

BANCA D'ITALIA

Temi di discussione

del Servizio Studi

**Progressing towards European Monetary Unification:
Selected Issues and Proposals**

by Lorenzo Bini Smaghi



Numero 133 - Aprile 1990

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The purpose of the «Temi di discussione» series is to promote the circulation of working papers prepared within the Bank of Italy or presented in Bank seminars by outside economists with the aim of stimulating comments and suggestions.

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Abstract

The paper discusses selected issues related to monetary unification that the Delors Report addressed only implicitly. The first issue treated in the paper is the objective of monetary unification itself, the conditions and ways to achieve it. The second issue regards the institutional developments required for a smooth transition towards monetary unification. Finally, the paper examines the conditions under which the existing national currencies can be substituted by a common currency, so as to bring about the full realization of monetary unification.

Contents

I.	Introduction and summary	p.	5
II.	European monetary union		
	1. Is monetary union a reasonable objective for the near future?	"	10
	2. Monetary union with one or many currencies?	"	17
	3. Which single currency?	"	23
III.	The Supply Side: institutional development towards a common monetary policy		
	1. Introduction	"	28
	2. Monetary policy in a monetary union	"	29
	3. The present situation in the EMS (stage I) and proposals for increased cooperation	"	35
	4. An institutional scheme for a common monetary policy	"	45
V.	The Demand Side: market development towards a common currency		
	1. Introduction	"	60
	2. The development of the ecu market	"	61
	3. Problems and opportunities deriving from the market development of the ecu before full monetary unification	"	67
	Appendix	"	70
	References	"	75

I. Introduction and summary¹

The Treaty of Rome did not explicitly mention the creation of a European Monetary Union (EMU) as an objective of the European Community. However, in the course of the years, as economic integration progressed, member countries became increasingly aware that the benefits could not be fully internalized in the absence of a high degree of monetary cohesion.² During the sixties such cohesion was implicitly assumed to be provided by the Bretton Woods fixed exchange rate regime. However, the inherent instability of that system made European countries realize that the responsibility for ensuring monetary stability in Europe could not be left to others.³ In December 1969 the Heads of State and Government of the European Community appointed a Committee headed by Mr. Pierre Werner, the Luxembourg Prime Minister, to prepare a report on the creation of an economic and monetary union. This report was delivered in 1970; a specific plan for monetary integration in the Community was proposed. However, the plan was never implemented and the

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1. Discussions and exchanges of views with I. Angeloni, P. Bofinger, W. Branson, B. Friedman, D. Gros, F. Papadia and other colleagues in the Research Department of the Banca d'Italia helped to sharpen some of the ideas expressed in the paper. I also benefitted from the comments of W. Rieke and an anonymous referee. I wish to thank V. D'Ambrosio for editing the numerous versions of this paper and J. Smith for kindly reviewing the English version. I remain the sole responsible for the errors and opinions.
 2. For a historical perspective on the efforts to foster monetary integration in the EEC see Bloomfield (1973).
 3. This concern had emerged earlier in the literature. For instance, Triffin, in proposing the reform of the international monetary system, considered that "a number of factors specific to the Community itself must be taken into account for the shaping up of its future monetary policies and institutions" (1960, p. 131).

project of monetary unification was lost in the turmoils of the seventies.⁴

Twenty years later, including ten of successful experience with the EMS, the issue of monetary union appears to have reacquired high priority in the European agenda.⁵ With the adoption of the Single European Act in 1985, the objective of economic and monetary unification was inscribed in the Treaty.⁶ At its meeting in Hannover in June 1988, the European Council entrusted a Committee, chaired by Mr. Jacques Delors, President of the EC Commission, with "the task of studying and proposing concrete stages leading towards this union". The Report (henceforth Delors Report) was submitted to the Heads of State and Government in April 1989.⁷ It addressed the broad issues involved in the unification process and the advances to be made at the various stages in both the monetary and the economic fields. It also examined certain institutional features of the union, in particular the creation of a European System of Central Banks.

At its June 1989 meeting, the European Council decided to go along with the first stage of the union, as defined in the Delors Report, to start by July 1st 1990. New Council Decisions have been adopted to strengthen the economic and monetary policy cooperation among member

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4. The creation of the snake in 1972 cannot be considered as part of a monetary unification project, since it represented only an agreement for limiting the bilateral exchange rate fluctuations of a group of certain currencies.
 5. The literature on European monetary integration burgeoned in the meanwhile: see among others the proposals of Krause and Salant (1973), Fratianni and Peeters (1978) and Vaubel (1978).
 6. In particular Article 102A, chapter I, title II (Economic Policy).
 7. Committee for the Study of Economic and Monetary Union (1989).

countries. In December 1989 the Heads of State and Government of the Community decided to convene the intergovernmental conference for the modification of the Treaty in view of the further stages of the union.

The present paper deals with selected issues related to monetary unification that the Delors Report addressed only implicitly. The paper concentrates mainly on monetary aspects, leaving aside other issues such as the degree of fiscal policy coordination needed in a monetary union which, although discussed at length in the Report, still require further thorough analysis.⁸

The first issue treated in this paper is the objective of monetary unification itself. The Delors Report states that "the move towards economic and monetary union represents a quantum jump which could secure a significant increase in economic welfare in the Community" (p. 6-7). On the other hand it has been argued⁹ that the Community is not yet an optimal currency area, and is therefore not ready for monetary unification. The following chapter examines, in the light of the literature on Optimal Currency Areas, why monetary unification appears to have become a reasonable objective for the next few years and why such an accomplishment is closely related to the implementation of the internal market. In particular, it is stressed that even if factor mobility is not perfect, adjustment to exogenous disturbances may be inefficient if accommodated through changes in exchange rate parities. Another issue is the extent to which a monetary union can be fully achieved by means of so-called "irrevocable fixity of parities", rather than the adoption of a single currency. The Werner report reckoned that the elimination of the margins of fluctuation and the definitive locking of parities would be sufficient to

8. There seems to be wide ranging opinions on this issue. I expressed my own in Bini Smaghi (1989).

9. See for instance Goodhart (1989).

provide monetary unification. The Delors Report now asserts that "the adoption of a single currency, while not strictly necessary (...), might be seen as a natural and desirable further development of the monetary union" (p. 10). In this paper we examine whether the adoption of a single currency may not be only desirable but actually essential for monetary union. In the third section of chapter II we address the issue of which money should be used as the common currency. The Report only states that "the ecu has the potential to be developed into such a common currency" (p. 26). We examine whether there are possible alternatives for the role of common currency.

Monetary unification and currency unification are two formally distinct but closely interrelated processes. The former involves the unification, through discrete institutional changes, of national monetary policies. The latter requires the adoption by Community residents of a single common currency for the customary uses of monetary denomination. These two aspects are examined in chapters III and IV.

Chapter III considers the process of monetary policy unification. The Delors Report outlines the main institutional features of the monetary union. In particular it envisages a specific status and well-defined objectives for the European System of Central Banks (ESCB). In the paper we formulate a common policy framework that could be adopted at an early stage of the unification process, even before exchange rates are locked. The adoption of such a framework requires a modification of the Treaty, but does not imply an immediate jump to the final stage of the union. In the final stage the National Central Banks (NCBs) would be merged with the ESCB. This approach is based on the same principles as thirty years ago underlay the birth of the Deutsche Bundesbank, with the merger of the Ländeszentralbank and the Bank deutscher Länder. Although the merger itself is in our case planned for the last stage of the unification process,

the main features of the ESCB are put in place at earlier stages. This mechanism would represent the main foundation for the conduct of monetary policy in the Community throughout the transition towards full monetary unification.

In our approach, after the ESCB is created, at the beginning of stage II, its functions and structure would be gradually developed to meet the requirements of the unification process. Initially, the asset and liability structure of the ESCB would be the result of an accounting device, associated with a double reserve requirement mechanism; separate NCB entities would be maintained. The role of the ESCB would initially be to coordinate, through specified mechanisms, the policies implemented by the NCBs. Particular attention would be devoted to the targeting of the domestic credit component of NCBs' assets and the joint monitoring of underlying fundamentals in the Community. As monetary cohesion increased the main features of the ESCB would be strengthened, leading to a fully unified monetary policy in the Community.

Chapter IV analyzes the conditions under which the existing national currencies can be progressively substituted by a common currency using mainly market mechanisms. At present the ecu is only an inside money; as such, its development cannot jeopardize monetary stability in the Community. On the contrary, since the value of the ecu is closely linked to that of its component currencies, its further development can only occur in parallel with greater exchange rate stability in the ERM.

II. European monetary union

1. Is monetary union a reasonable objective for the near future?

Answers to this question are generally given in terms of optimal currency area theory. The literature suggests three main general criteria for identifying an optimal currency area: i) factor mobility; ii) integration; iii) risk sharing. On the basis of none of these criteria can it clearly be stated that the Community is an Optimal Currency Area (OCA), nor that it will ever be one. However, the traditional OCA concept is of little help in answering the question of whether a monetary union is a reasonable objective for the EEC.

Mundell (1961), resuming the debate between Meade (1957) and Scitovsky (1958), identified factor mobility as the main prerequisite for a monetary union. The idea underlying the requirement of factor mobility is that with a common currency it may be difficult to adjust shifts in the distribution of demand from the goods produced in one region to those of another region through changes in relative prices without major changes in employment levels. If wages are uniform within the union, equilibrium would then be restored only through migration of labour from low to high employment region.

The use of international factor mobility as a criterion for defining an optimal currency area involves two types of problem. Firstly, it is "most usefully considered a relative rather than an absolute concept, with both geographic and industrial dimensions, and is likely to change over time with alterations in political and economic conditions" (Mundell, 1968, pp. 182-183). Moreover, the Community is hardly comparable with the theoretical models

examined in the earlier literature since wages are not uniform across member countries, and, further, nearly all member countries produce much the same goods and services. Shifts in demand from one product to another produce differentiated effects on member countries' income and employment only to the extent that production and consumption intensities differ. In this case a more sensible criterion becomes the degree of internal (rather than external) price flexibility or cross-sector factor mobility, in particular between the tradable and non-tradable sectors, as pointed out by McKinnon (1963).

The second criterion for an OCA is that currency unification should be preferable among countries whose agents' consumption basket consists mostly of tradables, since purchasing power could thereby be protected with assets denominated in the common currency rather than through foreign investment.¹⁰ The EEC countries have become more and more integrated and their structure more similar, suggesting that the second requirement is increasingly satisfied. In all member countries, over 50 per cent of external trade occurs with the rest of the Community, with figures above 70 per cent for Belgium, the Netherlands and Ireland; this proportion has risen in the eighties, and will probably continue to rise in the next few years, especially in the service sector, in view of the expected effects of the 1992 internal market program.

However, the degree of integration among economies should not be measured only in terms of the ratio of intra-EEC trade to consumption or production, as is often done in the literature, but also in terms of the homogeneity of countries' production and consumption structures. If member countries' economies have homogeneous structures of production and consumption, they will tend to display strong common developments and similar reactions to external shocks

10. See also Laffer (1973).

even if trade flows among them are small. In practice disturbances are mostly of a sectoral nature: Stockman (1987), examining seven European economies, found that cross-country sectoral correlations of production patterns are larger than national cross-sectoral correlations. This would imply that the member countries' economies tend to react differently at an aggregate level to common sectoral shocks only to the extent that they have a different sectoral structure of production and consumption. For instance, a general reduction in the demand for automobiles will affect income in nearly every European country, but with a different intensity given the different relative importance of car production.¹¹ In this respect the Community is much more integrated than the US on the production side, each country being less specialized than the US are.

Differences do nevertheless exist, especially with regard to the latest entrants. The changes in the relative prices in the various countries that would be required to adjust for shifts in relative demand across sectors, may not be easily brought about through market mechanisms if exchange rates are not allowed to move. In the absence of cross-sector price flexibility, sectoral changes in employment would affect national levels of employment differently, depending on differences in the composition of national output.

When market rigidities do exist, the optimal response to a differentiated sectoral shock is not to change the exchange rate but to impose a tariff or subsidize employment in that specific sector. However, recourse to such first best responses is no longer possible at the national level, since the related powers have been transferred to the Community level. With the Single Act the member states of the Community have implicitly renounced the use of nation-specific policy instruments to modify resource

11. This conclusion is also reached by Cohen and Wyplosz (1988).

allocation among sectors and/or affect competitiveness among producers residing in different regions, accepting instead to rely on intervention policies decided and implemented at the Community level.

In reality, the sectoral allocation of resources in the Community is not left only to market mechanisms. The Common Agricultural Policy regulates prices and incomes directly. In the energy sector, where prices are much more flexible, there is also a common (net of tax) price policy. In the manufacturing sector the Community has a strong impact on resource allocation, especially in declining industries, but also in high technology and research-related fields. In all these sectors national authorities have relinquished part of their autonomy in favour of a common European policy of resource relocation.

On the other hand, the Community is moving to increase the flexibility of market mechanisms. This choice is clearly reflected in the creation of the internal market and the removal of all barriers to trade and factor mobility. The objective is to implement a level playing field for all market participants and eliminate any remaining discrimination between transactions undertaken among residents of the same country and between residents of two different member countries.

Overall, with the implementation of the internal market and the strengthening of its structural policies, the Community appears clearly committed to establishing conditions that would bring it closer to an optimal currency area than it is at present.

In this context, using exchange rates to modify the relative value of national currencies would be an inefficient and distortionary way to promote adjustment, and conflicts with the fundamental choices made by the Community with the creation of the internal market. Movements in nominal exchange rates influence relative prices and affect the competitive position of producers located in different

countries, independently of their sector of activity; if unexpected, these changes may bring unjustified gains or losses for producers or consumers.¹² The possibility of exchange rate changes would also tend to reduce the degree of factor mobility in the Community, thereby hindering the main objective of the internal market.¹³

In this context, the exchange rate can be seen as an instrument of commercial policy,¹⁴ producing precisely those inhibiting effects on trade flows and factor mobility that the Single Act seeks to eliminate.¹⁵ The fact that national authorities retain fully exchange rate autonomy is incompatible with the internal market. Finally, even if exchange rates were only modified to compensate, ex-post, for

12. The recent literature on the effect of exchange rate changes on international trade has pointed out the possibility of hysteresis deriving from changes in international competitiveness, by which temporary disturbances in relative prices produce permanent effects on trade flows. See Baldwin (1988).

13. Bertola (1988) examines this issue analytically.

14. Mussa (1986b) formally analyzes the well known fact that the exchange rate is an instrument of commercial policy. "Despite the fundamental difference between the prime mission and basic purpose of nominal exchange rate adjustment and commercial policies, it has long been recognized that exchange rates can, in certain circumstances, be manipulated to affect relative commodity prices and thereby replicate many of the effects of commercial policy" (p. 43). See also Bliss and Joschi (1987).

15. Laffer (1973) explained that "flexible exchange rates impose a severe cost on the arbitrage of money across national boundaries" and therefore, "qualitatively, the effects of the prohibition of trade in money are the same as the effects of the prohibition of trade in any commodity" (p. 33).

consumer price inflation differentials across countries,¹⁶ sectoral distortions in competitiveness would still arise in view of the different speeds of adjustment in different markets, in particular between tradables and non-tradables. Further, exchange rate instability would put inflation discipline under serious strain. The EMS has shown that policies aimed at stabilizing nominal exchange rates are effective in fostering price convergence. Misalignments of real exchange rates can be avoided by disciplining domestic prices and costs rather than systematically accommodating the nominal exchange rate.¹⁷

The literature also considers risk sharing as a criterion for currency area optimality. According to Laffer (1973), the lower the correlation between country specific shocks, the more a common currency will facilitate adjustment and the financing of cross-regional imbalances.

In spite of the relative stability of real exchange rates in the EMS in recent years, large imbalances have emerged, primarily as a result of two main factors. The first is the divergence in member countries fiscal policies, especially during the first half of the eighties: while some have reduced their budget deficits, others pursued more expansionary fiscal policies. This divergence causes strains in intra-EMS exchange rates.¹⁸ The second factor is the

16. Such a rule was proposed in the Optica Report presented to the EEC Commission (1977). See also Fratianni and Peeters (1978). It should also be noticed that this type of rule may have severally adverse macroeconomic effects as shown in Dornbusch (1982).

17. See Masera (1987) and Ungerer (1986). The literature on this field has shown quite convincingly that real exchange rates are much more variable in a flexible than in a fixed exchange rate regime. For a thorough empirical analysis see Mussa (1986a).

18. Buiters (1986) analyzes the effects of fiscal policies on exchange rate stability. The issue of fiscal divergence in the Community is examined in Bini Smaghi (1989).

disparity in external performances in the eighties. While Germany, the Netherlands and Belgium, accumulated growing current account surpluses, France, Italy and the UK saw their external payments position deteriorate. These imbalances are even more striking when only intra-EEC transactions are considered. The analysis of their determinants points to the differences in member countries' saving-investment patterns.¹⁹

These imbalances are a threat to the monetary cohesion of the Community because they determine an excess supply of financial assets denominated in certain member currencies and an excess demand for others. The imperfect substitutability among the various currencies made a widening of interest rate differentials necessary in order to finance these disequilibria.²⁰ This is hardly sustainable in the longer run, and expectations of the exchange rate being used to ease external adjustment cause market participants to revise their portfolio composition, thereby generating speculative tensions in foreign exchange markets.²¹

The creation of an integrated monetary area, with a centralized independent monetary institution and a single currency, would facilitate the financing of real

19. Bini Smaghi and Vona (1988, 1989) found that the diverging domestic demand growth performance of member countries is a major determinant of intra-EMS trade imbalances.

20. In fact, in the last few years interest rates, adjusted for price and exchange rate changes, have been higher in France, Italy and the UK than in Germany and the Netherlands. See Bini Smaghi (1989) and Bini Smaghi and Masera (1987).

21. On the long-run effects of financial imbalances on exchange rates, see Galli and Masera (1988).

imbalances.²² If all the assets issued in the area are denominated in the same currency, their degree of substitutability increases. The accumulation of net debt in certain regions of the area would not represent per se a risk for monetary stability;²³ the rate of interest on financial assets would not depend on the issuer's residence but only on his expected solvency.

Monetary integration would, of course, only help solve part of the financing problems, it would not eliminate regional disequilibria arising from real divergences. This would require parallel progress in the field of economic integration, as recognized in the Delors Report.

In summary, the issue of European monetary unification goes beyond that of optimal currency areas. A further important dimension needs to be considered. By undertaking to create an internal market by 1992, the Community has started a process of economic integration in which the benefits of monetary union tend to overcome the costs. Moreover, the full benefits of economic integration will not be obtained without monetary unification. Economic integration unaccompanied by monetary integration may prove unsustainable in the long-run.

2. Monetary union with one or many currencies?

In the Werner Report the concept of monetary union implied the satisfaction of four conditions: the full and

22. This has been made clear by Mundell (1973) in his analysis of a hypothetical world consisting of two regions, Cancer and Capricorn, in which the common money performs the function of risk sharing.

23. This holds especially for private agents. The excessive accumulation of debt by national budget authorities may represent a threat to the monetary stability of the whole area.

irreversible convertibility of currencies, the complete liberalization of capital movements, the elimination of fluctuation margins for exchange rates and the irrevocable locking of parities. The adoption of a single currency was considered as a technical option of secondary importance. The first two conditions are already met by the Single Act and the Community directives on the liberalization of capital movements. This section addresses the issue of whether the acceptance of the other two conditions is sufficient for the creation of a full monetary union or whether the adoption of a single currency is also required.

The objective of a monetary union is to enhance the usefulness of money, by simplifying accounting, facilitating the acquisition and use of information for transactions and promoting the integration of markets.²⁴ This can be achieved by making the existing currencies perfectly substitutable in the threefold function of money as unit of account, means of payments and store of value, so that they become different denominations of the same money.²⁵ In the following, we question whether the mere removal of fluctuation margins and the irrevocable fixity of parities is sufficient to ensure perfect substitutability, and therefore full monetary union.

To ensure perfect substitutability with respect to each and every function of money, transactions among private individuals must be allowed to occur in all the existing monies. For the unit of account function to be fully satisfied, legal tender status would have to be granted to all Community currencies and national governments could have to be willing to make and receive all payments in the

24. The analysis of the characteristics of a monetary union have been examined in particular by Mundell (1961), McKinnon (1963), Kindleberger (1972), Tower and Willett (1976).

25. For an examination of this issue, see Gros (1988).

currency chosen by private counterparts.²⁶ This solution would be inefficient, however, since it requires agents to quote prices and accept payment in all twelve currencies.

A prerequisite for the existing currencies to be perfectly substitutable in the means of payments function is that their rate of exchange be the same over the whole area. Further, the exchange of currencies should not involve transaction costs that create a wedge between buying and selling rates. The elimination of fluctuation margins might be sufficient to ensure the homogeneity of official exchange rates, but not that of retail rates since foreign exchange operators are likely to charge a cost for the service they perform, unless they are subsidized by the official authorities. These costs are likely to vary depending on the size of the transaction,²⁷ and across the various regions, thereby altering the degree of substitutability among currencies.²⁸

In the end, it is highly unlikely that the currencies will become perfect substitutes for payment purposes. The information and transaction costs involved in dealing with eleven currencies would be extremely high, and people's habits would in any case be very slow to adjust. It is worth recalling, for example, that even now it is not always easy to pay in Scottish pounds in England.

Finally, considering the store of value function,

26. This condition, which by the way also has to be satisfied if the mechanism of currency competition proposed in HMT (1989) is to function correctly, would entail complete transferal of monetary sovereignty, including the allocation of seignorage.

27. Bid-ask spreads tend to be quite large for retail transactions, thereby reducing the degree of substitutability in the means of payment function.

28. Consequently, even a scheme that separated the unit of account function, which would be common, from the means of payment function, which would remain in national denominations, would not ensure perfect substitutability.

assume the equilibrium relationship:

$$(1+R_t^*) E_t (S_{t+1}/S_t) - (1+R_t) = \rho_t$$

where R_t^* and R_t are the rates of return on foreign and domestic assets, denominated in their respective currencies; S_t is the exchange rate and E_t the expectation operator. Assets are perfectly substitutable if there is no risk premium associated with holding one rather than the other, i.e. if the change in their relative outside supplies does not call for equilibrating changes in their rates of return.²⁹ Perfect substitutability therefore requires that $\rho_t=0$ and, also, with fixed exchange rates, that $E_t(S_{t+1}/S_t)=1$, i.e. that exchange rates are expected to remain unchanged over time.

Currency substitutability is therefore an ex-ante concept that defines an equilibrium condition in the domain of private agents' transactions. The fixity of exchange rates is an ex-post concept; it does not by itself necessarily guarantee currency substitutability. Consequently, the commitment to fix exchange rates may not be sufficient to make market participants indifferent as to the currency they use in their transactions. Several factors may prevent this.

First, history has shown that there is no such thing as the irrevocable locking of exchange rates. All fixed exchange rate regimes, even those implemented through international treaties, have broken down in the end. As long as individual countries retain the ability to change the value of their currency, they may be tempted to do so, even though this entails breaking international agreements. History shows plenty of cases in which such authority has

29. See Hodrick (1987) and Giovannini (1989).

been exercised in contrast with previous engagements.³⁰

Further, the viability of a fixed exchange rate system depends on the evaluation of the costs and benefits for individual countries.³¹ This evaluation may vary over time, depending on economic conditions and the priorities of national governments. A system of fixed exchange rates does not hedge against the risk that a temporary change in the evaluation of the costs and benefits may lead one of the participating countries to abandon the system,³² even if only for a short period. The relatively high degree of decentralization of policy decisions prevailing as long as national currencies still exist keeps the cost of abandoning a fixed exchange rate system, or even of simply changing the parity, relatively low compared with that of opting out of a single currency system.

Finally, a fixed exchange rate system with many currencies needs a common anchor, which is generally represented, as in the Bretton Woods and EMS cases, by the monetary policy of the hegemonic country.³³ The system displays a natural tendency to become asymmetric, and to base its discipline on that of the hegemonic country.³⁴ However, asymmetric systems, in which the periphery has little

30. In fact, treaties are always drawn up with safeguard clauses that allow countries to opt out in certain circumstances.

31. Cesarano (1985) examines the concept of the viability of a Monetary Union. See also Hamada (1977 and 1985).

32. This argument is similar to that used in the rules vs discretion literature, in which the optimal policy solution is derived from the equalization at the margin of the temptation to break the rule and the cost of doing so. See Barro and Gordon (1983) and, with reference to the EMS, Giavazzi and Pagano (1988).

33. This problem follows directly from the classical "redundancy problem" analyzed in particular by Mundell (1969).

34. See Eichengreen (1986).

control over the policy of the centre, tend to be rather fragile.³⁵

In fact, even if the fixity of exchange rates is accompanied by the creation of a monetary institution in charge of coordinating or centralizing monetary policy decisions so as to ensure the uniformity of monetary conditions required for the sustainability of the fixed exchange rate system, it would still not be totally impossible for national government to modify exchange rates.³⁶ In every country the responsibility for setting the external value of the currency lies with the national government and not with the central bank. The creation of a European central bank, even if it were fully autonomous, would not be sufficient to exclude the possibility of countries not satisfied with its policies having recourse to some legal artifact to modify the exchange rate of their currencies. In fact, this possibility might become an instrument for influencing decisions taken by the European central bank and thereby limiting its autonomy.

In summary, a system of fixed exchange rates can hardly be expected to be considered fixed for ever, and the term "irrevocable" has no practical significance. Market participants' suspicion that exchange rates may not be indefinitely fixed introduces distortions in the system that may weaken its cohesion. This distortion gives rise to interest rate differentials, even when economic fundamentals are convergent, reflecting the fact that market agents continue to perceive certain currencies as being riskier than

35. The Triffin dilemma is one of the inherent destabilizing aspects of an asymmetric system that has been examined in the literature. This issue will be taken up again in Chapter III.

36. This possibility is allowed for in stage II of the EMU as defined in the Delors Report.

others.³⁷ The issue concerns the credibility and time consistency of economic policies. Market participants know that in certain circumstances national policy authorities will have a strong incentive to resort to exchange rate changes to adjust disequilibria. They therefore discount this possibility, even if remote, by pricing assets denominated in the various currencies differently. Interest rate differentials in a fixed exchange rate regime are a source of distortion and may fuel tensions. With a single currency this would not be possible, since interest rates would be equal across the whole area, except for differences in borrowers' creditworthiness. This issue will be analyzed further in chapter IV when examining the shortcomings of ad-hoc cooperation and discussing the need for an institutional framework underlying the common monetary policy.

Finally, the maintenance of national currencies, even at an advanced stage of monetary unification, may be interpreted by market agents as revealing national authorities' desire not to renounce their monetary autonomy completely.

In short, full monetary unification cannot be obtained only through the fixity of exchange rates, but requires the adoption of a single money in order to eliminate the inefficiencies linked to the coexistence of national currencies.

3. Which single currency?

Since monetary union is complete only if one single currency is used, the question to be asked is which currency

37. In the literature this has been named the "peso problem"; see Frenkel (1983). A well known European example is that of the Netherlands, which, in spite of very similar policies to those of Germany and a lower rate of inflation, has a higher nominal and real interest rates.

should become the common monetary standard for the EMU. The choice will inevitably depend on a number of factors, and in particular on the preferences of private agents. The outcome of the selection process is difficult to forecast. We can, however, compare two alternatives: the first, in which one of the existing national currencies is selected; and the second, in which an additional ($n^{\text{th}}+1$) currency is adopted. The solution has important repercussions on the process of monetary unification.

The advantage of using one of the member countries' currencies, presumably that of the largest country, is that it already exists and some market participants are accustomed to it. Further, it will probably be chosen among the most stable currencies, and will therefore compete successfully with the others and progressively supplement them. Monetary policy in the whole area will be conducted on the basis of the underlying fundamentals in the centre country, with the other national policies being adjusted accordingly.

However, this solution presents several problems.

Firstly, the increasing use of the centre country's currency may pose problems for the attainment of the objective of price stability in the area. The argument is as follows: the centre currency will increasingly be used by the residents of the other countries, causing the demand for it to rise, both to substitute the other currencies and for new transaction purposes. The monetary authority of the centre country will therefore have to take account of the increased outside demand in defining its monetary policy. However, it will become increasingly difficult to determine whether such increase in the demand for money originates from a net substitution effect away from the other currencies or from an increase in transactions caused, for instance, by a rise in aggregate demand in the rest of the area. While accommodating the first type of demand is necessary to guarantee a smooth process of currency substitution, accommodating the second may fuel inflationary pressures, and

would therefore be in contrast with performing the function of anchor. This means that the monetary objectives of the centre country will have to be determined on the basis of the underlying economic development not only of the home country but also of the whole area.

Failure to acknowledge the problem arising from the major currency performing the functions of both anchor and means of international settlement led to the breakdown of the Bretton Woods regime. The difficulty of managing a system in which velocity is continuously changing may entail deflationary (inflationary) pressures in the system itself, deriving from an insufficient (excess) amount of liquidity denominated in the common currency.³⁸

The German monetary authorities are deeply concerned about the DM becoming an international currency and they have set rigid limits on the ability of other EMS central banks to intervene in DM. This, however, restricts the ability of the DM to act as the reserve currency of the area and thus makes it less suitable to become the single currency of the Community. Monetary unification can hardly progress under a system which prevents economic agents from fully unifying their monetary and payments practices.

Another problem with the above solution is political. To what extent can the monetary unification of the Community take the form of the transfer by eleven countries of their monetary sovereignty to one country? One practical aspect of this issue is the distribution of seignorage. With the reduction in the holdings of national currencies, the authorities' seignorage will tend to fall, with the exception of that of the authority whose currency is selected for the entire system. A redistribution mechanism would have to be

38. This argument was developed by Triffin (1960).

designed to share the revenues equitably.³⁹ Further, control over the institution in charge of regulating monetary conditions in the whole area would have to be shared.⁴⁰ History has shown that a monetary system based on the self-discipline of a single country is not a durable guarantee of the stability of the whole area.⁴¹

A final argument is that the process of competition among the existing national currencies that would lead to the selection of the single currency might not be stable or necessarily ensure uniformity of monetary conditions in the area. The outcome would be a situation totally different from monetary union.⁴²

In summary, it is unlikely that a process of monetary unification based on the market selection of one of the member countries' currencies will be viable. The solution can only be to adopt an additional currency whose use in the system is progressively extended, while not jeopardizing the objective of price stability.

Market acceptance of a currency does not only stem from the policy authorities' choice but has to arise from the customary needs of private agents.⁴³ Monetary systems are the result of the interaction between market participants,

39. The issue of the international sharing of seignorage is an old one, and has been addressed theoretically, although practically unresolved in the post-war discussions leading to the Bretton Woods agreement. The proposals were generally based precisely on the adoption of a $n_{ch}+1$ currency such as the SDR; see Grubel (1969).

40. Goodhart (1989), picking up an earlier provocative proposal by Kindleberger, put forward the idea that European monetary unification should occur by having the Council of the Bundesbank enlarged to allow seats for all EEC members.

41. See Eichengreen (1986).

42. See Carli (1989).

43. This approach to monetary phenomena is based primarily on the writings of Menger (1892) and Von Mises (1934).

who use money in their mutual transactions, and the policy authorities, who are responsible for the value and issue of money. Any reform should therefore involve both sides. They can be called for simplicity the supply and the demand side.⁴⁴

The two sides of monetary phenomena are particularly important for the timing of the various stages of the monetary unification process. On the supply side, changes occurring in the process of monetary unification need to be clearly defined so as to ensure that there is never any ambiguity about which institution is responsible for the issue and value of the new currency. This involves discrete changes in the exercise of policy responsibility and in the authority of the relevant institutions. The creation of a monetary union therefore requires the various stages of the transmission of policy authority from the periphery to the centre to be identified. This is why a monetary reform creating a monetary union calls for a Treaty among the contracting parties. The institutional dimension of the reform will be addressed in chapter III.

On the other hand, the substitution of the national currencies by a new monetary instrument can hardly be imposed only by edict. It has to take account of the customary habits of private agents. For this reason currency unification is a slow process that may take several years. For a certain period the old and the new currencies can therefore be expected to coexist. This has direct implications for the timing of the reform and the way it is implemented.

The demand and supply side of the monetary unification process will be examined in the next two chapters.

44. These considerations are developed in particular in Padoa-Schioppa (1988).

III. The supply side: institutional development towards a common monetary policy

1. Introduction

This chapter considers the role of monetary policy in the process of monetary unification. The aim is to identify certain minimal requirements that need to be satisfied at the various stages and to examine whether they can be built into a unified institutional framework.

Four stages in the path towards monetary unification are identified. The first three stages are somewhat similar to those examined in the Report on economic and monetary union in the European Community (Delors report). Not much attention will be devoted to stage I. Stage II starts with the new Treaty and the creation of a European System of Central Banks (ESCB). The content of this stage is not fully specified in the Delors Report. Certainly the fact that exchange rate changes are still allowed is a major weakness that may undermine the credibility of the process and of the newly created institution.⁴⁵ Our preference would therefore be for a rapid move from stage I to stage III with the creation of the ESCB and the locking of parities coinciding perfectly. Stage II could be used to provide a transition period for countries not able to adhere from the start. Stage III is that of full exchange rate fixity. The Delors Report considers this situation as a possible final one and as completing the process of monetary unification. Following the discussion of chapter II, monetary unification is considered complete only after the adoption of a single currency, which is foreseen in stage IV.

The ESCB will be involved in a wide range of

45. A similar position is taken by Cukierman (1990).

functions presently undertaken by NCBs, such as involvement in the payments system, the supervision of banking, lending of last resort and the conduct of monetary policy. In the following only the last of these functions is considered.

We start by describing the basic principles underlying the conduct of monetary policy within an ESCB. The present functioning of monetary policy coordination in the EMS and the proposals for enhancing cooperation are examined afterwards. It is shown that certain features of an embryonic system are already in place, and could be formalized within an institutional framework that can be set in place as early as stage II. The last section examines a number of hypotheses on how the system could be implemented.

2. Monetary policy in a monetary union

This section analyzes the general features that characterize the conduct of monetary policy in a monetary union. The analysis makes implicit reference to the federal structures of existing central banks, such as the Federal Reserve System and the Deutsche Bundesbank, as possible models.⁴⁶ The European System of Central Banks (ESCB) could be shaped as a federal system, composed of the existing National Central Banks (NCB) and of a Central Monetary Institution (CMI), which would be in charge of certain operational responsibilities for the ESCB.

Certain specific issues, concerning for instance these institutions' legal status, the composition of their governing bodies and their degree of autonomy and

46. For an analysis of the functioning of these federal systems, see in particular Toniolo (1989), Deutsche Bundesbank (1982), Thygesen (1988b), Eizenga (1983) and Louis (1988).

accountability are left aside.⁴⁷ Two basic principles underlie the creation of the ESCB: its political autonomy and its main objective of guaranteeing the stability of the purchasing power of the currency. Both principles would have to be clearly inscribed in the treaty creating the ESCB.

Another basic principle, previously mentioned in chapter II, is the federal nature of the ESCB, implying the participation of all the NCBs in the decision making. However, to be consistent with the principle of autonomy, the members of the ESCB Council, while nominated by the NCBs, should only represent the interests of the whole Community and pursue stability policies for the entire area.⁴⁸ To this extent a voting system which would assign different weights to different members of the ESCB Council might be in contrast with the need to ensure the ESCB's complete autonomy. Accordingly, a hegemonic system in which one country sets monetary policy for the whole area is not considered.⁴⁹ These two aspects, i.e. representation and independence are as crucial for the ESCB as they are for the Deutsche Bundesbank: a clearly defined objective (price stability) and a strong independent status are the best way to ensure that the members nominated by the regional constituencies (such as the Länder in Germany, and the European nations in the Community) will give priority to general rather than regional interests.

We now turn to the functioning of the ESCB by

47. On some of these issues see, for instance, Thygesen (1988b), Eizenga (1987) and Kloten (1988).

48. This principle is in part recognized also in the new Council Decision on coordination between EEC central banks.

49. The reasons for this choice were in part explained in Section 3 of Chapter II, where a preference was expressed for a monetary union based on a "supranational" currency rather than on one of the existing member country's currency.

considering three major steps in the conduct of monetary policy in industrial countries: (a) the definition of objectives; (b) the monitoring of monetary developments and the evaluation of the adequacy of the stance; (c) policy implementation.

a) The definition of objectives - The procedures for the definition of intermediate policy targets vary across countries. However, certain general features are now widely established. In particular, towards the end of the year national monetary institutions evaluate the past performance and define the stance for the coming year, which is then announced to market participants. Objectives are decided on the basis of the available economic projections (final targets), in particular price and real growth developments, and of the external interactions affecting the balance of payments.

During the first half of the eighties, major countries often expressed targets in terms of quantitative aggregates.⁵⁰ Smaller countries instead chose other types of target, such as the exchange rate. More recently, greater emphasis has been given in large countries to a broader set of targets and indicators. However, the practice of announcing quantitative targets has remained, and is considered by market participants as an important signal, although not the only one, of the authorities' policy stance.

In stage IV of the monetary union the ESCB can be expected to follow the practice of the Federal Reserve, the Bundesbank and many other central banks and to announce its policy stance and its main targets in terms of the common currency.

The joint announcement of monetary targets for the

50. On the recent experience of major countries, see Fischer (1987) and BIS (1988).

whole area would be necessary even before reaching stage IV, when national currencies still exist. The extent of joint responsibility in the decision process would of course differ. In stage II, if there is a second stage, NCBs would maintain a certain degree of autonomy in determining their intermediate targets; these targets could even be expressed with respect to different variables, such as interest rates or monetary aggregates, and would be announced jointly by the ESCB. This situation would make stage II a very fragile transition period, given the different commitment NCBs would make with respect to the national targets.

Once stage III is reached, the requirement of a single monetary policy for the whole area implies that the margins of autonomy would be eliminated: the choice of the policy targets, defined in national currencies, would have to be the result of a consensus and involve the joint responsibility of all the NCBs. Different opinions could be expressed in the discussion preceding the decision, but unity would be essential in its implementation; this principle is in fact followed in all federal monetary systems.⁵¹

b) The monitoring of monetary developments - The second step in the conduct of monetary policy is that of checking the consistency between the pre-determined policy stance and the development of the economy. In regular meetings the ESCB board would assess the appropriateness of the policy stance, basing its judgement on indicators of economic performance or on some leading indicator. If necessary, specific decisions would be taken to influence monetary conditions in a way consistent with the attainment of the intermediate policy objectives.

51. For an analysis of the functioning of the Federal Open Market Committee in recent years, see in particular Greider (1987) and Kettl (1986).

In stages III and IV of the monetary union, this exercise would represent the basis for all monetary policy decisions.

This procedure could be followed in part at an earlier stage; for instance, it could be agreed that any change in national interest rates decided by a member country be subject to an exchange of opinions, and the announcement to market participants would be made through a joint communiqué, as occurs today for exchange rate realignments within the ERM.⁵² This would initially represent only a formal change, but it would be a first step towards the adoption of the procedures to be followed in the subsequent stages of monetary unification.⁵³

c) Policy implementation - The implementation of monetary policy can be at either the centralized or the decentralized level, even in stages III and IV of the monetary integration, provided that consistency and unity are ensured. Theoretically, all operations could be undertaken in just one centralized location. Within a financially integrated area the monetary impulse would rapidly spread out to all the regions of the area. In the US and German federal systems certain transactions, such as (outright) open market operations and foreign exchange interventions, are undertaken centrally. Other types of transactions, such as discount

52. The announcement procedure would be similar to that for EMS central rate realignments.

53. Until the Banking Act of 1933 the policy recommendations of the Federal Reserve Board were not compulsory for the Reserve banks. The problems that emerged before that time in the US should, however, be avoided in the creation of the ESCB. These problems could undermine the credibility of the new institution, and maybe of the whole process of unification if there was not sufficient political consensus to reinforce the unity of the decision making power.

operations with commercial banks and (temporary) repurchase agreements at given interest rates,⁵⁴ are instead decentralized.

The different emphasis accorded to the various types of monetary control procedures will influence the balance of operational responsibility between the central institution and the NCBs. In the US the relative importance of open market operations in the conduct of monetary policy gives the Federal Reserve Bank of New York a prominent role in the implementation (and the monitoring) of monetary policy. In Germany, interest rates on repurchase agreements and discount operations are the main policy instruments of the Bundesbank and are used by all the Ländeszentralbanken. The monitoring of their effect on the overall liquidity naturally requires a highly integrated information system linking the regional banks.

Without anticipating the possible structure of the future ESCB, it can nevertheless be argued that the absence of a sufficiently large supranational fiscal authority will reduce the importance of centralized open market operations. A certain degree of decentralization in the implementation of the common monetary policy may also be the political counterpart of centralized decision-making and partially satisfy the principle of "subsidiarity".⁵⁵ A necessary condition for such decentralization in the implementation of monetary policy is a degree of homogeneity among the instruments used by the various NCBs, so as to ease the task of monitoring the overall development of monetary conditions and avoid any distortions in the allocation of financial resources.

54. See Deutsche Bundesbank (1982) and Federal Reserve Board of Governors (1981).

55. This generally agreed principle states that, when not necessary for the efficient functioning of the system, the centralization of responsibilities should be avoided.

It is even possible that the implementation of the ESCB's monetary policy could be more decentralized than in the present US and German cases. Foreign exchange interventions, for instance, need not be made only in one financial centre. In Italy, interventions are made on both the Milan and the Rome markets, and there are two distinct fixings of currency values. Orders are sent by wire from the Banca d'Italia in Rome, and executed by its agents. The same applies for other types of money market operations, mostly undertaken in Milan, the major financial centre of the country. The view that the ESCB should be positioned close to the biggest financial centre appears somewhat dated.

The functioning of the ESCB would not differ significantly from that of any other central bank. It needs: first, a policy-making framework based on agreed upon targets and instruments; second, a mechanism of policy correction in the face of changes in the environment; and, third, an organizational structure in charge of the implementation of the policy measures. Although unity and consistency are essential in all of these three phases, centralization is required only for the decision-making implied in the first two.

3. The present situation in the EMS (stage I) and proposals for increased cooperation

a) The present situation in the EMS (stage I) - The present policy cooperation framework embedded in the functioning of the EMS presents certain similarities with the structure of the definitive ESCB. In other respects the two systems are (still) substantially different.

At present, the definition of the policy stance is decided by the policy authorities of the member countries: targets for the coming year are defined separately and

autonomously by each partner. Different variables are used in the various countries, and not much progress has been made towards harmonization.⁵⁶ Discussions are held at the Community level, in particular the Monetary Committee and the Committee of Governors, to check the consistency among the member countries' objectives. In stage I the Committee of Governors is expected to play a greater role in the definition of targets, but the main responsibility remains with national authorities, especially in all those countries where responsibility for monetary policy is shared with the Treasury.⁵⁷

The monitoring of monetary conditions has played an important role in policy cooperation, especially since the Basle-Nyborg agreement of September 1987.⁵⁸ In their monthly meetings central bank Governors examine the evolution of monetary conditions in member countries, with the aim of identifying potential sources of tensions. A similar exercise is undertaken within the Monetary Committee. However, the discussions do not systematically lead to policy decisions being taken in common. At present, the exercise remains mostly conceptual, and is not even accompanied by official declarations of intent, as with the G-5 and G-7 meetings, or through the (lagged) publication of the meetings minutes, the procedure of the Federal Reserve Open Market Committee.⁵⁹

56. Some attempts to harmonize monetary aggregates have been conducted within the Committee of Governors' group of monetary experts.

57. The new Council Decision on central bank cooperation states that the Committee of Governors will normally be consulted in advance of the adoption of national decisions on the orientation of monetary policy, such as the definition of annual money and credit targets.

58. See Dini (1988).

59. The new Council Decision considers the possibility of the Committee authorizing the president to make its deliberations public.

The implementation of policy measures is at present highly decentralized. Further, the instruments of monetary control vary across countries. Changes in policy-relevant interest rates have often been made following prior move by the Bundesbank. These episodic events are not perceived by the market as part of a common policy. Foreign exchange interventions have also been more coordinated in the last few years, but the absence of the Bundesbank from intra-EMS operations, even when they are of a temporary nature and not expected to interfere with the function of anchor, is an important sign of the difficulties still to be overcome. Stage I is not expected to change any of these procedures.

Overall, the present state of monetary policy coordination and the changes foreseen for stage I falls short of the desired situation described in the previous section, and is insufficient to promote monetary stability in the Community.

b) Proposals for increased cooperation - Proposals have been advanced to progress towards monetary unification by further strengthening the EMS. This is the so-called "very long stage I" approach, which follows two main directions:

The first boils down to tightening the exchange rate link between the ERM member countries, within the present institutional EMS setting, and moving progressively towards increased exchange rate fixity, for instance by further reducing the fluctuation margins.⁶⁰ The increased exchange rate discipline would enhance the monetary cohesion of the system and strengthen its defences against exogenous disturbances. This proposal presupposes the maintenance of the existing adjustment mechanism, with Germany being at the centre of the system and providing the anchor for price stability through its monetary policy. According to this

60. See Bofinger (1987), Pöhl (1989) and HMT (1989).

view, the incentives to acquire reputation⁶¹ would induce other member countries' central banks to link their policies closely to Germany's.

The second proposal consists in complementing the Exchange Rate Mechanism with a framework of ex-ante policy coordination, within the framework of enhanced cooperation foreseen for stage I.⁶² This aims at reaching a common definition of monetary objectives, and a strengthening of the monitoring procedures. Appropriate measures should also be devised to ensure that divergences are corrected in a coordinated way. More specifically, national central banks would jointly determine their respective targets for the growth of the domestic components of their monetary aggregates, based on the forecasts and targets for the underlying development of their economies. The changes in the external components would not be sterilized, and would therefore be allowed to influence the overall amount of domestic liquidity directly. Monetary conditions would be systematically monitored to determine whether the behaviour of monetary aggregates is consistent with the preannounced targets. Measures would be agreed upon among the member countries to correct the effects of manifest divergences.

The two proposals suffer from several limitations. With respect to the first proposal, the shortcomings of a fixed exchange rate system have already been discussed in section 2 of chapter II, with particular reference to the issue of systemic instability. The literature has thoroughly analyzed the problems arising from anchoring the system's monetary policy to one country.⁶³ Not even leaving the

61. On the role of reputation in the exchange rate determination within the ERM, see Giavazzi and Pagano (1988).

62. A more detailed presentation of this proposal can be found in Caranza, Papadia and Zautzik (1988) and Papadia (1989).

63. See, Triffin (1960) and Eichengreen (1986).

choice of the anchor currency to competition among currencies is an appropriate way to foster monetary stability. With full financial integration the role of anchor may for certain periods of time slip away from the most stable (low inflation) currencies towards the higher interest (and inflation) rate countries. In short, if the choice of the anchor is left to free competition, the system runs the risk of becoming indeterminate, thereby endangering overall stability. Recent research suggests that the present EMS is not exempt from such instability.⁶⁴ Another problem is that, given the different degrees of credibility of member central banks, the stabilization of exchange rates entails maintaining the present wide interest rate differentials for long periods, thereby imposing a cost for the system.⁶⁵ Accordingly, once inflation differentials have come down to relatively low levels (1-2 per cent) and exchange rates have reached a reasonable degree of stability, an institutional change that enhances the overall credibility of the system would be preferable to continued competition among currencies. Finally, from a political point of view, it is difficult to imagine that while Community matters are generally organized in an egalitarian way, monetary matters will remain subject to a system which, de facto, is hegemonic.

The second proposal also involves practical difficulties arising from the different practices in the conduct of monetary policy in the various countries.

A major limitation of the proposals presented above regards their underlying institutional framework. Both proposals rely on an ad-hoc mechanism of voluntary

64. The issue is examined theoretically in Giavazzi and Spaventa (1989). Bini Smaghi and Micossi (1989) have presented evidence regarding the short-run destabilizing effect of indeterminate anchors.

65. See footnote 37.

cooperation, inserted in the present unchanged (or slightly reinforced) EMS setting. Their emphasis is still on exchange rate management rather than on progress towards monetary unification. The latter requires a different institutional framework. This issue is of particular importance in the discussion on monetary policy cooperation and is worth examining more thoroughly.

c) Institutional requirements for progressing towards monetary unification - The literature has brought out the importance of the institutional framework underlying policy coordination. Institutions are important because cooperation, even if recognized by all agents as leading to a superior outcome, may be difficult to achieve. This is due first to the fact that the incentives for cooperation do not depend only on the existence of shared interests, but emerge also from patterns of potential discord: "without discord, there would be no cooperation, only harmony" (Kehoane, 1984). The second difficulty arises from the fact that cooperation is generally impaired by obstacles of various kinds, such as asymmetric information, externalities, incentive compatibility etc... The choice of regime (institution) within which cooperation is most efficient depends on the nature of these obstacles.

A first criterion for the choice of the institutional framework regards the degree of "policy density" of the decision-making process underlying the cooperation mechanism, i.e. how closely different policy issues are related to one another. If this density is low, ad hoc agreements may be sufficient; in dense policy spaces policy decisions will tend to interfere and conflict with one another unless they are based on a common set of principles and rules. Consequently, the greater the policy density, the more cooperation needs to be institutionalized in order to reduce the costs of continuously taking account of the

effects of one set of agreements on the others. The existence of institutions establishes the standard for consistency in reaching successive agreements.⁶⁶

With the increasing integration of financial and money markets in the Community, the "policy density" of the monetary authorities is rapidly rising. In particular, day-to-day money market management must ensure that interest rate differentials do not open up between member currencies (once exchange rates become fixed) that could start off exchange rate tensions in the system. Foreign exchange interventions and actions on domestic money markets are more and more closely intertwined. This requires that decisions taken in the various policy centres be coherent. Finally, monetary policy becomes increasingly related to other aspects of Community economic policy (sectoral, competition, fiscal, external trade ...), as was underlined in the Delors Report and also mentioned in the first section of chapter II.

In these circumstances, if the coordination scheme remains on an ad-hoc basis, in which responsibilities are not precisely defined, there is no guarantee that potential disagreements will always be resolved, in which case the credibility of the cooperation mechanism would be seriously undermined. Also, in a system in which policy decisions are increasingly linked, economic policy can hardly be conducted

66. "Ad-hoc cooperation is a method by which partners meet, discuss and, if they agree, act together. If they do not agree, they will skilfully draft a press communiqué to present to the public the sense of a joint commitment to general values and goals and then return to their capitals to conduct, within the limits of their national autonomy and strength, mutually inconsistent and possibly conflicting policies. Institutionalized cooperation starts where the ad-hoc approach ends. It ensures that the decisions and actions will be taken at the system level even if the parties fail to agree. In other words, it guarantees not that the right decisions will be taken, but that decisions will be taken at the right level: in our case, this means the level of the multi-country economy (Padoa-Schioppa, 1984).

only through rules. The management of economies requires a certain degree of discretionality in order to take account of the complexity of the changing economic environment. At the international level, as well as at the national level, this requires that such discretionality be implemented through an institution whose political accountability is recognized.⁶⁷

Game theory and collective action literature also emphasizes the limitations of ad hoc cooperation (Keohane, 1984 and Guerrieri and Padoan, 1988). In particular, it points to the possibility that rational agents, who would all individually benefit from cooperating among themselves, may nevertheless not be able to do so.⁶⁸ This implies that even though agents behave in an optimizing way as individuals, they are unable to reach an optimal solution as a group. The difficulties encountered in cooperating are most evident in the presence of "mixed-nature games" (Schelling, 1960), in which agents can benefit from mutual cooperation, but may also gain from defection. The game theoretic literature has also examined the so-called "Prisoner's dilemma", which shows that under certain conditions rational actors find themselves unable to reach Pareto optimal solutions, despite a certain degree of convergence of interest.⁶⁹ For its part, the literature on "collective action" has examined situations in which cooperation among agents would be necessary to obtain a good that (insofar as it is produced at all) is enjoyed by all members, whether they have contributed to its provision or not. When each member's contribution to the cost of the good is small relative to the total costs, individuals are likely to choose not to contribute, since their contribution is costly to them but has a relatively small effect on

67. See Padoa-Schioppa (1984).

68. There is a growing literature on this subject. See in particular Cooper and John (1988) and Chari, Kehoe and Prescott (1988).

69. For a survey, see Carraro and Giavazzi (1989).

whether the good is produced or not. The dominant strategy for agents may therefore be to defect, by not contributing to the production of the good.

These concepts have been applied to macroeconomic policy in the literature on international policy cooperation from Hamada (1977) onwards. Kehoe (1989), taking up an argument discussed by Rogoff (1985) on the desirability of policy coordination, shows that if cooperation is based on an institutional framework that cannot simultaneously guarantee both commitment and cooperation, the outcome is even less efficient than that of a non-cooperative system. This implies that cooperation is efficient only if countries have access to a commitment technology, that may take the form of a specific institutional regime. Casella and Feistein (1988) show, on the basis of a simple two-country general equilibrium model, that in a fixed exchange rate system with decentralized cooperation there may be an incentive to over-supply money, because each country expects that its monetary expansion will have relatively little impact on the area's overall quantity of money. Such a system would hardly be enforceable, since countries have incentives to deviate from the coordinated solution. This result indicates, according to the authors, that the organization of a jointly controlled central bank is crucial for the success of a unified monetary policy. A similar conclusion is reached by Aizenman (1989), who shows that in a monopolistic competitive market structure the externality arising from agents overlooking the effects produced by their actions leads to an inefficiently high inflation rate. Applying the analysis to a multicountry set-up leads to the conclusion that it is more efficient to delegate monetary policy powers to a unique

central bank.⁷⁰ Currie, Levine and Vidalis (1987) show that even if countries have an incentive to acquire reputation, the ad-hoc cooperation mechanism leads to suboptimal solutions, and possibly unstable equilibria. They show, in particular, that as their reputation increases, countries are tempted to use monetary policy in an excessive way, with adverse spillover effects. The outcome may be that monetary policies tend to overreact, but with some delay, to external shocks, with the risk of provoking "interest rate wars".

The above-mentioned literature suggests that voluntary cooperation may lead to unstable equilibria. Exclusive reliance on reputational incentives is not sufficient to ensure the durable viability of a fixed exchange rate system like the EMS.

Game theory and collective action literature both indicate that the potential for "rational" cooperation failures increases as economies become more integrated. Institutions are therefore formed as a means of overcoming the deficiencies that make it impossible for rational agents to respect mutually beneficial agreements.⁷¹ Institutions are thus not only consistent with self-interest but may under some conditions even be necessary to its effective pursuit;

70. This also implies that fiscal authorities should have limited power to affect the composition of commercial banks' balance sheets (through portfolio requirements, etc.); otherwise the former could induce the latter to hold debt issues in exchange for credit, thereby affecting overall monetary conditions.

71. "The institutional approach is superior not only to unsuccessful but also to successful ad-hoc cooperation, because it is more permanent and more certain in character. The institutional approach is defined by the rules on which it is based, for example allowing decisions to be taken by majority voting rather than by the unanimity which so often hampers the effectiveness of cooperation. With cooperation, the existence of a public good has to be acknowledged anew every time, so that its realization is difficult. With an institution this existence is assumed." (Padoa-Schioppa, 1984, p. 269).

they facilitate the smooth operation of agent's policy actions. Given the increased integration that will be brought about with the creation of the internal market and the full liberalization of financial movements, the risks for coordination failures in the Community are likely to increase; even in the field of monetary policy, an effective coordination scheme can be viable only if it is set in an institutional framework that ensures its consistency and credibility over time.

4. An institutional scheme for a common monetary policy

a) General principle - The design of an institutional framework for the monetary unification process needs to be based on certain broad principles. The first is that of ensuring a credible transition to stage IV of the union. In particular, the relationships between the various policy actors, especially those between national central banks and the central monetary institution, need to be clearly set out. The transition from one stage to another must guarantee consistency between the increased unification of decision-making and the persistence of a certain degree of decentralization in implementation. As the decision-making process becomes more unified the links between the policy centres have to be reinforced. This can hardly occur through a continuous change in the institutional structure of the system. The approach followed below is to define once and for all⁷² the institutional framework for policy cooperation and progressively modify the degree of automaticity of certain transactions taking place between the various actors, within the given framework. The way these changes occur will be examined in subsection d) below.

Another basic principle underlying our approach is

72. This, of course, implies a modification of the Treaty.

that monetary policy should be conducted through transactions that involve a direct relationship between the balance sheets of central banks and market participants, in particular commercial banks. In short, our framework considers monetary policy as operating through market mechanisms rather than through administrative control procedures.⁷³ This general approach allows us to examine the transmission of policy impulses through the balance sheet of the central bank and of the consolidated banking system. It presumes that these instruments, such as the monetary base and interest rates, have a relatively more stable relationship with the targetted intermediate variables than administrative instruments. In turn, this implies that monetary authorities are able to influence overall money market conditions by maintaining control over the supply of a small fraction of the quantity of money, i.e. its outside component (currency).⁷⁴ This approach to monetary policy, refined through the use of a wide set of information variables that allow the nature of the exogenous shocks affecting the economy to be identified, is followed in most industrial countries.

Another important aspect to be taken into account in this approach is the stability of the relationship between the intermediate target of the policy authorities and the final macroeconomic policy objective. This issue differs from the previous one and does not affect the way the

73. As shown in D. Patinkin's (1961) critical review article of Gurley and Shaw's 1960 *Money in a Theory of Finance*, this approach to monetary control in a fiat money system is consistent with price stability. This principle is further examined in M. Friedman's (1965) *Program for Monetary Stability*.

74. An elegant restatement of the monetary base control principle can be found in the recent literature on the theory of financial intermediaries (and innovation) by Fama (1983).

institutional scheme is designed.⁷⁵ Consequently, the functioning of the scheme proposed in this chapter does not depend on the choice of the intermediate policy target, as will be shown in subsection c) below.

Subsection b) examines a hypothesis for the institutional upgrading of the money supply process in the Community that would lead to European monetary unification through the progressive merger of national central banks' operations through a mechanism in part based on that underlying the creation of the Bank deutscher Länder system and the successive transition to the Deutsche Bundesbank.⁷⁶ In this scenario the mechanism underlying the conduct of monetary policy in stages II and III is a generalization of the scheme proposed by Ciampi (1989).

b) Functioning of the scheme - Following the principles mentioned in the above subsection, an ESCB would be created as a new institutional entity composed of the member NCBs, like any other federal system, and of a CMI which would be in charge of certain ESCB operations.

In stage IV of the unification process, as with the creation of the Deutsche Bundesbank, the ESCB would be the

75. The issue from the central banking point of view is summarized in Padoa-Schioppa (1987b): "Modigliani and Papademos have shown that the conventional paradigm of the monetary mechanism, centered on intermediate objectives defined in terms of the supply of a relatively narrow monetary aggregate, is based on specific assumptions that do not hold universally. In all possible paradigms, however, the action of the central bank rests on the exclusive licence to produce an asset (base money) that is useful to economic activity. And the central bank has not only to make the best 'quantitative' decision concerning the creation of this asset. It has also the 'qualitative' task of promoting a financial structure in which the use of this licence could be more effective" (p. 266).

76. For a detailed description of these institutional developments, see Deutsche Bundesbank (1982) and Holtfrerich (1988).

result of the merger of the existing NCBs; its balance sheet would be the consolidated balance sheet of all the NCBs.

The creation of the ESCB does not need to be postponed until that stage; it can be created in as early as stage II, as an additional juridical entity, in the same way as the Bank deutscher Länder before its transformation into the Deutsche Bundesbank in 1957. Between 1948 and 1957, the Bank deutscher Länder was a joint subsidiary of the Länd Central Banks, responsible in particular for the coordination of policy and certain central functions such as exchange control. The Board of Directors of the Bank deutscher Länder, comprising its president and the presidents of the Länd Central Banks, was responsible for determining discount policy and minimum reserve policy; it also laid down guidelines for open market policy and issued credit directives. A similar entity can be created in the Community. To avoid major changes in the transition towards the final stage, the ESCB and its balance sheet should be designed as closely as possible to its definitive version. This could be obtained through a mechanism, somewhat similar to that underlying the creation of the FECOM, by which the NCBs deposit their domestic currency assets with the ESCB.⁷⁷ In turn, the ESCB would make all or a part of these assets available to the NCBs themselves,⁷⁸ until the final merger of the NCBs takes place. Consequently, the creation of the ESCB would initially be the result of an accounting device,

77. The contribution of foreign currency assets, in particular those denominated in the currencies of the member countries, is not essential in this scheme and is therefore not considered for simplicity. A possible solution in order to take these external assets into account from the beginning would be to confer them to the CMI, with the same mechanism as the one illustrated for domestic assets.

78. The rate of return on the assets and liabilities of the ESCB would remain the same, except maybe for a small symbolic spread to cover expenses.

determined by temporary operations with the ESCB acting as a "deposit bank" for the NCBs; the accounting would of course be in ecu. The liabilities of the ESCB would correspond to the domestic currency component of NCBs' monetary base received in deposit. On the asset side there would be the deposited assets made available to the NCBs.

The mechanism would be based on an accounting device in the sense that the NCBs' domestic assets would never be entirely transferred to the ESCB; the latter could however hold part of these assets as a special reserve requirement.

The system would be based on the following accounting procedure: on the one side the NCBs' domestic currency assets would be entered as deposits with the ESCB as shown in Table 1 (lower part); on the other, the ESCB would make the assets received in deposit from the NCBs available to the same NCBs, with a 100 percent (or less) "give back" coefficient. The CMI would be created through a contribution of capital (foreign assets) by the NCBs in exchange for shares.

In the scheme proposed by Ciampi (1989), the NCBs' domestic components of the monetary base expands in a given proportion with ecu assets received from the ESCB. In the present paper the assets received by the NCB are not official ecu reserve assets, but all (or a fraction) of those originally deposited by the NCBs with the ESCB. The amount received back would not necessarily be the same as that deposited, as will be seen below. The scheme of the present paper is therefore based on bilateral relationships between the ESCB and the NCBs, while Ciampi's scheme allowed for transactions in official ecus between the NCBs.

The advantage presented by this mechanism is twofold. First, from the creation of the ESCB it simulates the latter's definitive (asset side of the) balance sheet. Therefore, at the time of the final merger between the NCBs, in stage IV, no major change would have to occur in the

structure of the ESCB; only a transformation of temporary into definitive operations would be needed. Second, by establishing a consolidated balance sheet for the ESCB, the scheme allows member countries in the Community to coordinate monetary policy on the basis of the same principles as adopted for national monetary policies.

In the following, we examine the mechanism of policy coordination centred on the ESCB. It is helpful to think of the system as having three levels: on the first are the commercial banks, on the second the NCBs and on the third the ESCB. Progress towards monetary union implies no change in the substance of the transactions between the NCBs and the ESCB. The difference between stage II or III and stage IV, which is shown in Table 1, is that in the former the NCBs' assets are deposited with the ESCB, while in the latter they are owned by it, following the merger between the NCBs; see the Appendix for a detailed description of the balance sheet.

The conduct of monetary policy in stage IV, when a single currency exists, is quite straightforward, and has been described in section 2 above. In the earlier stages, when national currencies still exist, the functioning of the scheme is more complex, since it involves both keeping control of domestic currency developments and intervening in exchange markets to defend the fixed rates. To illustrate the operational relationships between the various components of the ESCB, the monetary base (domestic component) is assumed to be the main policy instrument of the monetary authorities; extensions will be considered in the next section.

Until the distinctions between national currencies are eliminated, the liquidity of the markets for assets denominated in these currencies must be compatible with the maintenance of stable exchange rates and price stability in the area. In order to pursue both these objectives at the same time, liquidity conditions in the area and in the

various currencies must be kept under tight control.⁷⁹ This implies that consistency must be ensured between the intermediate policy target for the area and those for individual countries. Let us also assume for simplicity that intermediate targets are expressed in each country in terms of the domestic component of money supply,⁸⁰ determined on the basis of the underlying fundamentals (this assumption will be relaxed in subsection c) below). Once monetary targets are set for all countries, monetary policy is implemented at the system level through the 100 per cent (or less) reserve requirement on the NCB's domestic currency assets held with the ESCB.

The mechanism would function as follows. After setting the intermediate targets, NCBs would try to reach them through changes in their domestic currency assets, on the basis of the expected relationship (multiplier) between their monetary base and the money supply (domestic component) target. In a second step, periodic monitoring by the ESCB board would be conducted on a centralized basis by looking at the ESCB balance sheet; this would permit assessment of the compatibility between national targets and current developments. Several other indicators could be used, in particular the exchange rate with external currencies and the behaviour of the external component of the NCBs monetary

79. The control over the distribution in the various currencies is required in a symmetric system of fixed exchange rates to avoid major changes in the external component of the monetary base, which could produce tensions in the case of exhaustion of reserves by some member NCB. This basic principle is followed for instance in McKinnon (1977), who asserts: "A key to successful international monetary agreement is for each member country to expand central bank credit smoothly as described by equation (1) to ensure that relative exchange rates do not move" (p. 46).

80. The control of domestic credit is only compatible with fixed exchange rates, as explained in McKinnon (1977).

bases (Table 2).⁸¹

This framework can be implemented even in a system where exchange rates are not irrevocably fixed. Assume a situation in which inflation differentials still exist and exchange rates are allowed to vary (within a narrow band or at realignments). Target ranges for the money supply growth would take account of differences in nominal developments. The monitoring procedure would be aimed at ensuring that these divergences are reduced and the predetermined objectives attained. A compensation mechanism would also be put in place to correct for the accounting effects deriving from exchange rate changes.⁸²

Let us examine how the adjustment process would operate in the face of disturbances. The use of indicators allows the ESCB, in its periodic monitoring exercise, to identify the origin of the shock, and agree on the corrective action to be taken. Table 3 shows how these indicators would react to certain shocks.

Consider first a country specific shock that gives rise to an excess of liquidity denominated in a given national currency.⁸³ This shock can be identified by the fact that the external component of that country's monetary base will tend to decrease, while that of the other countries

81. Targets will also be set for interventions in extra-EEC currencies in the more complex case in which these are also considered part of the monetary control mechanism.

82. Changes in the exchange rate would affect the overall asset value of the ESCB. If target ranges are determined in ecus, an exchange rate change would affect the value of these target ranges: in particular the devaluing country might be allowed to increase its domestic money supply excessively if the ecu target value for its domestic credit expansion were to remain unchanged.

83. This excess of liquidity might be due either to an increase in supply or a reduction in demand.

will tend to rise.⁸⁴ The ESCB board will assess the extent to which corrective action is required in that country and invite the member NCB to adopt such action; its domestic currency assets deposited with the ESCB would have to be reduced, thus implying that the domestic counterpart of its monetary base decreases. Given a certain (estimated) value of the multiplier, this contraction in the domestic component of the monetary base will have a restrictive effect on the targetted money supply, thereby eliminating the excess of liquidity.

Measures to counter tensions would be planned at "policy meetings", after monetary conditions in member countries have been assessed jointly. Members would be invited to act immediately after; and the decision eventually formalized through a joint communiqué, as mentioned in section 2 above. A mechanism for speeding up adjustment can also be considered if the NCB is slow to react to the commonly agreed policy. Several measures could be taken by the ESCB's board. For instance, the latter could reduce its "give back" coefficient to the NCBs: it will lend back to the NCB less than the full amount of the assets deposited, and use the remaining assets for direct transactions in the market (variable T_1 in Table 1). The NCB would not be able to offset the operations of the ESCB in view of the deposit coefficient with the ESCB. In summary, the mechanism could allow the ESCB to interact directly, possibly through its operating agent (the CMI), with the money markets. The extent to which the ESCB can undertake these operations could vary depending on the stage reached in the monetary unification

84. With still adjustable exchange rates the country's interest rate is also bound to fall with respect to the rest of the area, producing a tendency for the currency to depreciate.

process.⁸⁵

If the country-specific shock came from insufficient liquidity, an opposite mechanism could be implemented that would induce the member NCB to increase its supply of liquidity.

The mechanism could function also with less than fully fixed exchange rates.⁸⁶

Consider now the case of excess of liquidity in all the system countries, by which the targetted money supply is overshot. This would be accompanied by a fall in interest rates in every country, a decrease in all the NCBs' foreign exchange reserves, although to a different extent across countries, and the depreciation of all exchange rates with respect to external currencies. In this case the ESCB board should require all the member NCBs to reduce the domestic asset component of their monetary base (held with the

85. This type of decision could be approved by varying types of majority rule: a qualified one at a first stage, a simple majority in the second stage; see subsection d) below.

86. In stage II, in which exchange rates are not entirely fixed, financial shocks may emerge not only because of disequilibria occurring in one country's monetary conditions, but also following events that are not directly related to the behaviour of the underlying fundamentals (political uncertainties, etc. ..). Countering these disturbances could require major changes in interest rate differentials that, even if short lived, would not be desirable given the strong repercussions on financial market stability. The ESCB board could consider that in these circumstances tensions would be appropriately countered through sterilized interventions, while domestic monetary conditions would not need to be adjusted; the ESCB would therefore institute a mechanism of refinancing by which the assets deposited by the NCB whose currency was under downward pressure could be swapped against those of the NCB whose currency was under upward pressure, and thereby made available for intervention. This mechanism is analogous to that underlying the proposal for a refinancing mechanism advanced by certain EMS member countries' authorities.

ESCB).⁸⁷ The same provisions as those previously examined would be implemented in the case in which certain NCBs were slow to implement the common policy stance.

The same analysis applies if the ESCB aims at intervening in the foreign exchange market to influence the exchange rate against outside currencies. Interventions would be conducted jointly, possibly through the CMI.

In the proposed scheme, all monetary policy decisions would be taken at the ESCB level. These decisions would become more and more binding the closer the system gets to full monetary union. This would be sanctioned for instance through changes in the voting procedures within the ESCB, as described in subsection d) below. From the start this collective dimension would allow member countries' authorities to get acquainted with the new procedures, while initially maintaining a certain margin of autonomy in their decisions.

c) Extensions - As mentioned previously, the choice of the intermediate policy target does not affect the functioning of the above scheme, as long as there is a relationship between the latter and the instrument used by the ESCB. What really affects the functioning of the scheme is the choice of the policy instrument. In the foregoing, monetary cooperation was based on the use of a quantitative instrument (monetary base) for the area as a whole, and individually for each member country. In this subsection we examine the potential problems with this approach and consider an alternative instrument.

The main issue involved in the choice of the instrument is its relationship with the intermediate target. In this respect the quantitative control of the monetary base presents several problems. First, monetary base multipliers

87. When exchange rate depreciation is not seen as a consequence of internal excess liquidity, joint intervention can be foreseen, and in that case the foreign component of NCB's monetary basis would contract.

are generally different across countries, as a result of structural differences, in particular differences in commercial banks' reserve ratios. These differences will tend to narrow with the integration of financial markets, as certain regulations will have to be harmonized. However, in the immediate future divergences in monetary base multipliers add complexity to the proposed scheme, but this difficulty should not be overemphasized. Most NCBs engage in quantitative monetary targetting, and have some implicit knowledge of their own monetary base multiplier that they take into account, on the basis of pragmatic judgments, in the calibration of their policy actions. This knowledge would be internalized by the ESCB, and the definition of the national targets would have to take account of the differences in the parameters. It should also be noted that this type of problem already exists at the national level, as reserve ratios differ between the various types of commercial bank deposit (savings vs. checking).

Another problem is the instability of the multipliers. Indicators have been increasingly used in order to check the consistency between instruments and the intermediate target. Assuming the monetary base multiplier of a country is underestimated, this will presumably produce an overshooting of that country's target. If this occurs, it will be immediately reflected in the reduction of the external component of the base. The ESCB board should then invite the NCB to reduce the rate of growth of the domestic component of its monetary base. An effective monitoring procedure will therefore be instrumental for an appropriate use of the policy instrument.

Nevertheless, there may be situations of persistent financial instability in which quantitative monetary control might not be the most appropriate action. Indeed, most countries' central banks have found it preferable to use policy-relevant interest rates to attain their intermediate targets. In this case the ESCB would jointly decide the

levels and the changes in the policy-relevant interest rates, for instance regarding repurchase agreement operations. The behaviour of the NCBs' assets deposited with the ESCB would then become endogenous, and could even be used as an information variable, reflecting the policies conducted in the area, as shown in Tables 2 and 3. The maintenance of the same level of interest rates throughout the area would lead to adjustments in the quantity of the NCB's domestic currency assets compatible with the attainment of the overall target.⁸⁸ If the domestic currency assets of all the NCBs were to grow too rapidly, while the external component was decreasing everywhere, this would indicate that policy was too lax and interest rates would have to be raised everywhere. The use of the interest rate as a policy instrument would clearly make things easier for the ESCB's monetary control procedures. However, this would require a certain homogeneity in the type of operations undertaken by the NCBs, such as Lombard or Federal funds operations, so as to avoid distortionary effects.

d) The transition towards a single money - The transition from one stage to another should not imply major changes in the principles underlying the conduct of monetary policy, but only a change in certain procedures within the ESCB and in the nature of transactions. The decisions of the ESCB board concerning monetary policy would be submitted to different voting systems. We previously said that stage II should be as short as possible, and possibly skipped altogether by jumping directly from stage I to stage III. If stage II were nevertheless to exist, voting could be kept to a minimum, and

88. If exchange rates were still variable and liquidity in the country was found to be growing too rapidly, the ESCB board would invite the NCB to raise its policy interest rate. As the system moves towards fixed exchange rates, interest rates will tend to be equalized across countries; interest rate policies will be conducted at an aggregate level.

the degree of joint responsibility limited to consultations and exchanges of views. In stages III and IV all decisions by the ESCB would be taken jointly, following a vote; the majority system could vary, depending on the decision to be taken, in line with the current procedures for Community decisions.⁸⁹

The adoption from the start of the unification process of an institutional scheme for the conduct of monetary policy in the Community would avoid the problem of a possible "vacuum" of power in the transfer of responsibilities. From the operational point of view, the transition does not imply major changes in the implementation of common policies, except for the loss of the informational content for certain variables such as the external component of the national monetary bases. Certain transactions would have to be undertaken to allow for the progressive redenomination of monetary instruments in the common currency. In particular, as market forces determine an increase in the proportion of transactions denominated in the common currency, the assets and liabilities of the NCBs will increasingly be denominated in ecu. In stage IV the preparation of the ESCB's balance sheet will not require any exchange rate conversion since all the member NCBs' assets will be denominated in ecus.⁹⁰

One way to internalize this process would be to allow commercial banks to hold their compulsory reserves in ecu. This decision could actually be adopted at an even earlier stage, before the exchange rates are definitively fixed: commercial banks would reduce their exposure to

89. The Single Act considers various systems of majority depending on the decision that is to be taken.

90. Ecu denominated assets are, of course, to be considered like domestic currency assets and included in the targetted domestic credit expansion of the NCBs. In this way, foreign exchange interventions in ecus would be under the strict control of the ESCB.

foreign exchange risk on ecu deposits and thereby encourage their clients to hold their foreign currency deposits in ecus by offering relatively higher interest rates than on other currencies. In addition, the NCBs could start to conduct rediscount operations denominated in ecu with commercial banks, in particular with the aim of smoothing the functioning of the ecu clearing system. These operations should of course be compatible with the predetermined monetary objectives and decided jointly within the ESCB.

IV. The Demand Side: market development towards a common currency

1. Introduction

In chapter II it was suggested that the adoption of a single currency within Europe would enhance the benefits expected from the completion of the internal market and, in view of the time required for a new currency to develop as a market instrument, that instantaneous substitution of the old monies is unlikely. On the contrary, for a certain period of time the old and the new monies will circulate jointly. For this to happen efficiently, the ground must be prepared for the new currency to be used in all the circuits of economic activity, possibly in advance of the creation of the ESCB, to speed up the process.

Private markets have in fact already started to equip for such a change, as shown by the growing use of the future common currency, the ecu. The growth of the ecu has been favored by the expectation that it will become the European common currency.⁹¹ Given the time it generally takes for a new currency to develop, the ecu's rapid success is somewhat surprising. It is a clear signal from market participants that they are receptive to the project of currency unification and that they are willing to play a major role in it.

Progress towards currency unification can capitalize on the existing features of the ecu, which possesses several advantages that could be further enhanced.

In the next two sections, we make an assessment of the development of the ecu in private markets and examine the

91. See Levich (1987), Padoa-Schioppa (1987b), Steinherr et al. (1989).

prospects for its further growth. We then identify the main factors of strength and weakness underlying a strategy based on the market development of the ecu.

2. The development of the ecu market

A distinction is generally made between the private and official ecu. The latter is only an accounting device for the denomination of certain transactions between the monetary institutions of member countries and of the Community. In the following, reference will be made only to the private use of the ecu. An important characteristic of the ecu, which distinguishes it from other types of basket currencies, is its "open basket" nature, whereby at each point in time the only acceptable definition of the ecu is the one currently decided by the European Community. Any change in the definition of the ecu therefore affects the value of all transactions denominated in that currency, including pre-existing contracts.⁹²

The use of the ecu has developed mostly in financial markets.⁹³ In the bond market the proportion of net issues denominated in ecu has risen to about 6 percent, and the ecu ranks fifth among all the currencies of denomination. Initially, most of the issuing activity was undertaken in the international market, but more recently domestic capital markets have played a larger role. An increasingly broad range of instruments has been developed for all maturities, in particular at the short end of the

92. These characteristic aspects of the ecu are examined in Allen (1986).

93. For a more detailed survey of current developments, see the OECD Financial Market Activity, the BIS Report on the International Banking and Financial Market Developments, and the Report of the Group of experts of the Committee of Governors under the chairmanship of Mr. Dalgaard.

market. National currency equivalents of certain ecu instruments do not even exist for some of the component currencies, and they are therefore priced independently of a precise basket reference.⁹⁴ The decision of some national governments and of the European Commission to sell debt instruments in ecu has given an important impulse to the market; it has helped to set benchmarks for the pricing of ecu financial assets at the shorter end of the maturity structure.

The ecu has also developed rapidly in the banking market, and is now the sixth currency of denomination for international credit activity. The market remains unbalanced, with an excess of banking assets over liabilities that gives rise to the unbundling of the component currencies. The structure of the market has strengthened and become more efficient since the creation of the clearing system, jointly managed by the major participating commercial banks in collaboration with the BIS.⁹⁵ This system, which is truly multilateral, is now based on a same-day settlement arrangement, has become highly sophisticated and is the most efficient in the Euromarket. The embryo of a complete ecu payments system already exists.⁹⁶

In the foreign exchange market the volume of ecu transactions has increased markedly. The ecu is quoted in all major European financial centres, except Frankfurt; in some cases its fixing precedes that of the component currencies. Transaction costs have been sharply reduced and the spreads on ecu rates are often lower than those on dollar rates. In

94. For a more detailed description, see Padoa-Schioppa (1987b).

95. More than 30 banks currently participate in the system.

96. Certain authors retain that a major impediment to further development of the system is the lack of a lender of last resort (Allen, 1986). However, this needs not be an important obstacle; see Padoa-Schioppa (1987b).

the financial sphere ecu activities have acquired a high degree of efficiency and sophistication.

However, the use of the ecu in commercial transactions has remained limited, covering less than 1 percent of intra-Community trade. This is in a way not surprising since the ecu does not have legal tender status. Initiatives are nonetheless being conducted to meet the business sector's demand for more information on the uses of the ecu.⁹⁷ However, the slow pace at which the ecu is developing in this sector is restraining its growth in other sectors of activity.

Let us examine briefly the main factors underlying the success and weaknesses of the private ecu.

The main advantage of the ecu is its attractive risk-return features.⁹⁸ With stable exchange rate expectations the ecu represents an attractive instrument for borrowers in high interest rate countries and for lenders in low interest rate countries.⁹⁹ In effect, data on the ecu financial markets show that periods of expected high exchange rate variability, in particular before realignments, have hurt the growth of the ecu. Progress towards more stable exchange rates within the Community is considered by market participants as a prerequisite for greater development of the ecu.

Another important factor underlying the performance of the ecu, is the expectation by market participants that it will play an important role in the process of European

97. Surveys conducted in the Community have revealed both much interest and much ignorance concerning the potential uses of the ecu. See Association pour l'Union Monétaire de l'Europe (1988).

98. On this issue, see Masera (1986), Levich (1987) and Lomax (1988).

99. For an empirical analysis see Steinherr and Girard (1988). A different view is held by Jager and De Jong (1987 and 1988).

monetary integration. This expectation is based in particular on the explicit declaration that the ecu is at the centre of the EMS, its increasing use by Community institutions, etc.¹⁰⁰ This expectation has led financial firms to make substantial investments, aimed at acquiring strategic positions in the ecu business.

Other factors may have played a role at specific times, in particular the existence of restrictions on capital movements in certain countries. Their effect may be uncertain because in certain countries the ecu has been exempt from the restrictions affecting other financial transactions. However, the continuous growth of the ecu, even after the liberalization of capital movements nonetheless suggests that this factor has not been particularly important.

The factors that limit the growth of the ecu are to a certain extent related to those underlying its success. In particular, as exchange rates become fixed and the degree of substitutability among national currencies increases, the ecu will become similar to any other national currency and interest rates will tend to equalize, thereby reducing the diversification advantage of the ecu. Another limitation is the still precarious status of the ecu, especially in a long-run perspective. Although market participants expect it to play an important role in the process of monetary unification, there is still uncertainty about future developments. Several public official declarations, criticizing in particular its basket nature, cause doubts in the market on the real intentions of the authorities concerning the role to be played by the ecu. Other limitations come from the regulatory restrictions that are still applied to the ecu in certain countries, and from the hitherto limited information on ecu business.

100. Allen (1986) gives particular attention to this argument, and considers it as the main justification for the "open basket" nature of the ecu.

Recent studies show that the ecu market has not yet exploited all of its growth potential. From the financial point of view, the ecu's share of portfolio investments is still below optimal.¹⁰¹ In other fields the ecu has not yet shown its potential, in particular as a vehicle currency for intra-EEC transactions, a role largely played by the dollar at present.

The way to enhance the attractiveness of the ecu is to increase its ability to play all of the three functions of money. A main aspect concerning the medium of exchange and unit of account functions is of a psychological nature; it is associated with the fact that the willingness to accept money depends on expectations about the willingness of other agents to do the same.¹⁰² This factor is particularly important for an inside money such as the ecu, since for outside money there is generally the guarantee that the State will accept it as a means of payments. It is therefore likely that the ecu, more than any other money, suffers from the "infant currency" problem, which can be considered as an externality, and therefore as requiring some action on the part of the authorities. In the following we identify ways in which the latter could speed up the spread of the ecu in private transactions.

First, a clear statement by official authorities on the role that the ecu is expected to play in the process of monetary integration would reinforce the beliefs of market agents that the ecu is not only a mere product of private sector initiative, but also part of a project backed by the monetary authorities of the member countries. The latter

101. In their analysis Steinherr and Girard (1988) find that "theoretical calculations suggest a role for the ecu that by far exceeds its actual role in portfolio management." The discrepancy with the present situation is explained in terms of the remaining transaction and information costs of ecu business.

102. See Menger (1892).

could make a public announcement, stronger than those made even in the Delors Report, that any proposed scheme of European monetary integration will be based on the ecu. This could also be explicitly stated in the Treaty.

Second, all the impediments to the use of the ecu, especially of a legal nature, should be eliminated, so as to put it on a level playing field with the existing currencies of the member countries.¹⁰³

Third, the ecu market would rapidly develop and improve its efficiency if the scope for trading government issued debt instruments were increased. The ecu issuing activity of national governments has remained very limited, and has grown only recently, producing snowballing effects. A broader involvement of national governments in denominating their issues in ecus would contribute to the stability and liquidity of the market.

Fourth, since expectations of exchange rate stability are an important prerequisite for the development of the ecu in an environment characterized by less than fully fixed rates, efforts should be made to enlarging ERM participation to all member countries. Alternatively, the weight of non-ERM currencies in the ecu should be maintained within a maximum limit.

Would this be sufficient to give a major impulse to the use of the ecu and ensure that it will progressively substitute national currencies?

These initiatives would certainly have a strong impact, and could be taken immediately. Others could follow at later stages. In particular, legal tender status could be granted to the ecu, so as to ensure that contractual obligations in ecu are enforceable. In addition, banks could be allowed to hold their reserve requirements in respect of

103. The ecu is explicitly recognized as a foreign currency only in Belgium, Denmark, Greece, Spain, France, Ireland, Italy and Portugal.

ecu deposits directly in ecus.¹⁰⁴ These measures can be expected to enhance the forces of integration that will in the long-run induce market participants to use only one currency throughout Europe, even for retail transactions. However this process could be slowed down by several problems as discussed in the next section.

3. Problems and opportunities deriving from the market development of the ecu before full monetary unification

Fears have been expressed¹⁰⁵ that encouraging the development of the ecu before the final stage of the union could lead to an excess of liquidity, thus jeopardizing price stability in the Community and that if the ecu were to develop excessively, it would inevitably acquire an important role in member countries' interventions and monetary policies and possibly modify the nature of the EMS adjustment mechanism.

It should first be recalled that the ecu is not a parallel currency. The responsibility for its value and issue is not entrusted to any particular institution. In fact, the ecu is not even issued as a currency;¹⁰⁶ there is no direct outside supply. It can only be created through transactions among private agents, and is ultimately backed by the bundling of the component currencies. The ecu is an example of pure inside money that develops only through market mechanisms.

Further, given the basket nature of the ecu, its value is determined by the component currencies. Arbitrage

104. This proposal has been put forward by Gros (1989).

105. See Pöhl (1989).

106. Although the underlying definition of a parallel currency is different, the considerations developed below are consistent with Vaubel (1987).

ensures that no significant deviation occurs between the market value of the ecu and its theoretical value, i.e. the weighted average value of the component currencies.

The ecu can grow only if it can compete with the existing national currencies. The previous section examined some of the factors that influence its competitiveness, and stressed the importance of stability in terms of purchasing power. The ecu can continue to develop as a financial asset, even if it is less stable than some of its component currencies, as long as it offers a competitive rate of return and helps to diversify risk. However, if, for some reason, the ecu tends to become less stable, the demand for it will fall and private agents will substitute it with the more stable component currencies and run down their ecu holdings.¹⁰⁷ Since the ecu is an inside money, the movement out of the ecu into the component currencies will not create problems for the area's total liquidity.

In summary, in the present system the development of the ecu in private markets is, ex-ante, incompatible with expectations of its value becoming less stable. Since its stability depends on the stability of all the component currencies, the ecu cannot grow unless these are all expected to be relatively stable. The path leading towards a market determined development of the ecu is thus parallel to that leading towards increasing monetary stability in all currencies.

An important corollary to the above conclusion is that as the ecu grows in private transactions, agents will be increasingly concerned with its stability. This implies that market participants will tend to put pressure on monetary authorities to conduct policies ensuring its stability, and

107. On currency competition, see Padoa-Schioppa and Papadia (1983) and Vaubel (1978).

thereby that of all the component currencies.¹⁰⁸ The growth of the ecu represents a signal of expected monetary stability. This may, of course, not be sufficient for stability to prevail ex-post. The market development towards currency unification would greatly benefit from the adoption of a policy framework that enhances the credibility of the stability oriented policies pursued by member countries. Accordingly, the market and the institutional dimensions of the unification process become closely interrelated.

108. Market participants tend to prefer a strong ecu, as can be verified from various proposals presented by the ecu Banking Association and the Comité pour l'Union Monétaire. This preference has emerged in particular on the occasion of ecu basket revisions.

APPENDIX

In this short Appendix we illustrate the balance sheet operations underlying the creation of the ESCB in accordance with the scheme proposed in chapter III and illustrated in Table 1.

In stage IV the balance sheet of the ESCB corresponds to the consolidated balance sheets of the NCBs and the CMI. All assets and liabilities are denominated in ecus and a part $(1-\alpha)$ of the foreign assets (FA) are conferred to the CMI, in exchange for shares.

In the intermediate stages (preceding the final merger), the ESCB balance sheet is the result of the contribution by the NCBs of their domestic assets (DA), as described in the paper. With this mechanism the NCBs confer the total amount of their domestic Currency Assets (DA) to the ESCB. They are shown on the liability side of the ESCB's balance sheet, converted at the prevailing ecu exchange rate. The ESCB then makes a proportion z_i of these assets available back to the NCBs, taking account of the development of domestic liquidity in member countries. If the latter grows at a rate faster than foreseen, the ESCB invites the latter to reduce its DA by selling a part to the market. If the NCB is slow to adjust, the ESCB board can, at a stage in which it has been entrusted with such a power, reduce the coefficient z_i to less than 100 per cent, and use the remaining proportion of domestic assets to make sales, through temporary swaps of an amount T_i , directly to the market (Table 1). These operations would allow the ESCB to modify the liquidity conditions in one of the member countries, with a consequent effect on the balance sheet of its NCB.

In the intermediate stages NCBs are in charge of intervening in the foreign exchange markets, thereby

modifying the amount of FA in their balance sheet. As explained in the paper, changes in this variable represent an important information variable for the assessment of the respective monetary conditions. Part of the FA can in any case be transferred to the CMI, the foreign exchange operating branch of the ESCB, which could use these assets to intervene in the market under the directives of the latter, for the purpose of undertaking a common external exchange rate policy.

ESCB and NCB Balance Sheets at various stages of integration

Stage IV

ESCB (consolidated)		NCB _i		CMI	
$\sum_i^N DA_i^{ecu}$	$\sum_i^N L_i^{ecu}$	DA_i^{ecu}	L_i^{ecu}	$\sum_i^N (1-\alpha'_i) FA_i S_i^{ecu}$	K
$\sum_i^N FA_i S_i^{ecu}$		$\alpha'_i FA_i S_i^{ecu}$	$(1-\alpha'_i) K_i$		

Stages II and III

ESCB		NCB _i		CMI	
$\sum_i^N DA_i S_i^{ecu}$	$\sum_i^N DA_i S_i^{ecu}$	DA_i	L_i	$\sum_i^N (1-\alpha_i) FA$	K
$-\sum_i^N (1-z_i) DA_i S_i^{ecu}$	$-\sum_i^N T_i S_i^{ecu}$	$-(1-z_i) DA_i$	$-T_i$		
		αFA_i			
		$(1-\alpha_i) K$			

DA = Domestic Currency Assets

FA = Foreign Currency Assets

K = Shares of CMI held by NCB

L = Liabilities

T = Temporary swaps

S_i^{ecu} = Ecu Exchange Rate

α = Proportion of FA contributed to the CMI

z = Proportion of NCB's DA deposited with the ESCB which is made available back to NCB

N = Number of NCBs component of the ESCB; $i=1, \dots, N$

ecu(subscript) = ecu denominated assets

$$(1-\alpha_i) FA_i = (1-\alpha) K_i$$

$$(1-z_i) DA_i = T_i$$

**Targets and information variables of monetary policy
under quantitative and interest rate targeting**

	Adjustable peg	Fixed exchange rate
1. <u>Quantitative Monetary Targeting</u>		
Target variable	Domestic Components of Money Basis (= ecu deposits by NCB with ESCB)	Domestic components of Money Basis (= ecu deposits by NCB with ESCB)
Information variables	<ul style="list-style-type: none"> - national interest rates - exchange rates with dollar - bilateral exchange rates - external components of NCB's money basis 	<ul style="list-style-type: none"> - area's interest rate - exchange rate with dollar - external components of NCB's money basis
2. <u>Interest rate targets</u>		
Target variable	- national interest rates	- area's interest rate
Information variables	<ul style="list-style-type: none"> - bilateral exchange rates - exchange rates with dollar - domestic components of money basis (= ecu deposits by NCB with ESCB) - external components of NCB's money basis 	<ul style="list-style-type: none"> - exchange rate with dollar - domestic components of money supplies (= ecu deposits by NCB with ESCB) - external components of NCB's money basis

Table 3

**Signals given by information variables
following aggregate and country-specific disturbances**

	Adjustable peg		Fixed exchange rate	
	A	B	A	B
1. Quantitative monetary targeting				
r_i	-	-	-	-
r_i/r_j	-	=	NIC	NIC
s_i/s_j	+	=	NIC	NIC
s_i	+	+	+	+
s_j	=	+	=	+
R_i	-	-	-	-
R_j	+	-	+	-
2. Interest rate targeting				
s_i/s_j	+	=	NIC	NIC
s_i	+	+	+	+
s_j	=	+	=	+
R_i	-	-	-	-
R_j	+	-	+	-
Σc_i	+	+	+	+
$C_i(E_i)$	+	+	+	+
$C_i(E_i)$	=	+	=	+

r_i = domestic interest rate

s_i = dollar exchange rate (unit of national currency per dollar)

R_i = external component of the money base

C_i = domestic component of the money base

E_i = ecu deposits by NCB's with ESCB

A: monetary shock in country i (excess liquidity)

B: monetary shock in all countries of the area (excess liquidity)

NIC = No information content

+ = increase; - decrease; = indeterminate

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