKET INTEGRATION WITHIN THE UNION: ITS SIGNIFICANCE FOR INTERNAL MONETARY POLICY

This chapter focuses on the question of how the effects of a change in monetary policy in one country of the union will be diffused to the other countries, depending upon the integration of various markets. The analysis is made from two perspectives—a positive analysis that describes *how* such a regionally differentiated monetary policy will spread throughout the union and a normative analysis that considers which markets *should* be integrated in order to promote the goals of union monetary policy and the stability of the monetary union. The integration of securities markets is shown to be the means of rapidly diffusing the impacts of monetary policy and of assuring that a change in monetary policy affects the entire union, regardless of the country in which the policy change is enacted.[1]

Underlying this analysis of the diffusion of monetary impacts across the monetary union is a fairly general and well-accepted view of the process by which monetary policy acts upon the real variables of an economy (consumption, production, investment, employment, or some combination of these). Initially, an expansionary monetary policy induces "bank purchases of securities"—purchases by either the national banks or the commercial banks, depending upon the monetary instrument selected by the union monetary authority. The increased bank demand for certain securities lowers the rate of interest paid on those securities. Whether the interest-rate decline is limited primarily to securities purchased by the banks or a wide spectrum of interest rates is affected depends upon the degree of substitutability among various securities. To the extent that demands for goods and services are responsive to changes in the affected interest rates, the decline in those interest rates will create excess demands in goods and services markets.[2] These excess demands put upward pressure on the prices of

[1] I have examined the role of securities-market integration in the diffusion of monetary policy in a monetary union in the context of a formal two-country model in Allen (1975). Compared with the verbal, more intuitive analysis of this study, the formal model has the advantage of showing explicitly what is happening and of yielding more specific results, but it is limited by the need to impose simplifying assumptions and by its lack of generality to a variety of situations.

[2] Although the wealth of nonbank asset holders is not directly increased by an expansionary monetary policy, which entails simply an exchange of money for

goods and services, which in turn stimulates greater outputs. Demands for factor services also rise, as producers try to meet the increased demands for produced outputs, resulting in higher factor returns or increased employment of factors. Without specifying the relative adjustments of the prices and outputs of goods and services, we refer to their combined changes as changes in product values.[3]

Interest rates are viewed as adjusting rapidly to clear securities markets. How far interest rates will fall in response to a given increase in the money supply depends upon a number of factors. First, the degree of integration of securities markets determines whether there will be a substantial decline primarily in the interest rates on those securities purchased by the banks, as in the case of poorly integrated securities markets, or a smaller decline in a wider spectrum of interest rates, as in the case of better-integrated securities markets. Second, the greater the interest elasticity of the demand for money, the smaller the decline in interest rates, other things being equal. Third, to the extent that the demand for money depends upon product values (transactions demand), the decline in interest rates is inversely related to the induced increase in product values. Thus, if product values respond to changes in interest rates very little or only with long lags, a considerable decline in interest rates will be required to equate the demand for money with its increased supply. It is assumed that a country's demands for goods and services are influenced by the interest rates paid only on those assets held by residents of the country.

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securities, there may be a capital-gains effect. The value of a long-term security with a fixed rate of interest rises when current interest rates decline. An expansionary monetary policy that lowers interest rates creates a capital gain on outstanding long-term securities and thus increases asset holders' wealth. Assuming that demands for at least some goods and services are positively correlated with the real value of wealth, an expansionary monetary policy will increase demands for goods and services through the wealth effect as well as the interest-rate effect. With respect to changes in monetary policy, these wealth and interest-rate effects on demands for goods and services are always complementary; the wealth effects will therefore not be discussed further.

[3] There is an implicit assumption in this analysis of constant, or exogenous, inflationary expectations; no account is taken of the possibility that an expansionary monetary policy may raise inflationary expectations and thus raise, rather than lower, the nominal interest rate. The analysis is also stationary, in that the possible growth of productive factors is not considered. While incorporation of these factors would make a richer analysis, it would not basically alter my conclusions about the significance of market integration for monetary policy. If the analysis is applied to a growing economy, statements of no change should be interpreted as no deviation from the long-run trend.

The timing and composition of the increase in product values is complex and varies widely among economies. The induced increase in product values depends upon both the interest elasticities of the demands for goods and services and the timing of these interest-rate responses; because purchases of goods and services are often planned and contracted for far in advance, there may be considerable lags in the responses to interest-rate changes. Furthermore, there is no supposition that the markets for goods and services always clear. Particularly if institutional rigidities restrict price adjustments, leaving goods and services markets to be cleared by changes in outputs, these markets will probably clear only with considerable lags, and may remain continually in disequilibrium.

The concern of this chapter is the role of market integration in the distribution of expansionary *pressures* on demands for goods and services as a result of an easing of monetary policy in one country of the union. The expansionary pressures come about initially through the decline in interest rates. Subsequently, as expansionary pressures take effect in certain goods and services markets in the form of higher prices and outputs, increased demand pressures are felt in other goods and services markets as a result of the income multiplier and the substitutability among goods or services. The argument is symmetrical when referring to a contractionary monetary policy, which reduces demand pressures. This does not imply that the form the demand pressures take will necessarily be symmetrical; for instance, prices may respond more to an expansionary monetary policy, and outputs more to a contractionary policy.

In saying that an expansionary monetary policy occurs in a *single* country of the union, which I shall call the target country, I mean that there is either (1) an open-market purchase of securities in a market *located* in the target country or (2) an easing of discount policy or reserve requirements for the commercial banks of the target country.[4] My concern is to what extent and by what means the resulting increment of new money is diffused to other countries of the union and to

[4] In the case of an open-market purchase, it makes no difference for the impact on the economy whether the purchase is credited to the open-market account of the target country's national bank or of some other country's national bank. Such considerations affect the direction of intercountry settlements among the national banks, but as long as the monetary authority provides for the redistribution of reserve certificates as needed, the intercountry settlements are solely a matter of balance sheets and accounting within the union monetary authority (see Allen, 1975).

what extent the decline in interest rates directly affects demands for goods and services in other countries of the union.

Integration of Securities Markets

The first consideration in analyzing the impact of an expansionary monetary policy in the target country is the market domain for those securities purchased by the banks. The domain is determined by the residencies of the owners of *all* securities eligible to be sold on that market, whether or not they are actually involved in a particular exchange.

In the case of an open-market purchase, a policy change *in the target country* means that the monetary authority purchases the securities on a market located in that country; this implies that the securities are purchased either from residents of the country or from brokers located in the target country, the latter allowing for the possibility that the actual sellers of the securities may be residents of other countries. The market for these securities may be located in other countries also. To the extent that the ultimate sellers of the securities reside outside the target country or that the market is also located in other countries, the market domain of the bank-purchased security extends beyond the target country.

In the case of an easing of discount policy or reserve requirements, the policy change induces the commercial banks of the target country to purchase additional securities or to extend loans. The commercial banks may purchase securities on markets located anywhere in the monetary union, from asset holders resident in any country of the union, or they may extend loans to residents of any country of the union. In the case of bank loans, the domain of the relevant market includes all actual or potential borrowers whose liabilities would be sufficiently substitutable in the loan portfolios of the commercial banks as to constitute a single market.

The market domain of the bank-purchased securities would therefore be limited to the target country itself only if the securities were held solely by residents of the target country. If the securities are held by residents outside the target country, the market domain may extend as far as the entire monetary union. In some cases, it could even exclude the target country, for example, if the commercial banks were to purchase a security that was not held by nonbank residents of the target country.

The market domain of the bank-purchased securities thus deter-

mines, in the first place, the distribution of the new money and the range of expansionary pressures resulting from the decline in the interest rate on those securities. Even if the banks were somehow to restrict their own purchases to exchanges with residents of the target country, private arbitrage would succeed in rearranging the money and securities so as to maintain a single interest rate across the entire domain of the securities market; arbitrageurs would buy the securities from residents of other countries and sell them to residents of the target country.[5] Considering only exchanges of the bank-purchased securities, the new money will be distributed in proportion to the holdings of those securities.

It is not necessary, however, that the banks purchase a security that itself has a wide domain in order to produce such a dispersion of the money supply and such widespread expansionary pressures. The same results will obtain if (1) there is a high *degree* of integration between the markets for the bank-purchased security and other securities and (2) there is a wide *domain* of integration for these combined markets. A high degree of integration, it will be remembered, implies high substitutability between securities and closely aligned interest rates. If, for instance, the banks were to purchase a security that was held only by the residents of the target country but that was highly substitutable for securities held by residents of other countries, the downward pressure on the interest rate of the bank-purchased security would induce residents of the target country to purchase the substitute securities; in this manner, the new money would be diffused and interest rates would decline in other countries. The higher the degree of integration, the more similar will be the decline in the interest rates on the integrated securities and the more closely will the distribution of new money approximate the distribution of substitutable securities across the domain of integration. Conversely, if there is a smaller degree of integration between securities markets, the new money will tend to remain within the market domain of the bank-purchased securities, and the decline in interest rates will be concentrated more on those same securities.

[5] Restrictions on private arbitrage would be inconsistent with our definition of a single security, for any barriers that prohibit exchange effectively create two separate markets, which may be integrated to a greater or lesser degree. A border tax or transactions cost between countries that set up a fixed-interest-rate differential would not, however, split the market; in such a case, private arbitrage would maintain the fixed differential in the interest rates paid on the security in the two countries instead of a single interest rate on the security.

The diffusion of the new money and the range of the expansionary pressures depend then on the domain of the security purchased by the banks, on the degree of integration between markets for the bank-purchased security and other securities, and on the domain of integration for these combined markets. If the domain of integration covers the entire union and the degree of integration is high, the change in the money supply and the resulting expansionary pressures on goods and services markets will affect the entire union, even if the banks purchase securities only from residents of the target country.

To the extent that particular interest rates influence demands for certain goods and services more strongly than for others, the domain of integration of securities markets determines not only in which countries there will be expansionary pressures resulting from the decline in interest rates, but also in which particular markets for goods and services. For example, the monetary expansion could affect a group of integrated securities markets whose domain extended across the union and yet was rather small, including only a few securities. The smallness of the domain of integration would mean that a given increase in the money supply would have a particularly strong effect on the interest rates affected. If the relevant securities were issued or held by only a few sectors of the economy, the initial expansionary pressures would be felt primarily in those sectors. If the domain of integration of securities markets were larger, the initial expansionary pressures of the economy of each country would probably be more widespread. Of course, even with a large domain and a high degree of integration of securities markets, the change in monetary policy will tend to place disproportionate pressures on those goods and services sectors that are relatively more responsive to interest-rate changes.

While a sufficiently high *degree* and large *domain* of securities-market integration guarantees that an expansionary monetary policy in one country will produce a decline in a wide spectrum of interest rates in every country of the union, it should be remembered that the change in product values will not necessarily be the same across the union. First, a large domain of integration does not necessarily mean an identical domain in every country, nor are securities held primarily in one country necessarily substitutable for tradeable securities to the same degree as are securities primarily held in other countries. Countries with a larger share of the market domain for the bank-purchased security, or with both a larger share in the domain of integration and a higher degree of integration between their own securities markets and that of the bank-purchased security, will experience stronger expan-

sionary pressures. Moreover, demands for goods and services may be more interest-elastic in some countries than in others, creating greater expansionary pressures from the same decline in interest rates. And, given expansionary pressure, the speed with which product values respond, and the form in which they do so, may vary from country to country.

But in spite of these possible differences between countries, strong integration of securities markets does promote a fairly even distribution of the new money and fairly equal interest-rate pressures across the union, regardless of the integration of goods and services markets. By contrast, lack of integration of securities markets will tend to isolate initially the increase in the money supply and the expansionary pressures, keeping them within the market domain of the bank-purchased security.

Integration of Goods and Services Markets

Whenever product values rise more in some markets than in others or marginal propensities to consume out of income vary for different goods and services, there is a potential for the impacts of an expansionary monetary policy to be disseminated to other countries through the current account. We have seen that an expansionary monetary policy may induce uneven increases in product values for any of a number of reasons, even when there is strong integration of securities markets and a general decline in interest rates union-wide. In any such situation, the increment of new money may be redistributed through trade in goods and services.

Our interest here, however, is confined to the uneven expansionary pressures that result from an easing of monetary policy in the target country when there is *poor integration* of *securities markets* between countries and when the domain of the bank-purchased securities is limited to the target country. The lack of international integration of securities markets in such a case implies that interest rates fall primarily in the target country and that the increment of new money is held primarily by residents of the target country. In the extreme case of no international trade in securities, the direct expansionary pressures on goods and services markets that are generated by the interest-rate decline affect the demands only of residents of the target country.

The decline in interest rates in the target country is likely to increase demands by its residents for imports as well as for domestically produced goods and services, the extent of the increased demands for imports depending on the proportion of total expenditure directed

toward imports and on the interest elasticity of demands for imported goods and services. The increase in demands by residents of the target country for their own goods and services will in most cases exceed the increase in their demands for imported goods and services. This implies relatively greater expansionary pressure on goods and services produced in the target country and a relative rise in product values in the target country.

To the extent that there is integration between markets for goods and services produced in different countries, the relative rise in prices in the target country will further shift demands toward the export goods of other countries.[6] The higher the degree and the larger the domain of integration of goods and services markets between countries, the greater will be these increased demands for other countries' goods and services. Moreover, the relative rise in incomes in the target country will also increase demands for other countries' goods and services proportional to the target country's marginal propensities to consume various imports out of increased income. This spread of demands as a result both of substitutability in response to relative price changes and of relative increases in the target country's incomes will occur only with a lag, however, if goods and services markets clear slowly.

The net effect of these increased demands for other countries' products is a current-account deficit for the target country, which implies a corresponding redistribution of wealth from the target country to other countries of the union. The target country's current-account deficit can be financed either by borrowing from other countries or by spending money. The lack of integration of securities markets in this

[6] Markets for goods and services include markets not only for final but also for intermediate goods and services. For our purposes, markets for services of the factors of production can be treated in the same manner as markets for intermediate goods. There is thus no need to discuss labor markets separately from goods markets when analyzing the implications of market integration for the diffusion of union monetary policy.

Our definition of the degree of integration, however, is couched in terms of the degree of substitutability and is thus not appropriate for complementary and intermediate goods and services. When demands for two items are complementary, the degree of integration of the markets must in some way reflect the degree to which an increase in the demand for one item is matched by a proportional increase in demand for the other. Thus, the degree of integration between markets for complementary products is related to the similarities of their demand elasticities, particularly the relevant own and cross-price elasticities. The problem of dealing with complementarity in defining market integration applies equally to securities markets, but there are fewer examples of complementary securities than of complementary or intermediate goods and services.

case suggest difficulties in borrowing abroad and the likelihood of a flow of money from the target country that closely matches its current-account deficit.

This decline in money and wealth in the target country gradually reduces its demands for securities, causing some reversal in the earlier decline in its interest rates. Similarly, the corresponding increase in money and wealth in other countries raises their demands for securities and lowers their interest rates. The expansionary pressures are gradually shifted away from the product values of the target country to the product values of other countries, by means of the target country's current-account deficit. In response to the resulting shifts in demands, the target country's current-account deficit is gradually eliminated.

The initial decline in interest rates in the target country created expansionary pressures on the target country's demands for both tradeable and nontradeable goods and services produced in that country, but only for tradeable goods and services produced in other countries. However, as demands for goods and services gradually shift from the target country to countries with current-account surpluses, as a result of the redistribution of money and wealth, there is a reversal of these earlier increased demands for nontradeables in the target country and a rise in demands for nontradeables in other countries. While there are also shifts in the demands for tradeable goods and services, their direction will vary with the country's particular characteristics and the condition of the economy; the decline in the target country's demands for tradeables is replaced at least in some measure by the increased demands of other countries.

The speed of this reversal of relative demand pressures depends upon the size of the target country's current-account deficit. The deficit, in turn, depends upon the proportion of expenditure devoted to imported goods and services in the target country, upon the extent of integration of goods and services markets between countries, upon the relative marginal propensities to import, and upon the speed of adjustment of product values to excess demands in goods and services markets.

Comparison of Integration of Securities Markets and Goods and Services Markets

With strong integration of securities markets, an expansionary monetary policy in the target country has been shown to produce an immediate diffusion of new money across the union, a union-wide decline

in interest rates, and relatively even expansionary pressures on goods and services markets across the union. By contrast, when securities markets are not integrated between countries and the domain of the bank-purchased security is limited to the target country, the initial expansionary pressures are largely limited to the target country, where they create a trade deficit (and overall balance-of-payments deficit). Balance-of-payments adjustment will diffuse money to other countries, but only slowly. In such a case, relative product values increase temporarily in the target country, with a temporary overexpansion in some sectors, particularly in nontradeable goods and services.

The increment of new money will gradually be diffused to other countries of the union, with or without securities-market integration, as long as there is any trade in goods and services between countries and demands for imports are at all responsive to changes in interest rates, incomes, or relative prices. When money is diffused through the current-account balance instead of the capital account, there is a redistribution of wealth within the union as well. A diffusion of money through securities markets, on the other hand, simply involves a rearrangement of assets within existing portfolios, without affecting relative wealth holdings (except for capital gains). Although current-account imbalances can result from many kinds of asymmetries, it is in general true that the increment of new money created by an expansionary monetary policy in the target country will be diffused through a current-account deficit primarily when there is poor integration of securities markets between countries and when the domain of the bank-purchased security is limited primarily to the target country.

We can see, then, that the union monetary authority has very little control over the *ultimate* distribution of the increment of new money or of the resulting expansionary pressures. To the extent that securities markets are integrated or that there is a union-wide domain for the bank-purchased securities, the monetary authority loses even temporary control over the distribution of money and expansionary pressures. When securities markets are not integrated between countries, however, the domain of the bank-purchased securities determines the initial location of the new money and of the expansionary pressures and also the direction of wealth redistribution within the union. In such a case, the monetary authority can influence the initial distribution of money when it makes open-market purchases by purchasing securities with a particular limited domain. Even some of this control is lost, however, when it influences the money supply through changes in discount policy or reserve requirements, for the market domain of the

bank-purchased securities is then a decision variable of the commercial banks. A lack of integration of securities markets would suggest, however, a high probability that commercial banks would purchase securities or extend loans primarily within their own country, thus still allowing the monetary authority temporary control over the distribution of the new money.

While the monetary authority can control the distribution of a *given increment* of new money and of its expansionary influences only temporarily at best, when securities markets are poorly integrated there remains the possibility of increasing product values in the target country while reducing those in other countries for some extended time, through *continual* bank purchases and sales of securities. In order to effect such a relative increase in the target country's product values, the monetary authority could make continual bank purchases of securities with a domain of integration limited to the target country, offset by bank sales of securities with domains of integration limited to other countries. The continual decline in the stock of securities held in the target country would produce steadily declining interest rates in that country, while the continual increase of securities held in other countries would produce steadily rising interest rates in those countries. The target country would have an ongoing current-account deficit. The price of maintaining such a desired differential in product levels between countries of the union is, therefore, the continual redistribution of wealth from the target country to other countries as the target country pays for imported goods with money, and the ever-increasing interest-rate differential that is necessary to maintain the constant differential in product values. Assuming that the regulations of the union monetary authority provide for a redistribution of reserves and securities among national banks whenever necessary, there would be no intra-union balance-of-payments problems as a result of the ongoing balance-of-payments deficit of the target country. It is unlikely, however, that the continual redistribution of wealth and increasing interest-rate differentials would be tolerated indefinitely. Thus, the potential for using monetary policy to alter relative product values between countries for any extended time is severely limited, even when securities markets are not integrated.[7]

[7] If securities markets were well integrated, of course, such continual open-market purchases in the target country and open-market sales in other countries would simply produce a private capital outflow from the target country in response to the differential pressure on interest rates, financed by money, with virtually no impact on product values. We can conclude, therefore, that if securities markets

The important role of securities-market integration, compared with integration of goods and services markets, in diffusing the expansionary pressures of an easier monetary policy stems largely from the fact that a change in monetary policy always involves the purchase of securities rather than of goods and services. If the monetary authority were to purchase goods and services as an instrument of monetary policy, the initial distribution of money and of the accompanying expansionary pressures would obviously then depend primarily on the market domain of the goods and services purchased and on the integration of goods and services markets. Our definition of monetary policy, however, limits it to exchanges between money and securities, a limitation that is well based in both practice and theory. In virtually all countries, the monetary authority does not itself purchase goods and services, although it may work closely with, or even be controlled by, the fiscal authority and in that manner may finance the purchases of goods and services by the government. Theoretically, monetary policy defined in this manner is a purely *financial* transaction that does not directly change the wealth of nonbank asset holders; this is a reasonable and useful distinction to make between monetary and fiscal policy.

A Normative Evaluation of Securities-Market Integration for Purposes of Monetary Policy

The question remains, then, whether markets *should* be integrated, if a monetary authority is to carry out an effective union monetary policy. We have established that strong securities-market integration allows the monetary authority virtually no control over the distribution of the union money supply or of its expansionary impacts, while with poor securities-market integration the monetary authority can direct the initial impact of a monetary change somewhat toward the market domain of the bank-purchased securities. Regardless of the integration of securities markets, however, the ultimate distribution of a given union money supply is determined by the requirements of balance-of-payments equilibrium; the monetary authority has little long-run influence over the *relative* product values of the members of the union.

Whether the integration of securities markets is considered to contribute to the effectiveness of union monetary policy depends, of course, upon the objectives of the monetary authority. If they are

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are highly integrated, there will not even be a temporary impact on the distribution of money, on interest rates, or on product values, regardless of the size or duration of the open-market operations.

aggregate objectives, applied to the entire union, there is certainly a strong argument for securities-market integration. On the other hand, monetary objectives that differ from region to region within the union might suggest the desirability of poor securities-market integration, in order for the monetary authority to have temporary leverage over the regional impacts of monetary policy.

The lack of control over the distribution of the money supply or its impacts when securities markets are strongly integrated implies that the monetary authority has no choice in such a case but to follow an aggregate policy. This does not guarantee equal monetary pressures across the union, of course, for the possibility always remains that the monetary impacts may be disproportionate even with strong integration of securities markets. This could happen, for example, if demands for goods were far more responsive to changes in interest rates in one country than another. And with strong securities-market integration, the monetary authority would have no means of counteracting such unequal monetary influences. In this sense, the monetary authority has lost a degree of freedom as a result of securities-market integration.

Far more important, however, is the freedom it has gained by not *having* to concern itself with the regional impacts of monetary policy. If securities-market integration were poor, an aggregate expansionary monetary policy that had as its goal proportionate changes in product values across the union would necessitate expansionary measures in every country or region whose securities markets were not integrated with other union securities markets. The monetary authority would, for instance, have to make open-market purchases in the securities market of every country or region or changes in reserve requirements or discount policy across the union.

Equal changes in monetary instruments across the union would not necessarily be sufficient, however, to effect the same monetary change in each country, for differences in behavior and institutional structures between countries would create different degrees and speeds of monetary impacts from one country to another. With poor securities-market integration, the monetary authority would need to know a great deal about the strength and timing of the responses to monetary disturbances in *each* country or region. Given the general state of today's knowledge about the workings of monetary policy, this is an unrealistic demand to place upon a monetary authority.

When securities markets are well integrated, by contrast, behavioral and institutional differences between countries are not particularly

important to the outcome of monetary policy, for the substitutability among securities in large part cancels any differential responses. The commercial banks of one country might be more responsive to an easing of discount policy, thus being induced to purchase more securities than the commercial banks of other countries, but such differences in commercial-bank behavior would affect neither the distribution of new money nor the relative changes in interest rates, as long as securities markets were highly integrated. Without securities-market integration, however, such differences would imply relatively expansionary pressures in the country where the commercial banks were most responsive to discount policy.

There is probably a correlation between securities-market integration and behavioral and institutional similarities, with the causal factors going in both directions. Increased integration of securities markets definitionally implies some behavioral similarities with regard to substitutability between assets. Moreover, securities-market integration probably encourages the gradual development of further similarities as the national economies are continually faced with similar monetary influences. Conversely, the more alike the institutional structures and behavior patterns in the financial markets, the more probable it is that securities markets will be well integrated.

The banking and financial structures of the European Community differ widely at the present time. Comparing France and Germany, for instance, one finds in France a few large banks that are owned by the government and a tradition of policies that directly regulate the portfolios of these banks. In Germany, by contrast, there are hundreds of banks and the Deutsche Bundesbank avoids direct controls, favoring measures that influence markets through changes in supply or demand for assets. To take another example, Britain has long favored implicit "gentlemen's agreements" between the Bank of England and the commercial banks, whereas the Continental countries of the Community tend to favor more detailed, explicit written regulations.[8] The members of the European Community have come face to face with these differences in their attempts to coordinate banking regulations. Finding it impossible to agree on common regulations for all banks across the Community, they are now working toward the less ambitious objectives of coordinated licensing for banks and permission for commercial

[8] For detailed discussions of the differences in financial structures among countries of the European Community, see European Communities (1972) and Hodgman (1974).

banks of member countries to set up branches anywhere within the Community.[9] While such problems would undoubtedly be less severe if the Community had formed a monetary union, differences in bureaucratic structure and traditional attitudes do not change quickly or easily simply by virtue of having a single monetary authority. A European monetary union, if it is formed, will probably have to live with a wide variety of financial structures and behavior for a considerable time. Increased integration of European securities markets would, however, lessen the importance of these differences for the conduct of the Community monetary policy.

If the objectives of the monetary authority are to influence the aggregate product values of the union, there seems to be no doubt that such objectives will be enhanced by the integration of securities markets. What then of the loss of ability to wield regional influence? We have seen that monetary policy can create relative differences in nations' product values only if securities markets are poorly integrated and then, if there is a single change in monetary instruments, only temporarily, or, with ongoing changes in monetary instruments, at the cost of a continuing redistribution of wealth and increasing spreads among national interest rates. Such limited capabilities for regional influence seem a very small gain when matched against the requirement that the monetary authority always estimate the precise regional impacts of its policies.

But if the impacts of monetary policy will ultimately be diffused across the union, regardless of the integration of securities markets, what exactly are the costs to the union of living with poor securities-market integration and letting the money be distributed through the current account whenever monetary policy turns out to have an uneven impact?

There is first a matter of timing. The distribution of money through securities markets occurs rapidly, as asset holders rearrange their portfolios at a minimum of transactions costs. Even if transactions costs or the thinness of markets produce gradual rearrangements of portfolios, thus slowing the actual distribution of money, the pressures on interest rates are still immediately felt across the union. By contrast, the diffusion of money through the current account requires a relative expansion of product values in one country. We observe that, for many rea-

[9] See "Proposal for a Council Directive on the Coordination of Laws, Regulations and Administrative Provisions Governing the Commencement and Carrying On of the Business of Credit Institutions," *Official Journal of the European Communities*, No. C-12 (Jan. 17, 1975), p. 7.

sons, goods and services markets adjust to excess demands or supplies only with considerable lags. Once the induced changes in product values have actually occurred, then the size of the current account, through which money is diffused, depends upon the integration of goods and services markets and upon the relative marginal propensities to import. It is highly unlikely that money would be diffused through the current account as rapidly as through integrated securities markets.

Second, the objectives of monetary policy are assumed to include various dimensions of the union's product values. With securities-market integration, these goals are approached directly through interest-rate changes in each country. But with poor securities-market integration, the adjustments to an unevenly administered monetary policy through the current account necessitate a temporary overshooting of product values in those countries or regions where the monetary disturbance is the strongest. The goals of monetary policy are thus approached only *indirectly*. Such an overshooting involves additional adjustment costs. Resources are shifted into sectors where the higher demand is only temporary, particularly nontraded goods and services sectors. The costs of shifting resources temporarily, both in terms of lost output and human suffering, must be subtracted from the gains inherent in the objectives of monetary policy. Moreover, to the extent that prices of goods and services are more rigid downward than upward, a temporary expansion in certain sectors may produce first price inflation and subsequently unemployment, both of which can be assumed to detract from the monetary authority's objectives.

Third, a distribution of money through the current account necessarily implies a corresponding redistribution of wealth, a side effect of monetary policy that frequently is not perceived and may be undesirable. Monetary policy is itself a financial disturbance, directly affecting only the *composition* of wealth. While the union conceivably could wish to effect some redistribution of wealth among countries, wealth redistribution as a by-product of monetary policy cannot be regarded as an independent objective. Only coincidentally would the desired changes in product values and the desired changes in wealth distribution be in the particular combination that is inherent in an unevenly administered monetary policy. By contrast, when money is diffused through well-integrated securities markets, there is virtually no redistribution of wealth among countries but only a rearrangement of each country's portfolios. Monetary policy may, of course, affect the union's rate of saving, regardless of the integration of securities markets, thus influencing the union's acquisition of wealth.

For these reasons—the speed with which monetary policy is diffused, the costs of adjustment when product values temporarily overshoot their new equilibrium levels, and the redistribution of wealth inherent in current-account imbalances, the distributive consequences of monetary policy when there is poor securities-market integration are important. If the monetary authority has to worry about these, its reaction may well be to take a less aggressive monetary policy. To the extent that this occurs, the lack of integration of securities markets within the union will lead to a weaker union monetary policy.[10]

There is, moreover, a political consideration, affecting the stability of the union, that suggests the monetary authority should limit its objectives to changes in *aggregate* product values, pursued through integrated securities markets, so that it has no possibility of determining the relative regional impacts of its policy. If the monetary authority were held responsible for the *relative* product values among the member nations, and if regionally directed monetary policies were to produce ongoing current-account imbalances and transfers of wealth between countries, such factors would increase the probability that some country would decide the monetary union had more costs than gains. If, however, it were generally recognized that monetary policy had only broad, union-wide impact and that the monetary authority had no power to influence relative positions of nations, a nation would be less likely to view withdrawal from the monetary union as a potential solution to its problems. Securities-market integration further reduces the appeal of withdrawing from the monetary union in that it limits national monetary independence under flexible exchange rates as well.

The importance that a monetary union attaches to the possibility of regional monetary policy depends upon the original motive for the union. If the member nations have committed themselves to maximizing union, rather than national, welfare, the arguments for well-integrated securities markets clearly dominate. But even in a union where the member nations wish to keep as much national autonomy as possible, and where union monetary policy is a compromise of national goals, the arguments for integration of securities markets seem to outweigh those for regional monetary policy. The uncertainties of controlling regional, as well as aggregate, effects of union monetary policy, the costs of artificially isolating securities markets, and the political pressures on a monetary authority with regional responsibilities—all suggest that nations should not form a monetary union unless they are

[10] This point has been made by Kenen (forthcoming).

willing to accept a union-wide aggregate policy, to promote integration of securities markets, and to leave regional adjustments to other types of policies.

It is impossible to say how great the integration of the European Community's securities markets would be if the numerous restrictions on international financial flows were removed and if exchange rates were credibly fixed. Both of these factors, which are implicit in a monetary union, would undoubtedly make an enormous difference in the degree of integration of European securities markets. Much of this additional integration might come about, at least initially, by means of the Eurodollar market, implying integration with non-Community securities markets as well. The desire of individual European countries to avoid such integration with American securities markets has, of course, been the impetus to many of their existing restrictions on international financial flows. The implications for union monetary policy of integration with securities markets outside the union is discussed in the next chapter.

It should be remembered that intra-union integration of securities markets need not occur directly between every type of securities market. It is sufficient that certain securities be traded across the union or together form a well-integrated union-wide market and that the remaining securities markets in each nation be well integrated with the union-wide market. Integration both within and between nations can be promoted through the encouragement of financial intermediaries and through the development of secondary markets. These and other recommendations for encouraging integration of European securities markets are described in some detail in the Segré Report (European Economic Community Commission, 1966); since little progress has been made in this direction in the last decade, these recommendations remain valid. The possible role, in promoting securities-market integration, of a large market in government securities issued by a centralized union fiscal authority is discussed in the chapter on fiscal authority.

If the monetary authority is functioning in a situation where, at least for a time, some securities markets are less well integrated than others, the monetary authority must take this into account in enacting monetary policy. It should select monetary instruments that result in bank purchases of securities that are exchanged on well-integrated markets. To the extent that the poor integration of some securities markets leaves certain regions or sectors of the union relatively untouched by monetary policy, there may be justification for some regionally directed monetary policies. Such an adjustment to poor securities-market inte-

gration represents only a second-best solution, however. The long-run goal of the monetary authority should be to promote the integration of the securities markets of those isolated regions or sectors with the rest of the union.

All my arguments for securities-market integration have been concerned with the administration of union monetary policy. They are reinforced by other arguments for securities-market integration concerned with efficiency, promotion of trade, and ease of balance-of-payments adjustment to nonmonetary disturbances.[11] In a monetary union, a current-account deficit must be financed either with money or by borrowing. If securities markets are well integrated, short-run deficits can easily be financed through the capital account, vastly reducing the need for the redistribution of money or for temporary adjustments in relative product values. The importance of easing balance-of-payments adjustment in a monetary union is in itself a strong argument for securities-market integration. When it is combined with the arguments presented here—that integrated securities markets are also necessary for an effective and efficient union monetary policy—the importance of integrated securities markets in a monetary union seems well established.

[11] For such arguments, see, e.g., Corden (1972); European Communities (1970); European Economic Community Commission (1966); Ingram (1959, 1962, and 1973); and Kenen (forthcoming).

V. INTEGRATION WITH THE OUTSIDE WORLD

No monetary union is completely isolated from the rest of the world. While the conclusions of the preceding chapter about the role of securities-market integration in diffusing the results of internal monetary disturbances basically remain valid regardless of the union's relationship with the outside world, they most accurately apply to a monetary union where (1) there are no capital flows between the union and the outside world and (2) the external exchange rate is freely floating. Alternative assumptions about the integration of securities markets between the union and the rest of the world and about the union's external exchange-rate policy do modify to some degree the conclusions about intra-union responses to an expansionary monetary policy in one country. Primarily, however, they affect conclusions about the union's ability to conduct an independent internal monetary policy and to remain independent from monetary disturbances in the outside world. This chapter explicitly considers how the union's relationship with the outside world affects the union's monetary policy.[1]

The union monetary authority is assumed to hold the union's foreign-exchange reserves in a reserve-pool fund and to conduct external monetary policy for the union. The major component of external monetary policy is the union's exchange-rate policy. If the monetary authority wants to influence the market value of the union's currency directly, it will conduct open-market operations in the foreign-exchange markets, using its reserve-pool fund to finance such operations. Another component of external monetary policy may be the imposition of restrictions on financial capital flows between the union and the outside world. In a monetary union, any restrictions on capital flows with the outside world must be imposed by a union-level authority and must be applied to all member nations. Particularly if securities markets within the union are well integrated, restrictions on capital flows between a *single* member country and the outside world would be rendered ineffective by leakages into other member countries.

[1] Kenen (forthcoming) is an example of a theoretical model that compares the implications of capital mobility under fixed and flexible exchange rates for a single country trading with the outside world. While he does not consider distributions and relative impacts within the country, his analysis is appropriate for thinking of the monetary union in the aggregate relative to the outside world. The conclusions here about union monetary policy reflect his findings.

The degree of integration between the markets for the union currency and for currencies of the outside world depends upon the degree of substitutability between these currencies, both in the eyes of the commercial banks and the nonbank public and in the actions of the monetary authority. Direct substitutability between currencies by the public and the commercial banks implies that they are willing to hold both currencies and that a depreciation of one currency relative to the other will induce asset holders to increase their holdings of the depreciated currency at the cost of holding the other currency. Outside currencies may be held for reasons that do not necessarily imply substitutability between the currencies. An outside currency may be held in the hope of receiving capital gains from an expected appreciation of the currency; for transactions purposes, where contracts are denominated in the outside currency and where an exchange of currencies involves costs or uncertainty; or as a means of reducing risk in the portfolio when the prices of some anticipated purchases are denominated in the outside currency and where there is additional risk on interest-bearing securities denominated in the outside currency. However, if private asset holders felt confident that there would be *no* change in the external exchange rate, they might then consider the two currencies to be close substitutes. Any substantial degree of substitutability between currencies within private portfolios is likely to depend upon the monetary authority's pegging the exchange rate and upon general confidence that it will continue to do so. As indicated in Chapter II, perfect substitutability between currencies in the eyes of private asset holders is unlikely except in the case of a credible monetary union for those currencies.

As in the case of securities markets, the degree of integration between two currency markets reflects the extent to which their relative price (the exchange rate) remains unchanged when there is increased demand for one currency matched by an equivalent decrease in demand for the other currency. Thus, regardless of the public's willingness to hold both currencies, the monetary authority itself integrates the currency markets whenever it intervenes in the foreign-exchange market in such a manner as to lessen the change in the exchange rate. A policy of exactly pegging the exchange rate through currency-market intervention produces a perfectly integrated market between the two currencies for the duration of the pegged-rate policy.

Just as securities markets can be indirectly integrated through mutual substitutability with other securities, so can two currency markets be indirectly integrated. If, for example, highly liquid securities in two

countries, each denominated in domestic currency and each a close substitute for that currency, were also highly substitutable with each other, the two currency markets would be indirectly integrated to a high degree, even though neither currency was held in the other country and there was no official intervention in the foreign-exchange market. Conversely, close integration of the currencies markets can indirectly integrate the markets for highly liquid securities, although these securities may not themselves be internationally traded.

Integration of the markets for two currencies should not be confused with the linkages between geographic centers of the foreign-exchange markets, through which arbitrage aligns the exchange rates for a given currency throughout the world. These arbitrage possibilities depend upon convertibility and constitute integration of the markets for a *single* currency. In this study it is assumed that there is world integration of individual currency markets for any currencies under consideration.

Since virtually all international exchange is contracted in monetary terms, exchange-rate policy indirectly affects the integration of the markets for most internationally traded goods, services, and securities through its effect on exchange risk. Exchange risk creates preferences for goods, services, and securities that are priced or denominated in a *particular* currency and thus reduces the integration of these markets between currency areas. To the degree that an exchange-rate policy decreases perceived exchange-rate risk, it promotes the integration of various noncurrency markets. One of the motivations for forming a European monetary union has been the belief that the complete elimination of exchange risk within the Community will promote the integration of goods, services, and securities markets. The amount of exchange risk associated with a particular exchange-rate policy is not necessarily correlated with the degree of integration of currency markets, however. For instance, a fixed-exchange-rate policy that is believed to be unsupportable for any length of time could foster perceptions of a high degree of exchange risk, in spite of the perfect integration of the currency markets for the moment; in such a case, the monetary authority's policy, while integrating the currency markets, might actually reduce integration of other markets.

Restrictions on financial capital flows reduce the integration of securities markets quite directly. It is possible, however, that such restrictions could reduce exchange risk, for example, if large, destabilizing speculative capital flows would occur in the absence of the capital-flow restrictions. In such a case, the restrictions conceivably could

contribute to the integration of markets for goods, services, and securities that were not directly affected by the restrictions.

Market integration between the monetary union and the outside world is, then, determined in some measure by the union's external monetary policy. In the other direction, the integration of various markets may well be a factor in the choice of external monetary policy. These relationships, in turn, influence the effectiveness of the union's internal monetary policy. Without further consideration of how external monetary policy and market integration affect each other, we turn to an examination of how the effectiveness of internal union monetary policy is influenced by the choice of exchange-rate regime and by the integration of securities markets between the union and the outside world.

Flexible External Exchange Rate

If the monetary union has a perfectly flexible external exchange rate and there is no capital mobility between the union and the outside world, the union's response to an expansionary monetary policy in one country will be the same as that described in Chapter IV for the union as a closed economy. The bank purchase of securities will increase the union's money supply, reduce its interest rates, and increase its product values. The only necessary addition to the analysis is the effect of the increased product values on the union's demands for imports. The resulting increased demands for imports raise union demand for foreign exchange and depreciate the union currency, with no net effect on the union's aggregate product values. To the extent that the depreciation lowers the union's terms of trade with the outside world, there will be a shift of resources into the production of exportable and import-competing goods.

Whether the increased demand for imports comes from the union as a whole or from the country where the monetary policy was enacted depends, of course, upon the integration of securities markets within the union. In the event that union securities markets are not integrated, the depreciation of the union currency will speed the diffusion of the expansionary impacts. The depreciation, caused in this case by increased import demands primarily from one country, will increase demands for goods and services throughout the union. One would then expect a current-account deficit for the domain of the bank-purchased securities, matched by a current-account surplus elsewhere in the union.

The extreme case of no financial capital flows between the monetary union and the outside world would be unlikely, unless severe restrictions on capital flows were imposed by the union monetary authority. The experience of several European countries in imposing such capital-flow restrictions suggests that they are seldom completely effective if the differences in returns between the separated securities markets present opportunities for sufficiently high profits. One would expect at least some integration of securities markets between the union and the outside world.

When financial markets are thus integrated to some degree, the depreciation of the union currency induced by the expansionary union monetary policy is greater than in the absence of capital mobility. The downward pressure on union interest rates induces a capital outflow from the union to the outside world. However, under flexible exchange rates, asset holders can make net purchases of securities only to the extent that the depreciation of the union currency induces a corresponding trade surplus. In the event that integration of securities markets between the union and the outside world is very high and that world securities markets are large compared with the union markets, the union's interest rates will largely be determined by interest rates in the outside world, for any downward pressure on union interest rates will induce substitution into foreign securities. Correspondingly, however, the increase in the union's demand for foreign securities will be greater than when interest rates remain unchanged and will thus produce a greater depreciation in the union currency. The depreciation of the union currency will increase demands for union goods and services and raise product values in the union. Thus, the expansionary monetary policy works through the exchange rate when securities markets are highly integrated.

Again, whether the increased demand for foreign exchange comes from the union as a whole or primarily from a single country depends upon the integration of securities markets within the union. Either way, the depreciation of the union currency will expand product values across the union. When the expansionary impacts come about almost exclusively because of the depreciation, therefore, they will immediately be felt across the union, regardless of the integration of securities markets within the union.

Union monetary policy is thus capable of expanding union product values when there is a flexible external exchange rate, whether or not securities markets are integrated between the union and the outside

world, but the mechanism varies. If there is very little outside integration of securities markets, expansionary monetary policy works through a decline in union interest rates. The more integrated are securities markets with the outside world, the less potential there is for the monetary authority to lower union interest rates; the expansionary monetary policy then works through a depreciation of the union currency.

With integration between union and outside securities markets, the union monetary authority therefore has less independence to influence interest rates or, since there can be no change in exchange rates within the union, to affect relative product values within the union. The union must also endure a greater change in the external exchange rate for monetary policy to accomplish a given expansion of product values. If demands for exports and imports respond slowly to exchange-rate changes, the exchange rate may be quite variable. This can be particularly true in the face of uncertainty in forming exchange-rate expectations, a factor that is virtually ignored in this study.

Furthermore, integration between union and outside securities markets makes the union subject to pressures from external monetary conditions. A deflationary monetary policy in the outside world, relative to union policy, will put upward pressure on foreign interest rates, decrease the supply of foreign exchange to the union, and depreciate the union currency. The same kind of expansionary pressure on union product values can be induced by a deflationary monetary policy in the outside world as by an internal expansionary policy by the union monetary authority.

Fixed External Exchange Rate

To the extent that there is some integration between currency markets, either because of currency substitutability in private portfolios or because of official intervention in the foreign-exchange market, there will be a smaller depreciation of the union currency as a result of the expansionary union monetary policy. With currency-market integration, the depreciation induces either private asset holders or the union monetary authority to sell foreign currency for union currency, thereby limiting the depreciation. Insofar as the expansionary impacts of monetary policy would have been achieved through depreciation of the union currency in the absence of currency-market integration, the expansionary impact of the union's monetary policy is diminished.

The extreme case would be that of perfect integration of securities markets, with the union small relative to the rest of the world, and perfectly integrated currency markets, as in the case of a pegged

exchange rate. In that situation, union monetary policy would have no impact on the union's economy. The banks, directly or indirectly, would be purchasing securities from the outside world, with no effect on the union money supply. There would be no expansionary pressures, for union interest rates would not fall, and the union currency would not depreciate. There would, of course, be a loss of international reserves from the union's reserve-pool fund as the union financed the purchase of securities from the outside world, but the reserve loss would not affect product values in the union.

While it is quite likely that a monetary union may face a perfectly elastic supply of some securities that are sold on a large world market, or that some union securities may be perfect substitutes for securities in the outside world and thus sold on a large perfectly integrated market, it is improbable that there would be a perfectly elastic world demand for *all* securities issued within the union. Thus, the case of perfect integration of securities market is a somewhat hypothetical extreme. Many union securities in all likelihood will not be perfectly substitutable with outside securities, and interest rates on these securities will be at least partially determined within the union. If an expansionary monetary policy results in bank purchases of securities whose market domain is primarily within the union and which are, at most, imperfect substitutes for securities traded on large world markets, there will be an initial increase in the union's money supply, a decline in union interest rates, and expansionary pressures on union product values.

Just as in the case between countries of the union, however, as product values rise, the union will move into a current-account deficit with the outside world. The union money supply will gradually decline as the union finances all or part of its trade deficit with reserves. This continuing decline in the union's wealth and in its money supply will gradually reverse the expansionary impacts on the union economy until the current account returns to equilibrium. How rapidly the increment of the union's money supply is lost to the outside world in a regime of fixed exchange rates depends upon the degree of securities-market integration between the union and the outside world.

In the long run, the union will have lost much of its increment of new money, and much of the initial expansion of union product values will have been reversed, just as in the case between countries of the union. In fact, any long-run expansionary impacts on union product values as a result of the expansionary change in union monetary policy depend upon the union's ability to expand the world economy, or at

least those prices and incomes that determine foreign demand for the union's goods and services. Only in this way can expanded union product values be consistent with current-account balance. If the union is small relative to the outside world, such that it faces fixed world prices for tradeable goods and services, a change in union monetary policy will have no long-run impact on the union's economy.

The union monetary authority could, of course, retain some monetary independence through continuing changes in union monetary policy if union securities markets were not perfectly integrated with those in the outside world. This would mean continually sterilizing the decline in the money supply induced by the balance-of-payments deficits. Even if the union were willing to tolerate the continuing decline in union interest rates and loss of wealth implied by such policies, however, it would be limited by its stock of foreign-exchange reserves.

Whether the union's balance-of-payments deficit with the outside world comes from the union as a whole or primarily from the domain of the bank-purchased securities depends upon the degree of securities-market integration within the union. It is conceivable that securities-market integration with the outside world, under fixed rates, could actually contribute to the diffusion of money within the union, if securities markets were not integrated within the union and if the union were large enough to affect the world interest rates. An example would be a European monetary union where the national securities markets were well integrated with the international market, but not with each other. A monetary expansion in France could then spread to Germany through the international securities markets, to the extent that it reduced the interest rates on the international markets, inducing the Germans, among others, to sell their holdings of the international securities. The German money supply would then rise, and interest rates in the German securities markets would decline. Unless the union markets are large relative to world markets, however, such linkages through a third, outside market are more likely to make the entire union dependent on monetary conditions in the outside world than to serve as an effective conduit for spreading union monetary policy from one member country to another.

Conclusions on External Monetary Considerations

In summary, then, the union's monetary independence from the outside world is maximized when there is no financial integration—no capital mobility and perfectly flexible external exchange rates.

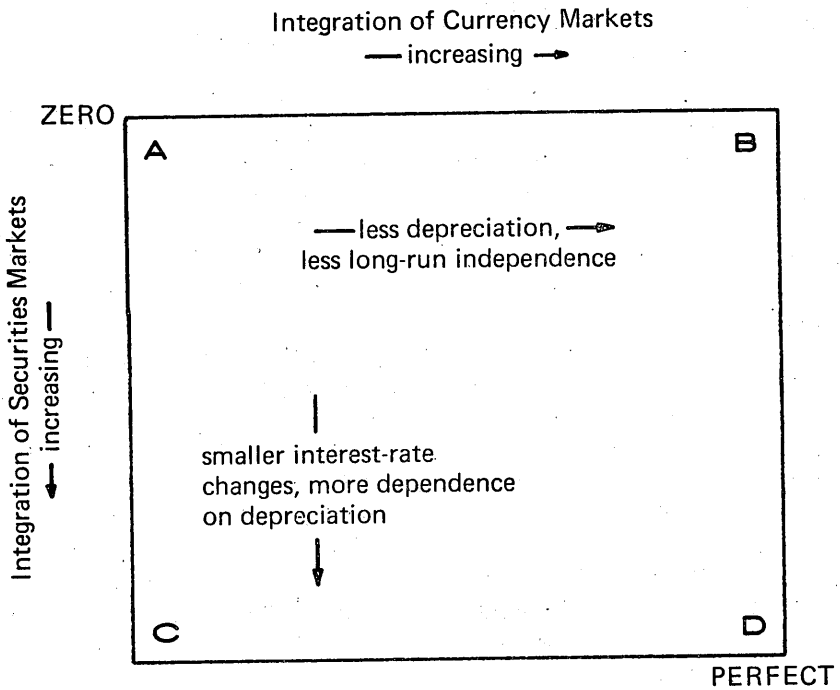
To the degree that currency markets are integrated, whether through currency substitutability in private portfolios or through official intervention in the foreign-exchange market, the union loses its long-run monetary independence, for an increment of new money in the union is slowly dissipated to the outside world. The greater the integration of currency markets, the smaller will be the depreciation of the union's currency as a result of an expansionary union monetary policy. And a small depreciation implies that the long-run balance on the current account can be achieved only with a small change in relative product values between the union and the outside world. With perfectly integrated currency markets, virtually the only possibility for the union monetary authority to influence union product values in the long run is for union monetary policy to influence the product values of its trading partners as well. Such a possibility exists only if the union is quite large within the domain of integration of goods and services markets.

Integration of securities markets reduces the potential for interest-rate changes in response to monetary policy, thereby removing that means of increasing product values. At the same time, however, securities-market integration implies a larger induced demand for foreign exchange. If currency markets are not integrated, this increased demand for foreign exchange leads to depreciation of the union's currency and expansion of product values by that means. When currency markets, as well as securities markets, are integrated, changes in both interest rates and the exchange rate are thereby limited, reducing the capability of the union monetary authority to influence product values, even temporarily.

If securities markets and currency markets are both perfectly integrated, the union monetary authority can influence union product values only to the extent that its actions affect interest rates and product values across the domain of integration. For a small union, complete financial integration implies monetary impotence.

The continuing relationships between monetary independence for the union and various degrees of financial-market integration are depicted graphically in the accompanying figure. Any combination of currency-market integration and securities-market integration can be related to some point within the square. Point *A* in the upper-left-hand corner indicates one extreme, that of no financial-market integration. This is the point of maximum financial independence; a move in either direction, rightward or downward, lessens the monetary independence

DEGREE OF MONETARY INDEPENDENCE UNDER VARIOUS CONDITIONS OF FINANCIAL-MARKET INTEGRATION*



Point A: Maximum independence through interest-rate changes and depreciation.

Point B: No depreciation and no long-run independence; temporary independence through interest-rate change.

Point C: No interest-rate changes; independence solely through depreciation; exchange rate will also change in response to external monetary disturbances.

Point D: No change in interest rates and no depreciation; neither temporary nor long-run independence.

*The conclusions of no independence are based on the assumption that the union is too small to affect outside interest rates and product values.

of the union. Point D in the opposite corner from A indicates the other extreme, that of perfectly integrated currency and securities markets, the position of no monetary independence for a small union.

No attempt is made here to form normative conclusions about the advisability of the monetary union's pegging the external exchange rate or imposing external capital controls. Such an analysis would require investigation of the interaction between exchange-rate policy and noncurrency-market integration, and of the role of exchange-rate expectations and their relationship to the exchange-rate regime and to securities-market integration. That is beyond the scope of this study. The arguments would be essentially the same for a monetary union as for a single country with an independent monetary authority.

VI. IMPLICATIONS OF MONETARY UNION FOR CENTRALIZATION OF FISCAL POLICY

The close relationships between monetary and fiscal policies in most countries and the mandatory centralization of monetary authority in a monetary union inevitably lead to the question whether fiscal policy should also be centralized.[1] The answer to this question depends partially upon the purposes for which the monetary union is formed. If monetary union is seen as one facet of what will eventually be a complete economic and political union, the question of centralization of fiscal policy is merely a matter of timing. At the other extreme, if monetary union is seen simply as the least costly way of managing the *de facto* monetary interdependence brought about by the integration of markets, the appropriate question may be: What is the minimal degree of fiscal integration consistent with monetary union?

A related consideration is the degree to which the countries have aggregated their economic objectives for monetary and other economic policies. If the countries of the union perceive themselves to have union-wide rather than primarily national interests, their attitude might well apply to fiscal as well as monetary policy. The question of centralization of fiscal policy would then be one of maximizing fiscal effectiveness for the entire union. In a monetary union where national interests are emphasized, however, and where countries wish to retain as much national autonomy as possible, the more appropriate question would be whether *national* economic goals were better attained with fiscal centralization or national fiscal independence. The argument is made here that in a monetary union, where the economies of the mem-

[1] Fiscal integration is an issue of widespread disagreement among economists. Meade (1957) places strong emphasis on a central fiscal policy in a monetary union. The Werner Report foresees a "Community budget whose economic significance will be weak compared with that of the national budgets, the harmonized management of which will be an essential feature of cohesion in the union" (European Communities, 1970, p. 11). Harry Johnson (in Krauss, ed., 1973) and Lutz (1972) have argued that the Werner Report put unnecessary emphasis on budget harmonization; in the conference discussion following Lutz's paper, Robert Triffin strongly supported this contention, while Eric Lundberg and Tibor Scitovsky emphasized the importance of budget harmonization. There has been little discussion of actual centralization of fiscal policy in the Community, except for some type of regional policy.

ber nations are highly integrated, national as well as union welfare may be maximized by the centralization of certain fiscal functions.

Fiscal policy, as the term is used here, refers to government purchases of goods and services, taxation of all types, and transfer payments to residents by the government. Government expenditures that are not covered by taxes must be financed by borrowing, and budget surpluses must be absorbed through the retirement of government debt or government lending. By this definition, fiscal policy itself cannot change the monetary base. This distinction between fiscal and monetary policy is particularly relevant in an analysis of a monetary union; when the monetary authority is centralized, independent national fiscal authority can no longer include the power to finance budget deficits with new money.

A distinction is made here between fiscal centralization and fiscal harmonization. Harmonization generally refers to coordination of national tax systems so that they do not interfere with or distort the flow of goods, services, and assets between countries within the union (see Krauss, ed., 1973, p. 21). Centralization, on the other hand, constitutes a transfer of fiscal authority away from the national governments to a central body and the pooling of tax revenues to finance union expenditure. Harmonization is an intermediate point on the continuum between national fiscal independence and complete centralization; it is consistent with a large degree of national fiscal authority and usually assumes that the tax revenues collected in a country will be spent in that country, except for specifically negotiated international transfers.[2]

Another, intermediate means of unifying fiscal functions is the granting of certain limited fiscal responsibilities to some central agency, along with the allocation of the necessary funds by the respective nations. Such limited authorizations for specific fiscal functions differ from fiscal centralization in that the central agency has no taxation powers but, rather, is completely dependent upon financial contributions that are negotiated and agreed upon by the member countries.

[2] Corden (1972) makes a distinction between harmonization and "complete fiscal integration," where the rates for all items of revenue and expenditure are centrally determined or mutually agreed upon, implying a loss of national budgetary freedom. Corden rightly points out that in such a situation the "central fiscal authority would logically have to cover the national budgetary deficits or receive surpluses that resulted from its policies" (p. 34). He places little emphasis, however, on the transition from national to centralized budgetary responsibility, maintaining that this "transfer of direct responsibility . . . would be purely an administrative matter" (p. 34). It is argued here that such a transfer constitutes a crucial difference between harmonization and centralization.

The European Community's move toward the use of value-added taxes in all member countries is an example of fiscal harmonization. At the present time, however, there is no uniformity in tax structures in the Community and the ratio of taxes to gross national product varies sharply from country to country (European Communities, 1975b). The services that are performed by the Commission and the Common Agricultural Policy are examples of limited authorizations for specific fiscal functions. There is no taxation power at the Community level and, by our definition, no real fiscal centralization.

Centralization of Stabilization and Redistribution Functions

The concept of fiscal federalism is useful in analyzing the appropriate degree of fiscal centralization for a monetary union. This theory is based on the assumption that there are various fiscal functions, some of which can better be carried out at the centralized level and some of which are more effective when decentralized. The question usually posed is how to allocate fiscal responsibilities among the governmental levels of a nation. Here the centralized level is the union and the decentralized levels are the national governments of the union.

For purposes of determining the appropriate level for fiscal activity, fiscal functions are categorized according to the objectives of government actions: stabilization of economic fluctuations, redistribution of income, and efficient allocation of public goods (see Oates, 1968, and Musgrave and Musgrave, 1973, Chap. 26). Such a classification is not designed to determine which taxes or expenditures should occur at a particular level of government but, rather, what should be the objectives of the fiscal authority at each level. Only the first two types of government fiscal activity—stabilization and redistribution—are particularly relevant for considerations of monetary policy. Efficient allocation of public goods is neither an explicit objective of monetary policy nor a factor that particularly influences the workability of monetary policy. Stabilization and redistribution, however, are both possible objectives of monetary as well as fiscal policy.

1. Stabilization function. Stabilization is used here broadly to describe government attempts to influence employment, income, price levels, rates of inflation, rates of investment and saving, and economic growth. As in our discussion of monetary policy, these objectives can be grouped together as product values.

In countries that trade heavily in internationally integrated goods and services markets, the ability of the national governments to change

relative product values among countries through fiscal measures is severely weakened by import leakages. Integration of markets is measured by the inability to create price differentials between those markets through differential buying and selling. To the degree that markets are highly integrated, therefore, a national government can change the price component of its country's product values only to the extent that it affects prices across the entire domain of integration. Moreover, high marginal income propensities to import goods and services reduce the government's national expenditure multiplier. Conversely, each country is strongly influenced by the fiscal actions of its neighbors, since their fiscal policies influence their demands for the country's exports. The likelihood of strong interdependence among the economies of a monetary union implies that a given rise in national government expenditure will have a much weaker impact on that country's product values than would a similar increase in a relatively closed economy. Because of these spillovers, strong national stabilization policies that conflict with neighboring policies may be difficult or impossible to achieve.[3]

For a monetary union, there is some "optimal" degree of fiscal stabilization that will maximize the union's welfare function, whether that welfare function is determined by some combination of separate national objectives or is based on some aggregate measure of union welfare. Whichever is the case, there are several reasons why national fiscal authorities would be less likely to achieve such an optimum than would a centralized fiscal authority (assuming competence and sufficient authority at either level).

First, each national government has less than full information concerning the actions of other nations, unless there is close coordination among the national governments. Even with such coordination, however, the sum of the member countries' independent national fiscal policies may be nonoptimal, possibly because of each government's failure to take full and accurate account of the externalities of its own actions or, alternatively, because of the possible willingness of a government to take a "free ride" on the convenient spillovers from its partners' policies.

The failure of a government to take account of the externalities that it is generating would most likely occur if nations had conflicting objectives for fiscal policy. For example, one can imagine Germany em-

[3] The impacts of these spillovers for national stabilization policies have been discussed by McKinnon and Oates (1966) and Shaw (1967).

phasizing the need to reduce inflationary pressures and France worrying more about the need to expand its economy. With good information, each would take into account the expected spillover from the other government's actions but might attach little importance to the spillover on others from its own policies. As a result, one would expect Germany to follow a deflationary policy and France an expansionary policy, each of which would be partially offset by the spillovers from the other. If these strong fiscal policies had costs of their own, such as unwanted taxation or curtailment of government services in Germany and excessive accumulation of government debt in France, the result of independent national fiscal policies would be far from optimal. Moreover, the spillovers would primarily affect tradeable goods and services sectors, while the national fiscal policies would likely influence the overall level of expenditure. Thus, France might find herself generating excessive inflationary pressures in some of its nontradeable sectors in order to offset the declining German demand for French exports, while Germany might feel compelled to tolerate unwanted deflationary pressures in some of her nontradeable sectors in order to offset rising French demand for German exports. A centralized fiscal authority could avoid some of these problems by formulating an aggregate fiscal policy that fully took into account the spillovers, thus avoiding some of the conflicting actions that the independent national authorities take. While conceivably the same thing could be accomplished through close coordination among the national authorities, experience suggests that coordination of national fiscal policies is not very effective when the coordinated objectives imply any conflict with individual national interests.

The other possibility, that a government may fail to carry out its own fiscal measures because it feels confident of the spillover from its neighbors' policies, is more likely to be a problem when the national fiscal objectives are the same but the needed fiscal measures are unpleasant or politically costly. Thus, if all the member countries were agreed on the need to reduce inflation but regretted the implied taxes and cutbacks in government services, some national governments might fail to assume their share of the effort in reducing the union's inflation. In such a case, either the burden would be borne unfairly by the more responsible governments, or the overall union level of fiscal restraint would be below the agreed optimum.

The governments of the European Community apparently recognize the spillovers of national stabilization policies, if one is to believe their

periodic pledges to pursue agreed upon objectives of stabilization policy. There is, however, little evidence that they ever enact national fiscal measures in the interest of the Community objective if such a policy would in any way conflict with perceived national objectives (Balassa, 1975, pp. 189–191).

The level at which fiscal policies are administered not only affects the substance of those policies but also influences the means of financing government deficits and the distribution of the burden of government debt. Government expenditures are paid for with taxes or by borrowing either internally or from abroad. Taxes and internal borrowing place a burden on the current population, to the extent that private consumption expenditure is reduced; to the extent that current investment expenditure and capital formation are diminished, they transfer the burden to future generations. It is generally assumed that taxes primarily reduce consumption, while internal borrowing largely affects private investment expenditure. External borrowing, on the other hand, essentially does not reduce current expenditure but places a burden on future generations to service and repay the debt through real transfers to foreigners (Musgrave and Musgrave, 1973, pp. 585–591).

Whether borrowing is internal or external from the point of view of the government depends upon the domain of jurisdiction of that government. Borrowing within the union by a central fiscal authority constitutes internal borrowing for that authority, whereas borrowing by the national governments of the union is internal for them only if they borrow within their own countries. In terms of a union-wide welfare function, borrowing is external only when the lenders reside outside the monetary union.

The proportion of external borrowing in a government's budget deficit may be a factor in determining the government's fiscal policy. If national governments are concerned about the accumulation of external debt, about future external debt-service burdens, and about the effect of continued external borrowing on their credit ratings, these may be viewed as costs that cause national governments to be less active in expansionary stabilization policy than would be desirable. Each national government may consider only its own externally incurred debt without taking into account that its own citizens are holding the external debt of other regions at the same time. On the other hand, external borrowing by national governments may mean that some of the indirect costs of such borrowing, such as higher interest rates or a balance-of-payments deficit for the union, are borne in large

part outside the domain of the national government. If the national government defines its area of concern quite narrowly, it may choose to ignore such externalities and thus carry out a more active expansionary stabilization policy than would be desirable.

It is not obvious, therefore, whether to expect the bias of national governments to be toward too much or too little expansionary fiscal activity compared with the union optimum. When the domains of the governments' jurisdictions are smaller than the domain of union welfare, however, what is external borrowing for the governments is not always external for the union. To the extent that external-financing considerations influence governments' fiscal policies, these differences in domains create the possibility that the combined actions of individual national governments will not be consonant with the maximization of the union's welfare function. Such problems would be avoided if the stabilization function were centralized, making the entire union the domain of the fiscal authority. Alternatively, good information and cooperation among the national governments of the monetary union might somewhat alleviate these problems of externalities *if* such harmonization caused governments to incorporate into their national decisions considerations that are external to each nation but internal to the union.

There is also controversy over the ability of national fiscal authorities in a monetary union to borrow enough to carry out stabilization policies. Two factors bear on this question—the separation of monetary policy from fiscal authority and the relative riskiness of government debt at various levels, along with the implications for the interest rates on government securities.

In countries that have their own currency, fiscal and monetary policy are often closely linked, and government deficits are frequently financed with new money. A single combined monetary-fiscal stabilization policy may be even more effective than the sum of the monetary and fiscal policies alone because of the public's possible perception of a strong, united government economic policy. In a monetary union, such a combined policy is possible only with a centralized fiscal authority. National fiscal authorities must finance their deficits by borrowing from the public. There may be instances where the objectives of national stabilization policies are the same as those of union monetary policy. Monetary policy would then strengthen and support the national fiscal policies. This could even take the form of financing with new money if the monetary authority (or the commercial banks in

response to an easing of discount policy or reserve requirements) were to buy national government securities on the open market. The national governments could not, however, have any guarantees of such support unless there were close harmonization of national budget policies in the union and coordination with the monetary authority.

Moreover, the borrowing capabilities of the individual national governments may not be the same as those of a central fiscal authority. This depends on the public's evaluation of the risk inherent in the various government securities. A centralized fiscal authority responsible for major stabilization functions could possibly have a higher credit rating and level of confidence than any national government in the union because it represented the entire union economy and had the central monetary authority behind it. Even more likely is the possibility that the debt of such a central fiscal authority would be considered no more risky than the debt of any one national government and considerably less risky than the debt of *some* of the national governments, notably those that most wanted to borrow. For this reason, a given level of financing by a central fiscal authority might well be accomplished at a lower interest rate than the weighted average of rates required of the national governments when the countries with low credit ratings were doing the most borrowing.

It is sometimes argued that deficit financing for the national governments of a monetary union will be particularly easy, because the national governments can borrow on union-wide capital markets without having much effect on the union interest rate. Moreover, there is support for such an argument from international monetary theory, where it has been shown that fiscal policy in small open economies is more effective in influencing output when capital is highly mobile and, by implication, more effective in *small* economies than in economies large enough to influence world interest rates (Mundell, 1968). Two qualifications are necessary before extending this conclusion to national fiscal authorities of a monetary union.

First, this added effectiveness is based on the short-run advantage of borrowing abroad without driving up the interest rate, with no consideration of the need to service or repay the external debt in the future. But no national government can indefinitely finance consumption expenditures externally, in excess of the growth of the economy, without affecting its credit rating and the interest rate that it must pay. Moreover, if the government is borrowing to finance consumption, the future cost of debt service and repayment may exceed the current benefits.

One has only to think of New York City to be reminded of the ultimate difficulties of overborrowing for the government of a small open economy.

Second, while a single national government may not measurably influence the union-wide interest rate, the combined borrowing of all member nations on union securities markets will. Independent national fiscal authorities share the costs of the expansionary policies of other nations, without having any control over other nations' policies.

The strong spillover effects of national stabilization policies suggest the need minimally to coordinate and harmonize this function in a monetary union. This conclusion applies even when the union's objectives may be some combination of national objectives, with a desire to maintain national autonomy. In a monetary union where there is considerable integration of goods and services markets, strong independent national stabilization policies may simply not be possible. Beyond this, some of the financing considerations point to the need for centralization as well as harmonization of the stabilization function. The resulting loss of national autonomy may, however, be considered a serious cost, which must be weighed against the benefits.

In the United States, the allocation of fiscal powers to the federal government or to the state governments has long been and remains a controversial issue. Most of these arguments pertain, however, to the functions of redistribution and allocation of public goods. It is generally considered that the states' economies are far too open for the state governments to attempt to use fiscal policy for stabilization purposes. The stabilization function remains the responsibility of the federal government.[4]

In Europe, of course, the member nations of the Community do manage to carry out differentiated national economic policies. The interdependence among the national economies of the Community is probably considerably less than among the regions of the United States (Balassa, 1975, pp. 191–192). It is difficult, however, to infer the potential for effective national stabilization policies for a European monetary union from looking at the results of their present national

[4] Oates (1972) concludes that "local governments have a real incentive for avoiding aggressive deficit-financing programs for stabilization purposes. Not only are the multiplier effects associated with the spending likely to be small, but there is the further disadvantage of burdening the community with a significant external debt." Similarly, Engerman (1965) states that one would not expect an optimal stabilization policy from the state governments, and that stabilization measures would probably be insufficient if left to lower-level governments.

economic policies, for each of these countries now has the added support of an independent national monetary authority, which can carry out a somewhat independent monetary policy (as a result of exchange-rate flexibility, barriers to capital mobility, and sterilization of the balance-of-payments). Moreover, the integration of goods and services markets within the Community is probably considerably less today than it would be if the Community established a monetary union. The spillovers from national stabilization policies in a European monetary union would in all probability seriously limit any effective independence for those policies, and could result in considerable costs to the Community as a whole if one government were to carry out a strongly deviant stabilization policy.

2. *Redistribution policies.* The redistribution function of fiscal policy involves both interindividual redistribution and intercommunity redistribution. In our discussion, interindividual redistribution will be referred to simply as redistribution, while intercommunity redistribution will be called sectoral or regional assistance. For both types of redistribution, there are questions of whether nations should independently determine their own policies and whether they should be responsible for their own financing.

For a monetary union of highly integrated economies, there are strong reasons why redistribution policies among individuals should be centralized at the union level. For one thing, if national policies differ, the relative costs and benefits of the various national policies will affect locational decisions of people and industries, producing allocation inefficiencies and distortions. There are incentives for those who pay for the redistribution policy to move to the countries with the weaker policies, and for the recipients of the redistribution to move where the policy is stronger. This has the effect of penalizing national governments with strong redistribution policies and rewarding those with weak policies, with the likely result of reducing the level of redistribution undertaken by individual nations below what is considered socially desirable and what would be supported for the union as a whole. A uniform redistribution policy for the entire monetary union, based on criteria that do not depend upon location of residence, avoids these problems.[5]

[5] Musgrave and Musgrave (1973, p. 606) state this principle emphatically: "Fiscal redistribution—both progressive income taxation applied to the upper end of the income scale and transfers granted to the lower end—must be uniform within an area over which there is a high degree of capital and labor mobility."

This alone is an argument merely for harmonization, and not necessarily for centralization, of redistribution policies. Problems of financing a uniform policy, however, indicate the need for centralization at the union level. This is particularly true if the uniform policy produces large differences in the net redistribution in some countries relative to others.

Current redistribution generally implies balanced government budgets, with transfers to some being financed by taxes on others. By contrast, the financing of a transfer through government borrowing is more an *intergenerational* than a current transfer. A union policy for current redistribution of income would then guarantee fiscal balance for the union as a whole, but not necessarily for individual countries. If each national government were held responsible for its own financing of the union policy, some governments would have budget deficits, with increasing national debts, while others would have offsetting surpluses. The policy would no longer be one of current redistribution. To the extent that the burden of national governments' debts fell on future generations, there would be a redistribution from the future to the current generation in the deficit countries, and in the opposite direction in the surplus countries. In such a situation, a policy that was designed as a *current* redistribution policy within the union would effectively become several offsetting national policies of intergenerational redistribution, with growing financing problems for some countries.

Centralization of the policy at the union level allows for straightforward transfers from the fiscal-surplus to the fiscal-deficit countries, keeping the redistribution within the current generation. That the interindividual transfers prescribed by a uniform union policy should result in net transfers between countries is expectable, and any agreement on a uniform redistribution policy for the union should be based on such an expectation.

The choice for the monetary union, therefore, should not be whether to centralize the financing of a uniform union redistribution policy, but whether to have a uniform policy at all. To insist on a uniform redistribution policy applicable to each member country, and at the same time to insist that each country finance its own redistribution, creates potential burdens on some countries that may seriously offset for them the benefits of remaining in the economic union. Centralization of the redistribution function implies recognition of a union welfare function, the redistribution of income to the low-income residents

of the union becoming the responsibility of high-income residents throughout the union rather than in the country where the poor happen to reside.

If the member nations of the union are unwilling to commit themselves to the intercountry transfers that are inherent in a centralized redistribution policy, their alternative may necessarily be to relinquish strong redistribution policies at any level. The difficulties of widely varying redistribution policies apply to any group of countries where there is high mobility of residents and of the factors of production. Such difficulties are exacerbated by the formation of a monetary union to the extent that monetary union itself promotes the integration of markets and the mobility of residents and factors of production. Thus, while Europe is currently able to support widely differing national redistribution policies, such policies could present additional problems if a European monetary union were formed.

Intercommunity redistribution can take the form of either sectoral or regional assistance; a single program may often embody elements of both. Sectoral assistance consists of various kinds of production incentives, such as tax credits or direct subsidies, to certain productive sectors of the economy. Regional assistance includes production and investment incentives and public investments in the infrastructure for a particular region.

Sectoral and regional assistance on a national level in a monetary union encounters the same kinds of financing problems as do stabilization and interindividual redistribution policies if some countries have more sectors or regions receiving assistance than do others. In such a situation, a sectoral or regional assistance program carried out at the union level could be more substantial than all those at the national level, since it would allow for intercountry transfers instead of external borrowing by national governments.

Moreover, regional and sectoral assistance at the national level, conducted in an uncoordinated manner, creates problems of competition among the national programs. The national sectoral assistance of one country may serve simply to move that sector away from other countries of the union, creating undesirable adjustment costs and possible losses of efficiency that are not warranted for the community as a whole. National regional assistance programs often fail to take account of the existence of economically integrated regions that straddle national boundaries, and thus they distort economic incentives within these regions. Balassa (1975, p. 265) has pointed out that regional and

sectoral assistance programs designed at the national level produce a bias toward positive rather than negative measures, although disincentives would sometimes be more appropriate. For instance, a national government may hesitate to apply disincentives to produce in the country's overcrowded metropolitan region for fear that such a policy would drive industries to the metropolitan regions of other countries, instead of toward the depressed regions of its own country.

The European Community has always recognized that increased trade and freedom for factor movements may increase the problems of the depressed or backward regions, the need for regional and sectoral assistance having been mentioned in the Treaty of Rome.[6] The formation of a monetary union may further strengthen the rationale for regional assistance at the union level, allowing for transfers between nations for this purpose. Offsetting the gains of any monetary union are the economic costs that may result from the automatic adjustments of money supplies in response to payments imbalances among nations of the union. Regional assistance can be used as a means of alleviating some of these adjustment costs. Moreover, to the extent that monetary union contributes to the free flow of goods and factors of production, regional and sectoral assistance may become more necessary.

In spite of the Community's recognition of the need for regional and sectoral assistance at the union level, most such assistance in the Community has in fact occurred at the national level. Some Community programs exist. The Common Agricultural Policy functions at the union level both to aid the agricultural sector and to lessen regional disparities in that sector. There are the European Investment Bank, the European Social Fund, and the newly established European Regional Development Fund. But all of these are smaller than the national programs.[7] At the present time, any existing or proposed programs of regional or sectoral assistance consist of limited authorizations for specific assistance functions.

Fiscal redistribution from one region, sector, or group of the union to another can obviously be accomplished either through limited authorization for specific fiscal functions or through fiscal centralization. The choice between the two depends upon the relative importance that the members of the union place on the retention of national autonomy, on the one hand, and the strength and effectiveness of union fiscal

[6] For more recent discussions of the regional problem, see, for example, European Communities (1973a and 1973c) and Denton (1974).

[7] For a discussion and an evaluation of the regional assistance programs in the European Community, see Balassa (1975, Chap. 7.4).

functions, on the other. While effective union stabilization policy cannot be accomplished through limited authorization, redistribution conceivably can be. However, with limited authorization for certain redistribution functions, the funding is accomplished in such a way that the respective national contributions are extremely apparent, since these contributions must be obtained from each national government. The national governments are thus placed in a position constantly to evaluate the relative costs and benefits of the program to their country, rather than to consider the costs and benefits in terms of some agreed union-wide standard. Such national comparisons provide possible incentives for nations who are net contributors to a program to withdraw from the economic union or to refuse to participate in that particular redistribution function. By contrast, fiscal centralization permits the levying of taxes at the union level. The central fiscal authority can establish criteria for both taxes and transfers, such as personal income or value added, that are blind to national criteria, thus truly incorporating the concept of a union-wide welfare function. There is no necessity even to calculate the national origin and destination of many of the funds. Taxes and transfers based on such union-wide criteria, moreover, act as automatic stabilizers for the various regions of the union, lessening the need for discretionary regional assistance. Fiscal centralization of the redistribution function would tend to permit greater interindividual, and possibly more intercommunity, assistance than would limited authorizations for certain programs.

Fiscal policies to change *relative* product values between countries of the union may be considered a form of either stabilization policy or intercommunity redistribution within the union. I have already argued that national governments may encounter considerable difficulties in carrying out conflicting stabilization policies and that problems of financing may inhibit their willingness to do so. I have also shown that the union monetary authority has little ability to influence relative product values. If the monetary union wishes to retain effective governmental capacity at some level to influence relative product values, it may have no choice but to centralize the necessary fiscal authority.

A central fiscal authority with the powers to levy taxes and to make transfers and expenditures throughout the union could change the relative product values between countries without any borrowing, simply by taxing relatively more in some countries and spending in others. It would thus be possible to maintain the desired differences in product values indefinitely, in spite of the implied trade deficit for countries whose product values have been expanded, for the trade deficit can be

offset in the transfer of tax revenues, leaving a balanced current account and no disturbances to financial markets. By comparison, if ongoing changes in monetary instruments were used to effect the same change in relative product values (which would be possible only if securities markets were not well integrated), the resulting trade deficit would imply a current-account deficit, with a continuing redistribution of wealth and increasing interest-rate differentials between the respective countries.

Fiscal Implications for Monetary Policy

The preceding section developed several arguments for centralizing the stabilization and redistribution functions of fiscal policy among integrated economies, and particularly in a monetary union, in order to maximize the effectiveness of these policies. There are also at least two ways in which the assignment of these fiscal functions influences the administration of union monetary policy. First, fiscal arrangements are a factor in the integration of union securities markets; second, fiscal decisions in part determine the union's monetary position vis-à-vis the outside world.

1. Integration of securities markets. The establishment of a union fiscal authority that could issue its own debt would be likely to contribute to the integration of union securities markets. Within a country, government securities, because of their standardization, low risk (assuming a stable government), familiarity, and large markets, are frequently sold in a single national market and form the basis for the integration of more broadly defined national securities markets. Not only is there a national market for the government securities themselves, but they indirectly integrate other markets through their substitutability with many other securities, many of which may not be directly substitutable with each other.[8]

The securities of national governments are less powerful in promoting integration of *union* securities markets. These national securities are not perfect substitutes; there are different risks, different national preferences, and imperfect information about other nations' securities, causing them in large measure to be marketed on separate national markets. A union fiscal authority, by contrast, could issue debt that was backed by the entire union, presumably subject to none of the national biases observed for the securities of national governments.

[8] Ingram (1959) has emphasized the importance of a government securities market in integrating securities markets across the United States.

The debt of the union fiscal authority would provide an additional channel for indirect integration of various other securities markets all over the union, as do the national securities in the national markets. There could also be coordination between the union monetary and fiscal authorities, enhancing confidence in the union securities. The degree to which a union security would promote integration of a union securities market would depend, of course, on how much fiscal authority was delegated at the union level, on the overall size of the market for these securities, and on the perceived stability of the fiscal arrangements.

A high degree of integration of union securities markets may be possible without the issuance of securities by a union fiscal authority. The evidence in recent years of increased international trading of both private and government securities suggests that this may be so. In the European Community, however, this integration has come about largely through integration of world, or international, markets, rather than through direct integration of the national capital markets of the Community. Integration via external markets has the effect, discussed in Chapter V, of weakening the monetary independence of the entire Community vis-à-vis the rest of the world.

There are two side benefits of a market in the securities of a "union government." The union monetary authority could conduct open-market operations in government securities without having to support one national government over another. And such securities would probably be more acceptable as an asset for intercountry settlement among the national banks of the monetary authority than would national-government or private securities. These are minor problems, however, that could be solved in other ways.

2. *Monetary relations with the outside world.* The limitations on the capacity of national fiscal authorities to carry out effective stabilization policies have been stressed. But to the extent that national fiscal authorities can conduct effective stabilization policies, or that the import leakages, which weaken national stabilization policies, are leakages into the outside world, there are problems for the union's international reserves or its external exchange rate.

A monetary union with a fixed external exchange rate needs international reserves to support the value of its currency. Permitting effective fiscal power at the national level allows for the possibility that one country's fiscal deficit can create a balance-of-payments deficit for the entire union. There is, then, an argument for either centralizing the

bulk of fiscal activity or closely harmonizing national budgets in order to prevent one or several countries from running down the international reserves of the union through their independent fiscal policies.

The problem of losing international reserves does not arise, of course, if there is a flexible exchange rate between the union and the outside world. The flexible exchange rate does, however, increase the spillover effects of national fiscal policies. An increased demand in one country for imports from the outside world, resulting from an expansionary national fiscal policy, depreciates the union currency and imposes expansionary, and possibly inflationary, pressures on the entire union.

These external considerations are not a problem if the national fiscal powers are relatively weak, particularly with regard to government purchases of imported goods and the ability to influence national product values. But strong fiscal policies in the areas of stabilization and redistribution will affect the union's external monetary policy. If the union wants strong action in these areas, considerations of external monetary policy alone may be justification for centralizing, or at least harmonizing, these functions in a monetary union.

VII. FEASIBILITY OF NATIONAL CREDIT POLICIES IN A MONETARY UNION

Credit policies, as defined here, are those policies that stimulate investment in certain sectors and that direct and channel savings flows through certain financial channels to favored sectors for investment. The distinctions between credit policy and monetary or fiscal policy are sometimes unclear or arbitrary.

As a part of their "monetary policy," for instance, many national central banks impose on their commercial banks various direct quantitative and qualitative controls, such as interest ceilings or prohibitions on holding certain kinds of assets. Controls such as these direct funds toward or away from certain securities markets and are thus defined here as credit policy; monetary policy is assumed to include only open-market operations, discount policy, and reserve requirements. By these definitions of monetary and credit policies, therefore, a national central bank that primarily used direct controls to influence the money supply would be described as conducting very little monetary policy and a great deal of credit policy.

Comparing credit policy with fiscal policy, policies to influence investment and saving fall into two major categories—those that encourage the *overall* level of investment and saving and those that favor *certain* types of investments and that channel credit through *certain* markets. The former are, by our definition, part of the stabilization function of fiscal policy; only the latter constitute credit policies.

Credit policies for investment fall into two further categories—those that favor certain types of investments but do not influence the investor's choice of financing and those that actually provide, or make more available, certain types of financing. Commonly used instruments of the first type are investment premiums, interest-rate subsidies, government guarantees of credit, and tax benefits to certain investors. The limitation of such policies is that, while they reduce the costs of certain investments, they do not guarantee the availability of financing. The investor is left to compete for funds on the private market. More direct incentives for investment are those in the second category. These include direct government loans; loans from special credit institutions, which are granted various privileges and tax relief; explicit directives to credit institutions as to the direction of their loans, sometimes accom-

panied by special facilities for rediscount with the central bank; and control of access to the capital market. These measures tend to isolate certain financial channels and reduce the integration of securities markets. Separate markets are created for what would otherwise be similar assets, and the substitutability between different types of assets is reduced, both within and between countries.

Incentives to encourage particular forms of saving similarly reduce the integration of securities markets, reducing the degree of substitutability or the domain of securities markets. They usually take the form of tax incentives or interest-rate premiums. Credit policies that direct the flow of savings through financial channels may influence the behavior of financial intermediaries as well as of savers themselves. Often, saving and investment policies are two aspects of a single credit policy, the favored financial channels for saving being those that direct financing to the priority investments.[1] Of interest here are the implications of such national credit policies for internal union monetary policy and the effect of a monetary union on national credit policies.

Effect of Credit Policies on Union Monetary Policy

National credit-policy instruments that promote investment in certain sectors without providing financing neither distort securities markets nor prevent their integration. Monetary policy is therefore not directly affected by these policies. The decision whether to designate a union authority or retain national authority for these credit-policy instruments is closely related to the question of fiscal authority for stabilization and redistribution. Investment incentives can shift investment away from some projects toward others; when national economies are closely integrated, such a shift may be from one country to another. To this extent, the investment incentives provided by the national governments can become a kind of "beggar thy neighbor" issue, raising the same kinds of problems as do nationally determined policies of sectoral assistance. Indeed, it is often impossible to say whether such investment incentives constitute credit policy or regional and sectoral assistance.

On the other hand, credit policies that provide financing for investment and that direct savings into particular channels reduce the integration of securities markets both within and between countries by

[1] This classification of credit policies can be found in the Segré Report (European Economic Community Commission, 1966, Chap. 5). This report points out that selective measures for the placement of capital and for the financing of investment can be serious impediments to the integration of capital markets.

diminishing the substitutability among securities. This isolation of particular credit channels is the purpose of such credit policies and may be more or less complete. Subsidies, tax benefits, or government guarantees may simply raise or lower the rate of interest in the special credit channels by some margin above or below the prevailing market rates on comparable uncontrolled securities. The favored rates of interest would still move in response to changes in monetary conditions as long as borrowers or lenders, or both, in these special credit channels had the alternative of using other securities markets.

In other situations, the credit policy may isolate the special credit channels more completely. A particular channel of financing is removed from the influence of monetary policy to the extent that the supply of funds will not be directed to other, more profitable outlets when market interest rates fall. A supply of funds to favored institutions can be assumed by taxation, by regulations or subsidies to savers that make other outlets uncompetitive or inaccessible, or by constraints of tradition or ignorance of alternatives that prevent savers from turning to other channels. Direct government loans financed by taxes, for instance, need not respond at all to changes in monetary conditions.

The existence of such special credit channels, isolated to a greater or lesser degree from the influence of general monetary conditions, limits the scope of monetary policy and its ability to influence the economy. Lack of integration between the special credit channels and the uncontrolled securities markets means that monetary policy will primarily affect the uncontrolled markets.

When a nation controls its own monetary policy, such limitations of monetary influence may be quite consistent with the country's overall economic policy. For a monetary union, however, national credit policies create a problem when nations of the union differ widely in their use of these policies. Monetary policy then has a stronger influence in countries with relatively weak credit policies. To the extent that the uncontrolled markets are integrated across the union, the interest rates on securities that are not subject to credit policies tend to be equalized across union markets. In countries that rely primarily on market mechanisms for the allocation of credit, the entire interest-rate structure of the country will change, and monetary policy will affect all sectors of the economy. By contrast, in the countries with strong credit policies, the special credit channels remain relatively unaffected, while the interest rates in the uncontrolled markets move no more than in other countries. Furthermore, as long as the uncontrolled securities markets are integrated across the union, the union monetary authority has little

or no control over the distribution of the union money supply. One would expect, *a priori*, that an increment of new money would be held primarily by the countries with weaker credit policies, as their demands for money would be responding to a general, rather than a selective, decline in interest rates. Both in the spectrum of interest rates affected and in the distribution of the money supply, therefore, monetary policy would be expected to have stronger impacts where credit policy is weaker.

The usual remedy for uneven impacts of monetary policy resulting from the isolation of particular securities markets would be for the monetary authority to act directly on the isolated markets. When the nonintegration of certain credit channels is due to national credit policies, however, such a response by the union monetary authority may be impossible. It would certainly be inconsistent with effective national credit policies, for the separation of certain sectors from general monetary conditions is the *raison d'être* of credit policies.

Another way to exert equal monetary influence across countries in the face of national credit policies would be for the union monetary authority to conduct offsetting credit policies, such as the imposition of capital controls between countries, creating separate national markets for all securities. This would allow the monetary authority to influence the distribution of money and the relative impact of monetary policy among countries. Although the monetary authority would still be limited to acting on the uncontrolled markets, it would have the option of putting differentially strong pressures on markets in countries with strong credit policies. But such a solution would have all of the disadvantages inherent in conducting monetary policy in nonintegrated securities markets, plus the costs of enforcing the capital controls.

The limiting and distorting effects of national credit policies on union monetary policy constitute a strong argument for either centralizing the authority to conduct credit policies or closely coordinating national credit policies. There is a real conflict when the nations of the monetary union differ strongly in their philosophies about such credit policies and at the same time wish to benefit from union-wide integration of securities markets and to conduct an equitable union monetary policy. One of these goals must be compromised.[2]

[2] Paul Woolley (in Denton, 1974) suggests the unworkability of national credit policies in a monetary union. Moreover, he points out that, if the union monetary authority includes the term structure of union interest rates in its targets, and if

Effect of Monetary Union on National Credit Policies

The effectiveness of national credit policies in directing investment depends upon the government's ability to isolate certain credit channels. When encouraging priority investment through relatively low-cost financing, the government must be able to assure a flow of funds. If depositors to this credit channel can easily turn to substitute assets, the government will find it difficult to continue its low-cost financing when market interest rates are high. Alternatively, if low-priority investors can easily find other financing, the government is limited in its ability to redirect investment. Generally, a strong national credit policy depends upon isolation of the national credit markets, probably through capital controls. A high degree of international integration of securities markets makes a strong national credit policy difficult to enforce.

Monetary union can be expected to contribute to the integration of securities markets within the union. The removal of exchange-rate risk alone encourages securities transactions across national borders. Furthermore, as argued in Chapter IV, it is in the interest of the monetary authorities to promote various measures that will increase such integration. The national financial isolation that contributes to effective national credit policy is inimical to a workable monetary union.

Potential for National Credit Policies in a European Monetary Union

The members of the European Community differ considerably in their use of credit policies, reflecting widely differing views on the desirability of government planning and direction of the economy's growth. France has the most pervasive credit policy. A number of special credit institutions in France grant low-interest loans to favored investors. These institutions are guaranteed a supply of low-cost funds from the savings banks and the postal giro. Small savers continue to place their savings in these accounts because of perceived or actual lack of alternatives, even though the rates of interest are uncompetitively low. The policy is effective because the French government controls a large proportion of the French capital and money markets and strictly regulates international capital flows. Such policies are in sharp contrast to those of Germany, for example, which relies largely on market mechanisms to allocate credit.[3]

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there is a union system of queuing for access to the credit markets, there is a conflict with national policies of debt management.

[3] For descriptions of the money and credit systems of countries of the Community, see European Communities (1973a), Forrest (1974), and Hodgman (1974).

The establishment of a European monetary union would mean minimally that France would lose control over many financial flows in and out of France, since the union monetary authority would regulate the commercial banks. This alone would probably seriously diminish the control of the French government over credit flows within France by providing both borrowers and lenders in France with new alternatives. Moreover, the existence of strong credit policies in some countries, such as France, along with the almost complete dependence in other countries, like Germany, on the market mechanism for credit allocation, would mean that union monetary policy would have relatively little effect in France compared with its effects in Germany. To the extent that adjustment to intra-union payments imbalances presented economic costs, the burden of adjustment and its ensuing costs would be borne primarily by the "non–credit policy" countries like Germany. If the Community ever forms a monetary union, therefore, the member countries will have to recognize that there can no longer be national credit policies that direct credit through certain channels. Any such policies will have to be determined at the Community level and administered for the Community as a whole.

Credit policy, even at the union level, would of course reduce the integration of securities markets and the advantages that such integration brings to the monetary union. For this reason, the discussion of union monetary policy has not included the possibility that the union monetary authority might try to control the union money supply and its impacts through direct quantitative or qualitative controls. A union monetary authority might want to apply such direct controls, however, if the union placed a strong value on the regulation of credit flows to certain sectors of the union. The benefits from such union credit policies would have to be weighed against the losses to the monetary union from the reduced integration of securities markets.

While a monetary union implies complete loss of *national* monetary independence, in the sense of an independent central bank, there remains the possibility that the national governments might own some of the commercial banks or financial intermediaries, as they do now in some European countries. Government-owned commercial banks would, of course, be liable to regulation and control by the union monetary authority in the same manner as privately owned commercial banks. The issue would be whether these banks were the instruments of a national credit policy. If government-owned commercial banks and financial intermediaries were to channel credit to favored indus-

tries or were to buy the national government's securities in the face of contrary market incentives, such practices would reduce the integration of securities markets and weaken the influence of union monetary policy in that country. On the other hand, if the government-owned commercial banks and financial intermediaries were to respond to market pressures in the same way as competitive privately owned banks and intermediaries, the fact of government ownership would present no problem for the monetary union.

The same can be said for government production of nonpublic goods and services (other than financial services), such as government airlines and railroads or government oil or steel corporations. Examples of government companies or industries can be found in most countries of the European Community. As long as these government industries were granted no special financing, tax credits, or subsidies, national government ownership would not be a question that is particularly relevant to the concerns about a monetary union. To the extent, however, that the national government provided special financing or direct subsidies to these government industries, the questions of national credit and redistribution policies would arise in the same manner as if such measures were granted to privately owned industries.

VIII. CONCLUSIONS

The preceding chapters have examined different aspects of the organization and administration of a monetary union. All have contributed to the general conclusion that the unification of monetary policy is enhanced and made easier if, at the same time, other economic policies are centralized and national divisions are reduced. Problems of a union monetary policy are allayed if monetary policy is regarded as an aggregate union-wide instrument, if it can be administered in a setting of securities markets that are highly integrated within the union, and if there is a lack of concern about the resulting flows of money through payments imbalances among member countries. With the resulting loss of monetary policy as a regional policy tool, along with the probable weakening and potential conflict of national fiscal policies, there is a need for some power at the union level to alleviate interregional adjustment problems. The task of administering union monetary policy is thus further simplified if significant fiscal powers for redistribution and stabilization are centralized. Moreover, national credit policies reduce the range of influence of union monetary policy and have the potential for distorting its impacts unless they are applied in accordance with union-wide criteria.

It follows that the ideal organization for administering a monetary union is a single union monetary authority responsible for aggregate monetary conditions in the union, operating in well-integrated capital markets, and supported by a centralized union fiscal authority that has responsibility for stabilization, redistribution, and credit policy within the union. This is a description of the United States. These factors may be as important in explaining why monetary unification works so smoothly in the United States as the integration of its markets for goods and services.

These goals are much easier to attain, of course, when the boundaries of the monetary union coincide with those of a single country than when the union is composed of several countries, each with its own national institutions and desires to retain various degrees of national autonomy. In the latter case, many of the conditions that are conducive to the smooth administration of the monetary union may be difficult to attain, or may be considered for other reasons to be undesirable goals. In a monetary union composed of independent countries, there

is a certain amount of unavoidable conflict between the need for union authority and the desire for national autonomy.

At the outset of this study, I defined the minimal requisites for a monetary union and predicted that a union that met only the minimal requirements would probably not survive. This does not say that a monetary union must possess all the characteristics that have been described as ideal for the administration of monetary policy. To the extent that these desirable conditions are not met, however, there are likely to be costs for the union in the forms of greater adjustment problems, lack of strong economic instruments at any level, and conflicts between national and union interests. The importance to a particular monetary union of any given characteristic depends upon the conditions peculiar to that union at that time and upon how much the member countries demand of the union and of themselves. Countries considering the formation of a monetary union should be aware of these likely conflicts and trade-offs and should take them into consideration when deciding whether to form a union and defining its ultimate form.

There is also the implication here that an optimum currency area is defined in part by political attitudes.[1] Of two groups of nations exactly alike in economic factors but differing widely in their willingness to submit to union-wide goals and to centralize authority for economic policies, only one may be a good candidate for a monetary union. For the other group, the costs and difficulties of a monetary union may exceed the gains because of its members' insistence on retaining national prerogatives. This is a recognition of the need not simply for political *motivations* for monetary union but, rather, for the appropriate political *attitudes* if the economic burdens of a monetary union are not to be too great.

There is no question that the European Community today falls far short of meeting the ideal conditions for an economic and monetary union. Moreover, while the Commission continues to avow its intentions of moving toward economic and monetary union, there is considerable doubt whether the necessary political will exists among the member governments.

There appears to be general recognition in the European Community now that economic and monetary union must be a rather distant goal. The recent Commission Study Group on Economic and Monetary

[1] Considerations of political integration in a monetary union are discussed by Joseph Nye in Krause and Salant (1973).

Union 1980 (European Communities, 1975a, p. 29) reported that "it was not possible at this time to draw up a sufficiently credible plan for economic and monetary union," and the Commission's report on European union (European Communities, 1975c, p. 9) stated that the Commission has not yet felt able to make really concrete suggestions in the area of the institutional structure of European union. There is evidence, moreover, of less concentration on the measures to achieve monetary union first and a recognition of the need to work initially on other areas. The Commission Study Group, for example, recommends work on a new industrial program, on a European energy authority, on liberalization of capital movements within the Community, and on expansion of the functions of the Community budget. Such measures would point toward the establishment of the conditions that this study suggests may be essential for a successful and workable monetary union. If the Community is unable or unwilling to integrate and unify a broad spectrum of its institutions and policies along the lines suggested here, it is doubtful whether it should pursue a goal of European monetary union.

It would be inappropriate, however, to end this study on a pessimistic note regarding the prospects for economic and monetary union in Europe. Seldom does any area meet all the requirements for an "optimum policy area."[2] If the European Community moves from the national to the supra-national level for purposes of economic and monetary policies, such a move will probably stem from a recognition that the existing degree of economic interdependence has eroded effective national economic sovereignty and that economic, monetary, and, to some degree, political union is preferable to the alternative of reducing economic integration and returning to autarchy.[3] Regional and national differences will undoubtedly remain, necessitating provisions for regional policies. While the Community's situation today in many ways appears to be a step backward from its position of a decade ago, one might also view it as a recognition of reality, of the complexities inherent in moving toward economic and monetary union. Such an understanding is a prerequisite for any real and lasting progress.

[2] The concept of an "optimum policy area" has been put forth by Whitman (1972). She takes account of the probable need to conduct certain functions of fiscal policy at the same level as monetary policy, and strives to incorporate a complex and sometimes conflicting set of factors into the criteria for an optimum policy area. Sovereignty, she suggests, is a necessary but not sufficient condition.

[3] This was the point made by Cooper (1968) in his study of interdependence in the Atlantic Community.

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