

**Alternative Paradigms for Monetary Union**  
**Some Conceptual Issues**

I. Introduction

This note analyses different models of Monetary Union in terms of the degree of monetary integration they provide. The analysis suggests that there are different "degrees" of Monetary Union (MU) that are possible within the broad classic definition of fixed exchange rates plus full capital mobility.

Some of the perceived benefits from MU might come only from a very high degree of monetary integration, the appropriate model of MU would therefore depend on the reasons for which a MU is deemed desirable. For example a MU that is designed to create a European "monetary identity" would be different from a MU that is designed to yield the advantages of complete monetary integration in terms of reduced transaction costs and increased transparency of prices.

Moreover, a MU consisting only of fixed exchange rates and capital mobility could function without a central monetary authority if the monetary policy of one country serves as the anchor for the entire system, as at present in the EMS. However, in a full MU, when all monies become very close substitutes the price level of the union could no longer be controlled via the monetary policy of the centre country alone. The appropriate institutional framework for the monetary authority of the Union therefore also depends on the degree of monetary integration.

Given that the precise meaning of the concept "MU" is complex and that the degree of monetary integration has important implications for the potential benefits from the creation of a MU, Section II analyses the precise meaning of the terms "MU" and "Parallel Currency". The main conclusions from this analysis are :

1. Experience suggests that fixed exchange rates plus capital mobility are not sufficient to make different national monies perfect substitutes if national financial markets and payments systems are not completely integrated.
2. Similarly, the success of (and the very definition of what constitutes a) common or parallel currency depends on the "small print"; that is the ease with which the common or parallel currency can be used instead of national monies.
3. Monetary Union might be viewed as a dynamic process with two driving forces:
  - (i) official action, such as fixing exchange rates or declaring a certain instrument legal tender, and;
  - (ii) market developments, such as the integration of financial markets and payment systems.Both forces seem necessary to advance the process of monetary integration and they may not be independent from each other.

Section III then analyses briefly to what extent different degrees of monetary integration would yield the benefits often expected from the creation of a MU. On the basis of the principles established in Section II, Section IV then discusses alternative models of MU in terms of the currency of the Union and the organization of the authority responsible for the overall monetary policy of the Union. Section V contains some concluding remarks.

## II. Degrees of Monetary Integration

### a) The Meaning of "Monetary Union"

The term "Monetary Union" (MU) is often only considered from a macroeconomic point of view. In this optic it is often asserted that

MU is equivalent to fixed exchange rates plus full capital mobility because they imply that interest rates are equalized. However, closer inspection of actual examples of countries that maintain fixed exchange rates and free capital markets reveals that some differences in interest rates remain even in this environment. 12

These differences in interest rates may be the result of differences in the organization of national payments systems and securities markets and other legal and customary rules that affect the return on securities<sup>1</sup>. From a macroeconomic point of view these interest rate differentials are usually considered irrelevant because only differences between the theoretical construct of "the" interest rate are taken as important.

The potential for interest rate differentials that remains even in an environment of fixed exchange rates and free capital mobility can be illustrated by analysing the interest differential between the Dutch Guilder and the Deutsch Mark markets. Over the last five years (10/83 to 9/88) the Dutch Guilder has depreciated only by 0.5% against the D. Mark. Moreover, the exchange rate has never moved outside a corridor that is less than 1% wide. The Dutch Guilder has therefore behaved as if the allowed band of fluctuation had been less than  $\pm 0.5\%$ , this would be considered by many as a good approximation of a MU between these two countries. However, despite the absence of capital controls, short term (3 months) interest rates on Dutch Guilder assets of the same risk characteristics (i.e. in the Euro markets) have been on average almost 1% higher. Over the last five years D. Mark assets have therefore cumulatively yielded about 4.5% less than comparable Dutch Guilder assets and, conversely, Dutch Guilder liabilities have been more expensive by the same amount. Fixed exchange rates and capital mobility therefore leave some room for interest rate differentials. Without further information it is not possible to say whether these interest rate differentials are due to doubts in the market about the exchange rate commitment of the Dutch

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(1) Implicit in this argument is that the securities issued in each national system are denominated in the national currency.

authorities or differences between the national financial systems that are not eliminated by arbitrage in the Euro-markets.<sup>1)</sup>

The term "Monetary Union" is also sometimes taken to mean that national monies become perfect substitutes so that the economy of the union would behave as if there existed only one money. From this more microeconomic point of view it is clear that a "full" MU involves more than fixing exchange rates because the freedom to transfer funds at a fixed exchange rate from one national financial system (that is based on a national currency) to another, different, financial system (that is based on another national currency) is not sufficient to render two moneys perfect substitutes.

From the microeconomic point of view a MU implies that one money fulfills the three classic functions of money (unit of account, store of value, means of payment) for all economic agents in the Union a MU would imply much more than fixed exchange rates and free capital movements. From this point of view a MU would exist if different national monies (assuming that they continue to exist) become as substitutable as bills of different denominations of one national money. While this second definition of MU might appear extreme, it indicates that there exist different "degrees" of MU that might have different implications for the way a MU should be organized.

Some of the elements of the "small print" that distinguishes a full monetary union from the broad definition of fixed exchange rates plus full capital mobility are :

- The difference between ex-ante and ex-post exchange rate stability; that is the credibility of the exchange rate commitment matters. Can any of the effects of a MU be achieved if private agents do not expect exchange rates to remain fixed? One could argue that the G-NL case does not provide a good approximation of a MU since

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(1) The first explanation seems difficult to reconcile with the fact that over the same period the difference between long term interest rates (on government bonds) was on average about one half of the difference in short term interest rates. If doubts about the long run commitment of the Dutch authorities had been the root for the short term interest differential the long term differential should have been larger.

exchange rates just turned out to be ex-post more stable than markets had anticipated ex-ante. This raises the question of what institutional or other features of the MU would lead private markets to expect that the union will be stable.

- The remaining margins of fluctuation in exchange rates; what bands of fluctuation are compatible with "fixed" exchange rates,  $\pm 2.25\%$  as normally in the EMS,  $\pm 1\%$ (?) as under Bretton Woods or zero. (Is zero operationally possible?)
- The bid-ask spreads practiced by commercial banks. (The margins of fluctuation can be considered as the bid-ask spread of the central bank.) Even after the complete elimination of margins of fluctuation in the official parities would commercial banks still have to use bid-ask spreads to cover their transaction costs? The magnitude of these spreads would probably vary, as at present, with the size of the transaction. They might be very low for large wholesale transactions, but for smaller, retail transactions they might remain important as long as consumers prevalently use the national currency for small transactions.
- The legal tender status of different national currencies. In the absence of a common currency would it be possible to give different national currencies legal tender status in the entire Union? How could this be organized if exchange rates are not completely fixed and bid-ask spreads have not been completely eliminated? If exchange rates are fixed for legal tender purposes is there a danger that Gresham's law might operate and "bad" money would drive out good money.
- Price quotes; are prices quoted in different currencies. Consumers used to think and compare prices in one national currency might find it inconvenient to translate prices quoted in one currency into another one at any exchange rate that is different from one. The potential importance of this effect can be illustrated by the

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fact that in border regions retailers fix prices in both currencies using some round number instead of the actual exchange rate. (In the Belgian-Dutch border area 20 Belgian Francs per Dutch Guilder is sometimes used instead of the actual exchange rate which might be number like 19??)

- Different currencies might be used in different sectors of the economy; for example the wholesale financial sector, which has lower transaction costs, might use an international currency, whereas the retail sector which has higher transaction costs might use the domestic currency.

For the remainder of this note it is convenient to adopt the convention to label "macro" MU a system of fixed exchange rates plus capital mobility. This would correspond to a situation similar to the one existing at present between Germany and the Netherlands: an almost fixed exchange rate and free capital mobility, but the two national monies are not good substitutes. If there remain some doubts in the markets about the exchange rate commitment the MU would be only ex-post, if the exchange rate commitment is fully credible the MU would also exist ex-ante. It does not seem possible to decide whether the Dutch case corresponds to an ex-ante or ex-post macro MU.

A "macro" MU which totally eliminates exchange rate fluctuations would imply a closer degree of monetary integration than at present observed between Germany and the Netherlands. But if such a macro MU comprises countries with bigger and less open capital markets, such as Germany, France and Italy it might leave even more room for interest rate differentials and imply an even lower degree of substitutability of national monies.

The term "full" Micro MU will be used to indicate a situation where all monies inside the MU are almost perfect substitutes, this would correspond to a degree of integration that is similar to that existing in the BLEU. Intermediate situations will be indicated by the "degree" of MU.

An issue that will not be addressed here is to what extent the 1992 internal market programme will transform any system of fixed exchange rates into a full micro MU without further official action.

b) The Meaning of "Common Currency"

A full MU should be an area which operates as if there existed only one currency because all existing monies are perfect substitutes. At this extreme it would be meaningless to speak of a "common" or "parallel" currency since any common currency would be indistinguishable (from an economic point of view, it might have a different colour) from national currencies. The concept of a common currency becomes meaningful and its existence becomes potentially relevant only in an intermediate "stage" of MU when different monies are not perfect substitutes because of transaction costs and/or exchange rate expectations.

The same principle also applies to less extreme situations. If different national monies are not good substitutes (and if private economies of scale in holdings of transaction balances are limited) it is not likely that any of the national currencies or any other additional supranational instruments will be widely used as a common or parallel currency. Widespread use of a common or parallel currency can therefore be expected only under a high degree of monetary integration. This principle might not apply to the use of a common currency to denominate financial instruments. A common currency might be useful in international wholesale transactions even if the degree of monetary integration is low because it allows traders to diversify risk at a low cost.

The demand for the common currency (whether a national currency or a supranational basket currency like the ECU) and therefore the spread of its use would depend on the same elements that distinguish a full MU from an area with fixed exchange rates. However, it is not always clear that an increase in the degree of monetary integration also increases the demand for the common currency. Some of the factors that would influence the spread of a common parallel currency in a MU characterised by less than perfectly fixed exchange rates and less than perfectly integrated financial markets and payment systems are:

- The remaining degree of exchange rate variability; a high degree of exchange rate variability would make financial instruments denominated in a basket currency useful because it would allow issuers and investors who desire to reduce exchange rate risk to save on the transaction costs that would arise if they had to construct a new basket each time and take out positions in each of the components. This implies that a reduction in exchange rate variability would reduce the usefulness of a basket currency as an instrument for risk diversification; unless at the same time transaction costs in the basket currency decline by more than the transaction costs in the component currencies. A supranational currency defined in absolute terms, that is a currency whose exchange rate in terms of the national currencies could fluctuate even if a MU permanently links national currencies, would not benefit from the diversification motive and might be viewed as just another financial instrument.

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- The predictable or expected changes in the exchange rate of the commoncurrency against national currencies. (As opposed to the unexpected changes implied by the term exchange rate variability.) To the extent that inflation differentials in the EMS can be expected to decline it can be expected that, even if some margins of fluctuation remain, expected changes in the rates among national currencies (and therefore also the exchange rate of a basket currency) would be minor so that this element could only apply to a supranational currency defined in absolute terms. Moreover, with efficient international capital markets expected changes in the exchange rate would be reflected in the rate paid on interest bearing assets.<sup>1)</sup> The expected component would therefore affect mainly the demand for non-interest bearing instruments such as cash and travellers cheques. (And sight deposits if interest payments on these deposits are kept low by regulation.) The experience from countries with very high inflation rates suggests that the inconvenience of using another currency for retail transactions is

(1) Subject to the qualifications coming from the D.Mark-Dutch Guilder experience discussed above.



so important that even very large inflation differentials do not lead to a significant degree of currency substitution. Given that even a parallel currency that perfectly maintains its purchasing power in terms of a European consumption basket could be expected to appreciate only moderately against the strongest of the national currencies it is not likely that this factor could lead to a significant shift in demand towards such a common currency.

- The bid-ask spreads; a parallel currency would have an advantage from this factor only if bid-ask spreads (and similar transaction costs) are lower in the parallel currency than in the national currencies. As a means of denominating financial instruments a basket type parallel currency would be useful if transaction costs in its markets are lower than the sum of the transaction costs in its components. However, for retail and wholesale commercial transactions it would be convenient to use the parallel currency only if it constituted a convenient vehicle currency, that is if it was cheaper to make two transactions (national currency into parallel currency and parallel currency into other national currency) in the market for the parallel currency than one transaction in the market for national currencies. (This argument assumes both parties in the transaction desire to obtain national currencies.) In international tourism (as cash, travellers cheques or denomination for credit cards) a national currency has the advantage that in one country there would be no transaction costs whereas there would be transaction costs in all countries with the parallel currency. In this respect the national currency of a large country would always be more convenient.

- The legal tender status of the parallel currency. Would it be possible to declare the parallel currency legal tender before exchange rates are irrevocably fixed and bid-ask spreads have disappeared? Even today it is possible to use balances in ECU to pay contractual obligations by simply exchanging ECUs into national currency; the only difference a legal tender status for ECU would make is that there would be no transaction cost (due to the bid-ask

spread for the agent making the payment). In transactions between private parties the receiving party might not have any use for ECU balances and would then have to exchange ECU for the national currency it needs, the receiving party might therefore prefer to be paid in national currency. Or there might be a Gresham's law type effect in the sense that unwanted ECU balances would always be used first to pay off contractual obligations. Would this lead to a general use of the ECU and make ECU balances a convenient medium of exchange? If the exchange rate of the parallel currency is fixed for legal tender purposes but there is some uncertainty about market exchange rates Gresham's law would presumably operate if the parallel currency is of the basket type.

- The existence of (official) bank notes and coins; this seems to be the only instrument that is at present not available in ECU. Would the act of issuing notes and coins be possible without making these instruments legal tender? Would there be any demand for this form of cash? If not, what could be done to generate such a demand?
  
- The use of the parallel currency for accounting and pricing purposes. It might be convenient for large corporations with widely dispersed sales to quote one European price (net of local taxes) in the parallel currency. This use of the parallel currency would therefore seem to depend on the extent to which the entire Union can be viewed as one market. Will this be achieved by the 1992 programme?

Money is useful only to the extent that it is accepted by others. If a common currency is initially used only by a few it will remain of limited usefulness, the same way a telephone becomes useful only if there are other telephones to be reached. There might therefore be important external economies of scale in the use of a common currency.

A useful definition of the term "common currency" would be an instrument that fulfills the three functions of money, perhaps to a varying degree, in all or most regions of the MU. This definition does

not imply that the common currency has to be embodied in notes and coins issued by a central authority or that it has to be legal tender. But the act of printing (official) bank notes and coins and of making the common currency legal tender would have important political and economic implications. It will therefore be convenient to refer to a "market c.c." as a situation in which private market participants use a financial instrument as money throughout the union. A "full c.c." will be taken to refer to a situation in which this financial instrument is officially recognized to the extent that it is declared legal tender and/or bank notes are printed by an official institution.

Two issues that will not be addressed here are: 1) whether the removal of barriers to the integration of financial markets and payment systems under the 1992 internal market programme would lead the markets to adopt one currency throughout the Community as a parallel currency; and 2) whether this parallel currency will be one of the national currencies or a supranational currency like the ECU.

For the degree of monetary integration it is irrelevant whether the common currency is one of the national currencies or an additional supranational currency. However, if one "strong" national currency became a parallel currency this would lead to a transfer of seigniorage towards the country that issues this "strong" currency because such a process of currency substitution could lead to an increased demand for monetary base in that currency. Taking into account only the cash component of the monetary base and assuming that the process of currency substitution goes towards the DM the potential magnitude of such a transfer of resources can be calculated by noting that total currency in circulation of the Community minus Germany is about equal to 150 <sup>6</sup> billion ECU. Each percentage point of currency substitution, that is, each percentage point shift of cash holdings of private agents into D.Marks, would amount to a transfer of about 1.5 billion ECU from the rest of the Community towards Germany.<sup>1)</sup>

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(1) From an economic point of view this transfer is just a zero interest rate loan. The monetary base in Germany would rise proportionally about 3 times the shift out of holdings of other currencies without any inflation in terms of the German consumption basket.

The transfer of seigniorage might be larger if the shift in cash holdings is accompanied by a shift in holdings of sight and time deposits. A shift in the currency denomination of sight and time deposits, perhaps accompanied by a shift of these deposits towards banks headquartered in the strong currency country could lead to complicated issues under the home country control principle.

### III. Costs and Benefits of Different Degrees of MU

Discussions about the costs and benefits of a MU have usually not taken into account the idea of different degrees of MU. It might therefore be useful to analyse what costs and benefits can be obtained from different degrees of MU. (The debate about the desirability of a MU for Europe at this stage might then be changed into a debate about the desirable degree of MU given the degree of integration of financial and other markets and given the benefits that are expected from the fixing of exchange rates.)

The costs and benefits of a MU that are most often discussed are:

From a macroeconomic point of view:

- 1) (Cost) A MU would eliminate an instrument or mechanism of adjustment that might be needed to offset the effects of shocks to demand and supply of the products of regions of the MU. Such shocks would require some adjustment in real exchange rates or relative wages inside the Union. To the extent that nominal wages are not flexible and labour is not mobile the nominal exchange rate might be an important instrument of adjustment.
- 2) (Benefit) A MU would also eliminate the possibility for the monetary authorities of the regions of the MU to use (unanticipated) monetary policy to affect employment or the real interest rate paid on public debt. If it can be assumed that the

market correctly anticipates these policies and that such policies are not effective in the long run they would tend to lead to excessive inflation rates. A MU would therefore make it easier to achieve low inflation rates if the institution that determines the overall stance of monetary policy for the MU has a higher degree of credibility with the markets than the individual national authorities.

From a microeconomic point of view :

- 3) (Benefit) The elimination of exchange rate variability should lead to an increase in trade since it reduces a source of uncertainty.
- 4) (Benefit) A common currency (or an equivalent degree of monetary integration) would increase the transparency of prices and in general eliminate transaction costs on inter-regional trade.

From a political point of view:

- 5) (Benefit) The creation of a MU would give Europe a "monetary identity" and would increase the weight of Europe in the rest of the world.
- 6) (Benefit) The creation of a MU is a necessary condition for the stability of the internal market to be achieved by 1992. According to this argument the inconsistency of a) fixed exchange rates, b) integrated capital markets and c) autonomy for national monetary policy risks to destroy the EM once capital movements have been liberalized. This would then put the entire 1992 programme in jeopardy. The creation of a MU, or more precisely abandoning the drive to preserve autonomy for national monetary policy, would therefore be necessary to preserve the EMS and the entire 1992 programme.
- 7) (Benefit) The creation of a MU would diminish the exposure of the member economies to shocks coming from the outside.

Table 1 provides an overview of these potential costs and benefits of MU and indicates schematically the extent to which they will be realised under different degrees of monetary integration.

The conceptually clearest case is that of a full MU since it is apparent that a full MU would imply all the costs and benefits listed above.

A macro ex-ante MU (credibly fixed exchange rate with capital mobility but with separate national financial markets and payments systems) would not yield (4) - the gain in transparency of prices - and it is not clear whether such a MU would contribute to (6) - the success of the 1992 programme. Such a monetary union would not in itself create a European monetary identity, item (5), except to the extent that it is accompanied by the emergency of a parallel currency.

A macro ex-post MU (fixed but potentially adjustable exchange rates that are in fact not adjusted) would fully imply only the cost of losing the degree of freedom for adjustment. To the extent that the exchange rate commitment is not fully believed by the markets and the gain in terms of credibility might not be fully realised. The gains from the elimination of exchange rate variability might also not be fully realized since traders would still feel inter-regional trade could be subject to exchange rate variations.

#### IV. Alternative Models of Monetary Union

This section considers alternative models of MU in terms of the currency of the Union and in terms of the organization of the authority responsible for the overall monetary policy of the Union. These different models might be viewed as successive phases of an evolutionary process that deepens the MU, but conceptually each model could also be set up without going through any preliminary stages. The presentation will proceed from the macro MU model to the full MU with one common currency, however, this is not meant to suggest that this sequence is desirable or that the full MU is an inevitable last step.

At one end of the spectrum is the decentralized model, in this model there would be no central authority nor a single common currency; national central banks and currencies would continue to exist. National monetary authorities would retain their full autonomy, subject only to the constraint that exchange rates would be fixed.

This model seems to be suited for a macro MU provided that an agreement can be reached about an anchor for the overall monetary policy of the system. It is not clear how in such a system the commitment of the national monetary authorities not to use the exchange rate could be made credible. The confidence of the market that exchange rates will next be adjusted might therefore be low so that the decentralized model might imply that the macro MU is in fact only an ex-post macro MU.

With a MU organized this way private agents would be free to use the currency that constituted the most efficient means of transaction, unit of account and store of value, in this sense there would be competition among the national currencies and potentially also with a supranational currency such as the ECU. This would not pose a problem for the decentralized model as long as this currency competition does not affect the stability of the demand functions for the national monetary aggregates.

In the middle of the spectrum is the federal model. National monetary authorities would retain some discretion in the way the overall monetary policy stance of the system is adapted to reprisal conditions because, for example, instruments of monetary control might differ.

This model seems to be suited to a range of degrees of monetary integration. The existence of a central institution would appear to offer the markets some guarantee that exchange rates will stay fixed, this model should therefore imply at least all ex-ante macro MU. Within such a model considerable currency competition and currency substitution could take place. The central institution could be made

responsible for the management of a supranational parallel currency, for example the ECU, if it existed. Given the flexibility in the mix of centralized decision taking and national autonomy interest in such a system it might also be possible to organize a full MU this way.

At the other end of the spectrum is the centralized model, with the common currency and one central authority that replaces existing national currencies and central banks. This model is conceptually the clearest that would be suitable for a full MU. The form of the central monetary institution might be of the federated type, but with one common currency and integrated financial markets and payment systems the members of the system might only have a degree of autonomy left, that is similar to the one left for the members of the US Federal Reserve System.

#### V. Conclusions

The term "Monetary Union" contains potentially more than the standard definition of fixed exchange rates plus capital mobility. Indeed, MU might be more carefully viewed as a dynamic process in which two driving forces interact. These forces are official action and market development. Official action sets the broad framework by fixing exchange rates, removing barriers to financial market integration and by declaring certain instruments legal tender; market developments then determine the economic content of this framework. The dynamic element of this process implies that it is convenient to imagine this process as leading to successively higher degrees of monetary integration up to the last stage of a full MU that is equivalent to having one currency; however, the final stage of a full MU is neither inevitable, since it depends on some official action, nor necessarily desirable.



Costs and Benefits of MU

Type of Costs and Benefits :	Type of MU:	Macro MU		Full MU
		ex-post	ex-ante	
<u>Macroeconomie:</u>				
1) Loss of degree of freedom for adjustment (Cost)		Yes	Yes	Yes
2) Elimination of temptation to use surprise inflation (Benefit)		Not fully, if not perceived by market	Yes	Yes
<u>Microeconomie:</u> (Benefits)				
3) Increase in trade due to reduction in exchange rate variability		Not fully, if not perceived by market	Yes	Yes
4) Gain in transparency, elimination of residual transaction costs		No, partially yes if market c.c.?	No, partially yes if market c.c.?	Yes
<u>Political:</u>				
5) Necessary condition for 1992		?	?	Yes?
6) Creation of European Monetary Identity (Benefit)		Yes if full c.c.?	Yes if full c.c.?	Yes
7) Less exposure to outside disturbances		?	Yes?	Yes