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The main objective of this study is to search, using both theoretical analysis and empirical evidence for the European case, for the strategy to be followed for the creation of a monetary union among a group of countries, and to derive the conditions which have to be fulfilled in order to make such a strategy viable.

The theoretical foundations for the creation of a monetary union are set out. The European realities suggest gradualistic approaches. Theoretical analysis of the strategy of economic policy coordination takes place in terms of all of the above considerations. Analysis then follows on the extent to which this strategy, implemented in Europe since the early seventies, has been successful. Finally, in the light of this analysis and analysis of other proposals, a conclusion is reached on which should be the preferred strategy, and how it should be established successfully.

The move towards exchange rate fixity has implications for members' objectives and policies. The European arrangements were inadequate and did not pay sufficient attention to important issues which remained unsolved. Economic discipline was not forced and members' objectives diverged considerably. Policies did not depict any coordination pattern. As a result the 1972 intra-European exchange rate arrangements failed. Other undesirable implications also followed.

Policy coordination still seems to be the preferable approach provided that important changes take place, and measures to eventually develop centralisation are taken.

The decision to create a European monetary system is judged in view of these conclusions. Major weaknesses remain and the system's ability to guarantee long-run stability is questioned. Important changes are necessary for the Community to embark on

the path to a monetary union. Indications are not encouraging, while important obstacles to the changes remain.

ON THE FORMATION OF THE EUROPEAN MONETARY UNION

by

Panayotis Demitrios Alexakis

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PREFACE

The main objective of this study is to look for the way to move towards the creation of a monetary union in Europe. That is to search, on the basis of both theoretical analysis and empirical evidence for the case of Europe, for the strategy to be followed for the creation of a monetary union among a group of countries, and to derive the conditions which have to be fulfilled in order to make such a strategy viable. Theoretical analysis of the strategy of economic policy coordination takes place in terms of these considerations. Analysis then follows on the extent to which this strategy, implemented in the European Community since the early seventies, has been successful. Finally, in the light of both theoretical and empirical analysis and analysis on other proposals a conclusion is reached on which should be the way, and what might have to be done to establish it successfully in order to move towards a European Monetary Union.

The study is divided into three parts:

The first part, chapters one to three, attempts to set out the theoretical underpinnings for the creation of a monetary union. It answers questions like what is a monetary union, why it may be desirable among a group of countries and how to move towards its creation. The political realities in Europe lead to the necessity of choosing strategies based on gradualism. The policy coordination strategy is one such strategy, and the one chosen for the case of Europe. One has therefore to analyse both what such a strategy implies in terms of members' objectives, and policies that have to be followed for that purpose.

The second part, chapters four to six, presents the empirical

analysis of the case of the 1972 European exchange rate arrangements, whose ultimate goal was the creation of a monetary union by 1980.

Firstly the extent to which the decisions taken were appropriate and sufficient, and the prospects of success are analysed. Secondly, it is examined whether the implementation of the exchange rate scheme was successful, i.e. to what extent members followed consistent policies and achieved the level of objectives that would guarantee that level of nominal exchange rate fixity among them which would bring forth the expected benefits.

The third part, chapters seven and eight, refers mainly to the future prospects of a monetary union in Europe. Given the earlier theoretical and empirical analysis, it attempts to answer the question of whether the coordination strategy is the most preferable way to move towards nominal exchange rate fixity among a group of countries or whether other gradualistic approaches should be chosen. Specifically it deals with the Manifesto approach based on the introduction of an inflation proofed common parallel currency, to eventually replace all national member currencies under the market forces process. Then in the light of this and all previous analyses, the new European exchange rate arrangements of December 5, 1978, are analysed. The extent to which they were appropriate and sufficient and avoided possible mistakes of the past is discussed. Analysis of the as yet short period of the implementation of the European monetary system follows, and conclusions are drawn. Finally general concluding remarks from all above analyses follow with respect to the future of a monetary union in Europe.

The content of individual chapters is as follows:

Chapter one deals with the derivation of the necessary and sufficient conditions for a monetary union. The necessary conditions refer to the main components of a monetary union. The establishment of the sufficient conditions goes beyond this usual interpretation of a monetary union. They are derived out of theoretical analyses which try to establish the appropriate policy mix in open economies under fixed exchange rates, combined with what is happening in the real world. Many of these points will be analysed in more depth and consolidated in the following chapters.

Chapter two analyses the various approaches to the determination of the appropriate domain of a monetary union, based both on the traditional single criterion approach and the costs versus benefits approach. Then it applies them for the case of the European Community. Conclusions are drawn on the extent to which the latter could constitute a desirable monetary union. The degree of economic interdependence among the European Community members and also between them and the United States of America is analysed here because of its relevance to the above question, and since it emphasises - given its implications - policy cooperation among a group of interdependent countries. Economic interdependence here does not rely exclusively on import and export shares. Capital transactions among members are also analysed. The analysis attempts also to examine the extent to which economic fluctuations are transmitted among member countries through interdependence and the extent to which they underline common policies to be followed among the interdependent members.

Chapter three has a threefold purpose. Firstly, it analyses the concepts of internal and external balance for a single

country and for a monetary union. Then it shows that when moving to form a monetary union, through the policy coordination strategy, the main objective refers to the external balance of each member. Secondly, given the necessity of compatible external balance situations among members, it analyses the determinants of the external balance, and hence the exchange rate, both in the long-run and in the short-run. Thirdly, based on these determinants, it outlines the policies that members have to follow in order to achieve external balance compatibility. The importance of inflation as the major long-run determinant leads to the analysis of inflation, and the potential implications stemming from achieving inflation similarity among members.

Chapter four begins by analysing the implications that the policy coordination approach entails in terms of the members' monetary and fiscal policies. Then it analyses the 1972 arrangements for economic and monetary union in Europe and examines whether they were sufficiently sound to bring forth a successful monetary union in the European Community at that time. The difficulties encountered in the coordination approach for the case of the European Community, and the modifications in the strategy required for the transitory stages to the monetary union are analysed. It also deals with other important implications stemming directly from these arrangements beyond the general ones analysed in earlier chapters.

Chapter five deals with part of the empirical analysis of the Snake period, in the light of what was stressed in the previous four chapters. Three major factors would contribute to the success of the venture: firstly, policy coordination, including the process by which it would be achieved, would harmonise members' objectives and render exchange rates fixed

among them. Secondly, abolition of exchange controls would bring forth a necessary ingredient of the monetary union, namely currency convertibility. Progress on this matter would also facilitate the coordination and unification process, keeping in mind the automatic adjustment that could take place between regions through factor mobility and the fact that financial market integration within the European Community would make supply and demand pressures in any individual country spread to other national markets. Interdependence would rise, as would the inevitability of members following more dependent and hence more coordinated policies among themselves. Thirdly, an effective regional policy would, in certain cases, be necessary within the coordination strategy for monetary unification. By analysing the progress made in these factors one could come to conclusions regarding the degree of success of the European exchange rate arrangements implemented on April 24, 1972. The evolution of members' exchange rates and the degree of joint fluctuation are analysed both in the long-run and in the short-run. Then analysis concentrates on the coordination achieved both on the long-run and short-run determinants of exchange rates among the members. Attention is paid to national internal and external balance objectives as well as to the instruments and targets which bring forth the desired evolution in these objectives. Analysis of the short-run determinants is based on the asset market equilibrium approach and its implications for policy variables. Interest rate differentials both covered and uncovered are analysed. Further, given the importance of expectations and the necessity of predictability and stability of policy variables, the performance of the latter is analysed. Attention is also paid to uncertainty and risk, the effects of destabilising speculation as well as those of

non-monetary shocks, both internal and external. It was stressed in the previous chapters that, given the incomplete effectiveness of policy coordination during the transitional stages to a complete monetary union, intervention would also be needed to contribute to maintaining the exchange rate arrangements. What is more, it should be of a non-sterilizing nature. Econometric analysis is undertaken in order to detect the extent to which national monetary authorities implemented this rule. Regression analysis under ordinary and two-stage least squares, based on a reduced form of a macroeconomic model, is used to analyse international capital movements for Belgium, the Netherlands, Denmark, France and Germany. Turning to convertibility and financial market integration, the progress of capital control dismantling is assessed, as is what has to be done for free capital mobility to be established within the European Community. Financial market integration is analysed in terms of the concept that focuses on interest rates in various countries. The analysis takes the form of examining levels of interest rates as well as econometric testing of the interest parity theory. Finally the effectiveness of the implemented regional policy is analysed. The reasons for its inadequacy are stressed as well as the changes that are required, if it is to play the expected role in facilitating progress on monetary integration. The chapter ends with an assessment of the willingness of members to follow "European" policies.

Chapter six analyses firstly the main disadvantages for which the fixed exchange rate system has been criticised, specifically those of the burden of policy adjustment and delayed parity realignments. Analysis concentrates on the extent to which Snake participants shared equally the burden of establishing compatible external balance situations, or whether it was

a certain group of them that bore most of the adjustment burden. Also it analyses the extent to which members adjusted acequately and whether Snake stability was kept by other means. Further, given the economic realities in Europe, parity realignments could not be excluded during the transitory stage. we examine whether the parity realignments implemented were timely and what might have to be done towards this end. Both of the above questions are also considered for the case where all major members participate in the Snake; whether they would make thinks easier or more difficult during the transitory stages to the monetary union. Then the implications of the absence of a joint external exchange rate policy are analysed,i.e. what members should do to establish such a policy as well as what would have to be done on a world basis given that European stability cannot be achieved or guaranteed in the absence of world stability. Final conclusions stemming from the Snake period follow.

Chapter seven proceeds to deal with the various strategies which exist for the creation of a monetary union in the EEC. The Coordination strategy and the Centralisation strategy are compared with the Coordination-cum-Centralisation strategy. The advantages and disadvantages of each strategy are analysed and conclusions are drawn regarcing the strategy to be adopted for the gradual creation of a monetary union in the EEC.

Chapter eight refers to the European monetary system. The factors that led to its creation,and the soudness and adequacy of the arrangements are analysed. To what extent they took into account crucial issues which had remained unsolved in the past and which contributed to the failure of the 1972 exchange rate

arrangements are dealt with. Such issues would greatly determine the degree of success of this new venture. New implications are also analysed stemming from the decision to create in the future a European Monetary Fund, and to develop the European Currency Unit. These implications mainly refer to the relation between the European monetary system and the international monetary system. Analysis of the early stages of the functioning of the European monetary system follows, concentrating on the extent to which coordination and other crucial issues developed to bring forth exchange rate stability among the members of the European monetary system, indicating the degree of success of the system

Chapter nine aims firstly, to state the thesis and secondly, to relate the analysis contained in the preceeding chapters to the conclusions reached.

The various strategies,which were derived for the creation of a. monetary unionin the EEC,are considered and the strategy which the EEC members should follow is proposed, as well as the conditions which have to be fullfilled during the monetary integration process.

Then,it refers to the analysis on which the thesis is based. Firstly, it deals with the theory which isrelevant for the monetary integration process,and analyses the policies which members have to follow under the various strategies. Secondly, it analyses the implementation of the EEC exchange rate arrangements,which were based on the coordination strategy, and examines the ability of this strategy to leadto a monetary union in the EEC. Thirdly,it deals with the ability of the centralisation strategy to lead to a monetary union.Finally, it analyses why the coordination-cum-centralisation strategy should be preferred to the other strategies available.

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LIST OF ABBREVIATIONS

API = Average Propensity to Import

BWS = Bretton Woods System

CAP = Common Agricultural Policy

CPC = Common Parallel Currency

CPI = Consumer Price Index

CRI = Common Rate of Inflation

CU = Customs Union

DCE = Domestic Credit Expansion

DEM = Dual Exchange Market

EC = European Community

ECOFIN = Economics and Finance Committee

ECU = European Currency Unit

EDF = European Development Fund

EEC = European Economic Community

EMCF = European Monetary Cooperation Fund

EMF = European Monetary Fund

EMS = European Monetary System

EMU = Economic and Monetary Union

EU = Economic Union

EUA = European Unit of Account

FEM = Foreign Exchange Market

FRS = Federal Reserve System

IB = Internal Balance

IE = Internal Equilibrium

IMF = International Monetary Fund

IMS = International Monetary System

IMR = International Monetary Reform

IRD = Interest Rate Differential

MABP = Monetary Approach to the Balance of Payments

MB = Monetary Base

MCA = Monetary Compensatory Ammounts

MI = Monetary Integration

MPI = Marginal Propensity to Import

MU = Monetary Union

NRU = Natural Rate of Unemployment

OCA = Optimum Currency Area

PCH = Phillips Curve Hypothesis

PPP = Purchasing Power Parity

PSD = Public Sector Deficit

SDR = Special Drawing Right

SOE = Small Open Economy

SSC = Small Snake Countries

STMSM = Short Term Monetary Support Mechanism

VSTCM = Very Short Term Credit Mechanism

WR = Werner Report

XB = External Balance

XE = External Equilibrium

Countries

AUS = Austria

B = Belgium

Benelux = Belgium-Netherlands-Luxembourg

BLEU = Belgo-Luxembourg Economic Union

CN = Canada

D = Denmark

F = France

G = Germany

It = Italy

Ir = Ireland

J = Japan

L = Luxembourg

N = Netherlands

S = Sweden

UK = United Kingdom

USA = United States of America

Currencies

BFr = Belgian Franc

DKr = Danish Krone

DM = Deutsche Mark

DG = Dutch Guilder

FrFr = French Franc

IRL = Irish Pound (Punt)

LFr = Luxembourg Franc

Lira = Italian Lira

NKr = Norwegian Krone

SKr = Swedish Krone

£ = Pound-Sterling

US$ = US Dollar

PART ONE

CHAPTER ONE ON THE DEFINITION OF THE MONETARY UNION

1.A. The Meaning of Monetary Integration

Corden (1972) in his comprehensive essay, asserts that monetary integration has two components. (a) The exchange rate union, an area within which exchange rates bear a permanently fixed relationship to each other, even though in unison, they may vary relative to non-union countries[1], and (b) currency convertibility, that is the permanent absence of exchange controls for both current and capital transactions within the area. While (a) is required to promote free trade among the union members, (b) is related to free factor mobility and is the principal element of capital market integration - a unified capital market free of capital movement restrictions - within the union. The latter is necessary in a monetary union, not in customs unions or free trade areas.

MI takes place when the exchange rate union is combined with capital market integration.

Although this seems to be the usual interpretation of MI, it does not establish sufficient conditions of an MU.

1.B. Requirements for Monetary Integration

1.B.a. Implications for National Monetary Independence

In order to derive further requirements that an MU necessitates, one should firstly go to earlier contributions which tried to establish the appropriate policy mix in open economies with fixed exchange rates. The initial efforts are attributed to Mundell (1968) who produced two main results, one in comparative statics and one in dynamics. The former was the relative superiority of monetary policy in achieving external policy aims; while both fiscal and monetary policy - represented by the budget surplus or deficit and the level of interest rates

respectively - may help to match demand and supply in domestic markets and to balance the current account, monetary policy has, through its impact on capital flows, an additional effect on the overall external balance. The dynamic corollary of this was the principle of effective market classification: in a system without centralised simultaneous decision making with respect to both instruments, an optimum would nevertheless be approximated by assigning each to the target on which it has a comparative advantage i.e. monetary policy to the XB target.

However, subsequent work by Mundell (1971) and Swoboda (1972) (1973), while retaining this basic conclusion, underlines its very short-run nature[2]. This work has also moved to clarify the conditions under which monetary policy in the longer run has external effects only. This analysis is summarised by the proposition that, in an open economy, a once and for all change in the domestic assets of the central bank - through open market operations or changes to lending in private banks - alters the equilibrium value of the domestic national money stock in proportion to the size of the country in the world economy. The process equalises the relative changes in money stocks and price levels between countries. This conclusion relies on three basic assumptions: (a) that the economic system is stable, (b) that a domestic credit expansion tends to generate an external deficit, and (c) that such deficit reduces the domestic money supply. The third assumption does not hold in reserve currency countries, or in economies where automatic sterilization operations are undertaken. But this leaves a wide area of applicability for the model. The proposition in its extreme simplicity does not rely on the existence of capital movements sensitive to changes in relative monetary conditions between countries. Indeed, the process will take place in their absence. But the speed of

adjustment to the new equilibrium will be faster the greater the sensitivity of capital movements and the share of traded goods in total demand. While the above proposition is one of comparative statics, similar results have been derived in comparative dynamics, see Mundell (1971), Thygesen (1973). An acceleration in DCE does not sustain a parallel acceleration in money stock; a convergence of growth rates of the latter and of inflation rates is assured through the redistribution of international reserves.

It can be seen that exchange rate fixity coupled with capital market integration in a group of countries, could deprive each of them of using monetary policy for domestic stabilisation purposes. Monetary independence is lost. The influence of high capital mobility necessitates the level of domestic money supply that satisfies XE. Authorities, by losing the ability to achieve quasi-equilibrium external targets, have lost the instrument of using monetary policy for pursuing the level of internal objectives they want, unless at the level of XE internal objectives are achieved too. Attempts by the authorities to change their national money supply under conditions of perfect capital mobility - common interest rate within the union - would affect capital inflows and outflows, while money supply would remain unchanged.

An MU is defined as the area where exchange rates are fixed among members, with no fluctuation margins, and capital market integration has taken place. This then implies loss of national monetary policy independence. Monetary policy is carried out at the union level.

1.B.b. The Real World, the Small Open Economy and Modifications to the Monetary Theory of the Balance of Payments

It has been suggested that if either flexible exchange

rates or controls are introduced, the constraint on national monetary policy no longer applies. The strength of monetary policy will be enhanced and that of fiscal policy will be completely emasculated, see Mundell (1963), Tower-Willet (1976). However the validity of such a proposition may be questioned if one is to adapt the Mundell model in the economic realities of the seventies and especially to the case of SOEs. Mundell's proposition about the impotence of monetary policy under fixed exchange rates, does not seem open to question. Unless capital mobility can be prevented in some way, it will be impossible to get control over nominal money supply. His results, however, have been recently questioned by Niehans (1975), Turnovsky and Kingston (1977) and Casas (1978), among others. An argument against the Mundell model taken from Kelleher and McCarthy (1978) runs as follows:

The original Mundell model may be written;

$$E\ (Y,\bar{r}) + \bar{G} + B\ (Y,\overline{\Pi}) = Y \qquad (1)$$

$$\bar{M} = L\ (Y,\bar{r}) \qquad (2)$$

(1) and (2) determine Y and $\overline{\Pi}$

where E = domestic expenditure, Y = output, G = government spending, B = trade surplus, r = interest rate, $\overline{\Pi}$ = exchange rate, M = money stock.

But Y can be determined by (2) above, since it is the only endogenous variable. The model is recursive, with the value of Y determined by the money market feeding into the goods market to determine $\overline{\Pi}$. The money and fiscal multipliers are:

$$dY/dM = 1/Ly \text{ and } dY/dG = 0 \qquad (3)$$

Ly is the income slope of the demand for money function. Results in (3) are the standard Mundell results and are used to demonstrate the potency of monetary policy under flexible exchange rates. However an objection to Mundell's model is

that for an SOE it is hardly reasonable to assume both a flexible exchange rate and a rigid price level, except in the very short run. If we let prices vary with the product of the world price level and the exchange rate, an SOE assumption more in line with the other assumptions on which the model relies, we get an augmented model of the form:

$$P = \bar{\Pi}.\overline{PW} \qquad (4)$$

$$E = (Y,\bar{r}) + \bar{G} + B(Y) = Y \qquad (5)$$

$$\bar{M}/P = L(Y,\bar{r}) \qquad (6)$$

where P = domestic price level and PW = world prices

(4) is the SOE price-taker assumption. (5) is identical to (1) except that $\bar{\Pi}$ has been deleted from the trade function - with prices also flexible this would no longer make sense. (6) is the demand for real balances.

These alterations, which seem more consistent with an SOE, reverse policy conclusions. Output is completely determined in the goods market and the exchange rate is determined in the money market so:

$$dY/dG = 1/(1-Ey-By) \text{ and } dY/dM = 0 \qquad (7)$$

which are the same standard results as under fixed exchange rates. Monetary policy therefore is ineffective under either regime for domestic stabilisation purposes.

The writers above deal also with such additional questions as the role of expectations, the wealth constraint, the government's budget constraint, the role of interest rates, capital accumulation, among others. They conclude that Mundell's flexible exchange rate conclusions are questionable. When an SOE moves from flexible to fixed exchange rates, it may well be sacrificing nothing in the area of monetary policy effectiveness. MI for an SOE may involve giving up a policy instrument which one would not choose to use in any event.

Arguments of fixed exchange rates could similarly apply under the adjustable peg with narrow fluctuation margins. Looking at the post-war period, however, theory as stated above seems to be a poor approximation of reality. DCE growth rates and inflation rates have differed significantly between countries. If one looks at the experiences of major industrialised countries, swings in the XB do not appear to have been closely associated with differential rates of credit expansion , see Thygesen (1973). Modifications to the theory seem to be necessary.

Parkin (1972) develops a model of the inflationary process in an open economy which integrates the MABP theory with the expectations theory of inflation so as to make clear the adjustment process involved in the MABP. He distinguishes between traded goods determined by world supply given to the country, and non-traded goods. Assuming that the world is in full equilibrium and the economy expands its domestic credit, an attempt is made to run down the increased money balances. The demand for traded goods rises. The country is facing an elastic supply curve from the rest of the world, satisfying its demands at the prevailing price levels, and it incurs an external deficit. Further, part of the money goes to domestic goods. Their prices rise and wages rise, since the economy is in full equilibrium. Exports are affected and the external deficit rises. Inflation in this economy is higher than the world level. As the process continues, however, the country eventually incurs an external deficit such that it loses reserves at a rate proportional to the DCE rate. Its inflation then equals that of the rest of the world(3). However the country still loses reserves and such a process cannot go on for ever. It will

either reverse its DCE growth rate or change its exchange rate. What is important in Parkin's model is that the inclusion of the non-traded sector, whose prices rise, dampens the adjustment process. Also a differential DCE process could continue until such time as domestic policies or exchange rates are adjusted to stop reserve loss or accumulation. The self adjusting mechanism of the MABP cannot be relied upon to bring about XE.

Kouri (1975) suggests that the theoretical models appearing in the literature, like that of Parkin as well as those of Dornbusch (1973) and Krueger (1974), although giving an explanation of the fact that under fixed exchange rates different inflation rates may prevail, all assume fully employed economies with flexible prices. Thus the theory of inflation that they imply is at best a long-run one. It would seem clear that changes in unemployment could generate, at least temporarily, changes in wage and price inflation quite independently of what is happening in other countries. If all of this is granted the process by which inflation rates are equalised becomes of great importance. Parkin did not assume capital flows. This main modification of the monetary theory of XB - by including capital flows - was developed in the late sixties. Theoretical and empirical work in this area has consisted mainly of the extension and application of the portfolio selection model developed by Tobin (1969) and others, notably Branson (1968) and Branson and Hill (1971). Later, Porter (1972), Kouri and Porter (1974), and Kouri (1979), derived a capital flow equation from a general equilibrium model, and found evidence supporting the thesis that capital flows may be viewed as a mechanism whereby excess demand for, or supply of, money is eliminated. One can see under the new developments, the effects of the

monetary policy in an open economy. Assuming absence of capital flows, as Parkin did, there is a direct link between domestic inflation, the current account and the money supply, and a specie-flow mechanism of a kind is in operation, assuming no sterilization. Under perfect capital mobility, however, there is no direct link between the current account and the money supply since, as evidence shows, capital flows completely offset liquidity effects of the current account(4). The central proposition that, with fixed exchange rates inflation rates must be the same in the long-run still holds - allowing for index number problems arising from changes in relative prices - but the adjustment process is no longer the same. The current account no longer has a liquidity effect, but it does have a wealth effect. Changes in the current account, of course, have the Keynesian multiplier effects on aggregate demand, and thereby on the domestic inflation rate. In addition to these two channels of imported inflation there is the direct effect of costs of imported raw materials. Also to the extent that internationally traded goods are close substitutes one would expect their prices to be equalised quite swiftly - ignoring transport costs. On the other hand capital flows accommodate inflation, whether it is imported or domestic in origin. An increase in domestic inflation will increase money demand. If this is not met by domestic credit expansion, it will be met by capital flows. Thus domestic monetary policy is frustrated in its attempts to control inflation. Secondly, inflation may be imported through the international capital market. An expansionary monetary policy in the reserve currency country will lower interest rates throughout the world. This increases aggregate demand, which is again accommodated by an increase in money supply(5).

Evidence suggesting that capital flows offset domestic monetary policy has been challenged in view of simultaneity problems as well as specification errors in the reaction functions, by Herring and Marston (1977). Their structural model for Germany suggests that the Bundesbank successfully resisted external pressures for domestic monetary adjustment, which enabled Germany to pursue domestic policies markedly different from those of Germany's main trade partners, contributing to instability particularly within the Snake.

The econometric analysis - set out in Chapter Five - for the seventies based on the macroeconomic approach, adjusted for specification errors, indicates that for the five EEC members analysed, authorities seemed to have the ability to sterilize and indeed there is reason to believe that they pursued such policies for long periods, although to a lesser extent since 1977. This evidence, like the case above, although tentative nevertheless seems to suggest that the authorities have used monetary policy independently.

The analysis of what is happening in the real world was necessary in order to check the assumptions leading to the conclusion that monetary policy under an MU will have to be carried at the union level. Under fixed exchange rates it will be assigned to the XB. The latter, except in the very short-run, will be at the level that brings XE, and attempts to change it and pursue domestic objectives at levels different to those resulting from the XE level and/or quasi XE situations are unsuccessful. High capital mobility speeds up the whole process. However the analysis above demonstrated that the self-adjustment mechanism to the XE level might not be as effective as it was thought, if authorities, through various measures, are able to adopt policies that would not bring about the assumed monetary

adjustment. For the latter to come about, countries must be willing to stop undertaking measures in pursuit of independent monetary policies. The genuine maintenance of fixed exchange rates implies the abandonment of autonomous control over domestic monetary policies. Otherwise, the more inflationary country, within a fixed exchange rate system, would not only obtain command over additional goods and services, but would also pass on unwanted inflation to its partners, see Goodhart (1975 p 299). Countries which follow sterilization policies, as will be seen later, could create reserve flow instability and hence exchange rate instability. No such system can persist without some discipline over the monetary policies of the countries involved. Experience indicates that independent nations do not want to submit themselves to external constraints. The discipline and decisions necessary to run a fixed exchange rate system will nowadays very much depend on political harmony.

1.B.c. Additional Conditions for a Monetary Union

Up to now it has been said that an MU needs fixed exchange rates, capital market integration, and it implies monetary policy carried at the union level. However this group of countries depends also on the rest of the world. Its growth prospects are affected by the latter. The MU implies therefore the creation of a common monetary policy with respect to third countries. There could be the possibility of irrevocable exchange rate fixity among the partners of the group at a moment where they are not (roughly) equally dependent on each other - and hence on the rest of the world - with respect to external transactions. Irrevocable exchange rate fixity among members could affect, undesirably, the effective exchange rate of each one of them. The latter rate is more relevant as far as current account transactions are concerned. One should also keep in mind that

the role of across the border credit and other financial transactions is important and should acquire greater significance for the MU, and what counts here are nominal exchange rates. Market exchange rate fixity reduces uncertainty maintaining orderly conditions and encourages growth of a credit market straddling national boundaries. The union, therefore, in order to avoid regional imbalances should have to adopt a proper policy combining intra-union exchange rate fixity with a desired degree of effective exchange rate evolution on the part of each member. A successful union exchange rate floating in relation to third currencies would be needed. Further, even in the case where the competitiveness and economic structure of each member is the same, such a policy is required in view of the effects on economic growth that the evolution of the union exchange rate would have on the MU and the rest of the world. Within the IMS concept, therefore, there should be an international policy of the union in negotiating with third countries and/or MUs.

The carrying of monetary policy at the union level implies either centralisation of monetary policy or an agreement on strict adherence to a well defined rule of conduct in monetary expansion. In the second case the power of discretion remains in the hands of national monetary authorities, which could conduct their monetary policy contrary to the union assumptions. To avoid exchange rate instability, surplus members could finance the deficit ones without the latter undertaking corrective measures. The question is how long the former could accept such a process. Exchange rate instability might finally occur. One could also envisage reserve pooling at the union level in the sense of establishing an institution responsible for managing the members' foreign reserves. It could operate in the market to maintain permanently fixed exchange rate

relationships and decide on the common floating. However such a measure may not be enough. Pooling could make exchange rate fixity possible technically, but it might not make it possible from a long-run practical viewpoint, assuming that certain members continue to adopt non-union policies.

In any case there will be a credibility gap as long as each member retains such power. Speculative movements may also take place enhancing exchange rate instability. Under these circumstances this union institution should not only manage members' reserves but should also be endowed with its own reserves and apply union-wide effective monetary control in order to assure the success of fixed exchange rates and make the MU permanent, implying also a movement towards policy centralisation. One could possibly envisage the functions with which this body would be entrusted. It should decide on domestic (union) monetary policy such as bank liquidity, credit and interest rate policies, administer foreign reserves and decide on union liquidity. It will, in a sense, decide on the money creation within the union. Monetary policy in individual states would be determined by the policy being pursued by this supranational institution.

There are even nowadays debates on how free national fiscal policies are in an MU[6]. The latter implies monetary policy coordination among members. There is a close link between the PSD and its financing on one hand and XB on the other. Because of its monetary repercussions, harmonisation of budgetary policies - in particular the PSD - between members has an important role to play in assuming consistent intra-union XB situations. Arguments also exist for the centralisation of fiscal stabilisation policy. All these points are analysed in chapters three and four. As it will be seen, national governments retain the instruments and

are still able to influence the geographical distribution of employment and economic activity, and choose the size of the PSD. The only restriction is that a deficit is financed by loans at the going market rate and provided the long-run equilibrium conditions, which derive from the government budget constraint and the XB constraint, are not violated.

Redistributive transfers have been proposed to temper the effects of income redistribution arising from MI. Such a view could be challenged on the following grounds: (a) Evidence, especially during the seventies seems to indicate that the existence of the Phillips curve has been questioned in the long-run. (b) Transfers will not be a substitute for exchange rate adjustment whenever price and cost developments between members are out of line.

If there is a case for transfers, it may arise when along with the MI process, there is a trend for price and cost equalisation between regions and countries. In this case divergent economic tendencies could be identified as structural problems or differences in productivity. The conveyance of such transfers for productive investment rather than subsidizing of living standards should be emphasised.

1.B.d. Distinction between a Monetary Union and a Pseudo Exchange Rate Union

An analysis by stages was attempted above in order to detect some of the important characteristics that an MU should have. The above concept of the MU should therefore be distinguished from that of a "Pseudo exchange rate union" as it is termed by Corden (1972), where each member may retain its foreign exchange reserves, its own monetary and fiscal policy, and operate these policies in order to ensure that it does not exhaust or over-accumulate its reserves. Further, in such a case, representatives

meet periodically to decide whether they should in unison realign, appreciate or depreciate their currencies. The difference between such a system and the one described above is the absence of commitment to keep irrevocable exchange rate fixity and hence follow the policies that it implies. A member country may, for various reasons, not follow such policies and instead prefer to realign its currency with the rest of the members or opt out of the agreement. There are no explicit rules that would assume the effective consistency of members' monetary policies. In the absence of a firm agreement- manifested by reserve pooling, absence of controls and abandonment of monetary independence- an adjustable peg system is created, of which it is questionable whether the benefits of an MU could be brought forth, especially when realignments take place frequently, or under crisis situations and/or by large amounts.

Members should therefore be in a fixed exchange rate agreement not because they have chosen similar monetary growth rates for domestic reasons but because they have chosen these rates because they are in the fixed exchange rate arrangement.

The conditions for a complete monetary union are, therefore, the irrevocable exchange rate fixity among the member currencies, total currency convertibility, dependent national monetary policies, a common external monetary policy, harmonisation of national fiscal policies and a regional policy on certain occasions.

CHAPTER TWO ON THE DOMAIN OF A MONETARY UNION

Doubt on the suitability of flexible exchange rates for all existing currencies leads to the question of what is the suitable domain of the MU. Earlier approaches tried to single out a crucial characteristic that would indicate the domain. Others started with national economies taking each nation state and national currency as an indivisible unit to constitute an MU. But a nation with many economically heterogeneous subregions can be viewed as a homogeneous entity in terms of policy attitude and national preferences so that this approach falls into line with earlier approaches. The alternative approach attempts to provide a unifying framework and recognises the shortcomings of theories based on a single facet of the economy and evaluates costs and benefits in participating in an MU for a region or country.

Meade (1957) and Scitovsky (1958) pioneered work on MUs and fixed exchange rates. The first contribution to MU theory as such was by Mundell (1961) which in turn gave rise to important contributions by McKinnon (1963) and Kenen (1969). The term "optimum" under this group refers to the ideal position, the objective being the maximisation of achievement of price stability, full employment and XE. A region is defined as an OCA, when it exhibits the characteristics which lead to automatic removal of unemployment and external imbalances. Automatic in the sense that no interference is required through monetary or fiscal policies to restore equilibria. An MU should then be formed so that the maximum benefit will be accomplished out of it. Each theory is distinguished from the other in relation to differences in suggested characteristics. This form of approach is different from later work on MUs, see Fleming (1971), Ingram (1969), Magnifico (1973). Firstly, in the sense that

Mundell attempts to redefine frontiers, while the latter take a more realistic approach seeking to determine whether a group of countries should create an MU. Secondly, they are more policy oriented and attempt to establish the necessary economic policies to create IB and XB, in the absence of exchange rate adjustment. They recognise the need for government interference[1] although the form and size differs from one proposal to the other - see also Williamson (1973), Wood (1973), and the All Saints Day Manifesto Approach (1975). However the traditional approach provides a basis for an empirical study on the feasibility of an MU.

2.A. The Single Criterion Approach

2.A.a. Automatic Adjustment

According to Mundell (1961), high factor mobility is the basis for a unified area. However, differential changes in unit costs may not be the only possible causes of external imbalances. Or even on Mundell's assumptions, factors may not flow, see Presley and Dennis (1976, pp 12-7). Further, countries do not encourage labour mobility. They formulate instead regional policies. It is suggested - Lanyi (1969), Scitovsky (1967), Dunn (1971), Corden (1973), Kenen (1969), Goodhart (1975, p 294) - that in practice, due to various factors, it is unlikely that sufficient inter-regional labour mobility can be counted as an adjustment mechanism. The question is whether labour is the crucial factor or if capital alone could suffice to bring the necessary changes. Fleming's analysis (1971) points out that it may not be of a sufficient degree of effectiveness.

According to McKinnon (1963) highly open economies should comprise an MU. He places emphasis on internal price stability for each member while Mundell favours XE. Corden (1973) and Presley and Dennis (1976) explain why it is only when IB exists that

McKinnon's suggestions could work and bring XE. Further, McKinnon did not consider external macroeconomic disturbances. This criterion would require cautious appraisal in the practical context, depending on the stability of the external environment compared to that of the country concerned, and also on if the SOE tends to be financially undisciplined. Also to what extent the SOE has diversified its trade with several large countries.

For Kenen (1969) optimality comes by introducing an MU based on product diversification. However Kenen's special assumptions have been questioned, see Presley and Dennis (1976, pp 23-5), Flanders (1969), Ishiyama (1975) and Ingram (1969). Applied to the real world it means that small areas - less diversified states - are OCAs profitably maintaining flexible exchange rates. The low diversification criterion comes to conclusions opposite to those arrived at by the openness criterion. The two approaches are incompatible. Contradictory conclusions arise from different assumptions concerning the principal source of external disequilibria.

2.A.b. The optimum size of a Monetary Union

In the above criteria there seems to be a difficulty that could be confusing: early papers had two ideas running through them. One concerned the features that a country must possess in order to gain by joining an MU and the other concerned the features that must be possessed by an OCA to be of benefit to its members. Authors above are concerned with the size, looking at where to draw the line, knowing that a large MU maximises IB and XB objectives.

Goodhart (1975, pp 291-301) analyses the reasons for doubting whether the size is the most crucial variable determining the boundaries of an MU - in achieving the best resolution of objectives - or even if it is important once the minimum size

has been reached. Social unity for Goodhart is a far more important factor. If it exists, irrespective of size, authorities could and should introduce fiscal measures to ease the adjustment process as effectively, or perhaps more so, as exchange rate changes. It would in such conditions make labour migration easier and wage-price adjustment harder to bring about under any exchange rate regime. "Optimum" should be defined not so much as a function of geography but as a function of social psychology. One could then reap the benefits of a larger MU, the most obvious being the elimination of currency exchanges and uncertainty about likely exchange rate changes. It was explained in chapter one - page 13 - that strict economic reasons may not justify such transfers in the MU concept. Indeed some members may provide this argument insisting on real adjustment to be undertaken. The main question then lies on the practical significance of this proposition. Is there going to be this sort of unity and if so for how long could it continue? Especially when members do not undertake sufficient adjustment for various reasons. Such transfers could happen within a single country, but within an MU composed of different political entities such a movement may be difficult.

2.A.c. Government Intervention and the Need for Similarity of Inflation Rates

Under this criterion, domestic policies can be totally relied on to create equilibria in the absence of exchange rate changes. Inflation similarity was put forward by Haberler (1970), Fleming (1971) and Magnifico (1973). Assuming that it is changes in the XB that generate the need for exchange rate changes, this criterion involves a change in the basic assumption on the principal source of external imbalances. Attention focuses

here on macroeconomic phenomena. The importance of inflation differentials is analysed in chapter three. Further, this criterion is not without problems. The implications for IB may prove intractable, jeopardising the MU creation.

Generally all criteria point out the cases where exchange rate fixity is preferable as an argument for having an MU. They have not been sufficiently analysed, see Ishiyama (1975, pp 359-60). However, the costs of external adjustment emerged as the central concept in the choice among alternative exchange rate regimes.

2.B.a. The EEC Case

Labour mobility seems to be rarely met even in one country and more rarely over the whole EEC. It could act neither as a sufficient nor as a politically acceptable substitute for exchange rate changes. Migrant workers within the EEC come largely from non-EEC countries except for Italy and also labour mobility within the Benelux(2). Corden (1972) suggests that despite this low mobility, its movement to high labour demand areas has helped to reduce exchange rate changes. But this assumes that countries in deficit will send foreign workers home and migration outside the EEC will help alleviate disequilibrium problems. At the present time though, apart from the political connotations of such a decision, the EEC is in no position to replace high internal labour mobility as a stabilising policy. Within the EEC there have been certain labour migrations, but the EEC labour market is not integrated. It is still organised in national trade unions and contacts between them are rare. Each of them has different tools, aims and strategies. Institutional mechanisms for wage and salary regulation have developed along separate lines. These differences have not beenreduced and work as a retarding factor

to labour mobility. Integration forces have sometimes perverse effects, equalising wages while productivity is unequal among members. However free movement of persons already applies to all employees, see Fratianni and Christie (1978). Mobility, although legally free is also limited by qualitative factors and it is conceived to be an inadequate substitute for payments adjustment compared with demand management and exchange rate variation, see Boleat (1975).

The question is if capital mobility is sufficient to bring automatic adjustment. Custom barriers and language problems do not apply to it. However, capital is not free to move in the EEC as a whole, being hindered by legal obstacles, even at the beginning of the eighties. National rules still exist, although there is evidence that these obstacles are being slowly removed. Four members - France, Italy, Ireland and Denmark - still have controls limiting free capital mobility. The 1973 entrants were to abolish controls at the end of 1977, according to the accession treaty. It happened, in fact, only for the UK in October, 23, 1979. The favourable XB situation, strict monetary policy control and the "petrocurrency" status of sterling led to control dismantling. Ireland also imposed control on the UK, in December 1978, in anticipation of a break in sterling parity, unilaterally. Eurocurrency markets have on the other hand, contributed to capital mobility, and also to the prevalence of controls; since members had easy access to this, market controls remain and free capital mobility has not been established within the EEC. Barriers to inward investment have reduced competition and efficient use by achieving economies of scale comparable to US and Japanese competitors. Nationalistic attitudes remain strong, preventing a country in particular, and the EEC in general, to realise its full potential,

just because such capital flow could result in a cross-frontier acquisition. All these comments, plus the possibility that even if free mobility exists, it may not be fully effective, add to uncertainty on capital's ability to bring the required degree of adjustment.

This is what seems to be happening with production factors in general. The difficulty in measuring factor mobility in a direct and unambiguous way should also be mentioned. Various measures have been proposed which are not without problems, see Vaubel (1978a). However, experience indicates that capital mobility prospects are better than those of labour as will be seen in the following parts. Further, the importance of multi-nationals increases and contributes to rising capital mobility. Prospects to dismantle controls depend on various factors, see chapter five.

The question is how essential factor mobility is for an MU. That seems to depend on the whole strategy adopted. If it is based on automaticity, then its existence seems to be crucial for exchange rate fixity. But if it is to be realised that such mobility does not exist adequately, it may not mean that an MU cannot be created, assuming that the strategy is changed and government action to achieve XE and exchange rate fixity is undertaken. Additionally, with progress on unification, factor mobility could be expected to rise, reducing in turn the amount of adjustment policies and potentially undesirable implications. Note that here we analyse the ability to create MU in the absence of factor mobility as opposed to the desirability of having such a mobility within an MU.

Adjustment through internal policies could result in costs, while they could be avoided by exchange rate changes. It will be shown in chapter three that there is evidence to indicate

lack of money illusion and exchange rate ineffectiveness to correct a deficit[3]. Others believe that the exchange rate instrument can be effective. Corden (1972) considers each EEC country on this basis coming up with no encouraging results with respect to the EEC-MU. Balassa (1973_b, p 175) provides arguments to suggest that money illusion will be effective. However it is here where openness becomes important. In a very open economy, flexible exchange rates could not help XB adjustment without other undesirable repercussions. Domestic policies and/or factor mobility would be needed. Such policies, and possible undesirable IB effects, will not be very large due to a high degree of openness of the economy. Also fixed exchange rates could dissuade excessive wage rise demands, which could impair competitiveness affecting undesirably IB and XB objectives. Openness has a role to play here too.

Numerous definitions have been suggested for openness, see Presley and Dennis (1976, pp 50-1) and Vaubel (1978a). Arguments are provided to support the use of the average propensity to import, API, and the marginal propensity to import, MPI. An open economy would be expected to have high values for these magnitudes. The MPI can be estimated by fitting the equation, $M = a + by$, where $b = MPI = dM/dy$. $API = M/y$. There is still the problem that b may be biased due to simultaneity problems. Evidence for the sixties and early seventies demonstrates that both OLS and 2SLS estimates are insignificantly different for all EEC countries. Also there is no significant difference between API and MPI - except for BLEU - for the period 1958-1973. See Presley and Dennis (1976, pp 52-3). Our analysis covers the period 1967-1978. Table 2.1 shows the API for the EEC countries as well as the average for the 1967-1978 period.

Table 2.1 Imports of Goods, Services and Transfers as a Percentage of the GNP

Country \ Year	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	Average 1967-1978
BLEU	29.4	31.9	34.1	34.5	31.5	33.3	40.1	41.3	42.2	34.3	40.4	39.0	35.99
D	26.6	25.0	25.9	26.5	24.1	23.1	28.2	29.4	30.5	27.9	26.7	23.8	26.49
F	14.1	14.5	17.1	16.4	16.2	17.8	20.1	22.5	23.4	18.3	16.9	15.1	17.71
G	16.6	17.2	17.4	18.6	17.3	18.7	19.1	20.1	22.1	20.4	19.4	18.5	18.78
Ir	40.8	42.4	44.3	44.1	40.6	48.8	54.1	60.9	57.7	61.0	58.6	59.1	51.09
It	12.9	12.6	13.9	15.2	14.8	16.5	20.4	26.1	22.8	23.7	21.2	20.9	18.42
N	33.3	33.0	35.2	37.8	33.8	33.8	35.4	40.9	43.1	36.5	35.3	33.3	35.95
UK	17.7	17.5	16.3	16.3	14.7	17.3	21.4	26.4	24.3	25.7	22.7	22.6	20.24
Annual Average	23.9	24.3	25.5	26.2	24.1	26.1	29.9	33.5	33.3	31.0	30.1	29.0	
SD	10.1	10.6	11.2	11.3	10.0	11.5	12.5	13.6	13.1	13.7	14.0	14.4	

Source: Constructed on the basis of data in IFS.

Table 2.2 Marginal Propensities to Import

Country	MPI(OLS) b	MPI(2SLS) b'	Average 1967-78	t(API-b)	t(API-b')
BLEU	0.4174	0.4285	0.3599	1.4375	1.715
D	0.2902	0.2959	0.2649	1.3316	1.6316
F	0.2116	0.2331	0.1771	1.1775	1.3822
G	0.2148	0.2176	0.1878	1.3039	1.4412
Ir	0.6912	0.7016	0.5109	2.15	2.27
It	0.2931	0.3105	0.1842	2.32	2.687
N	0.3816	0.3919	0.3595	0.4702	0.6894
UK	0.3036	0.3286	0.2024	2.53	3.155

Source: Constructed, after econometric analysis based on IFS data.

Table 2.2 shows this average and the MPI using both OLS and 2SLS. The t-statistic performs the significance test, comparing values of the MPI and API[4], to see whether, in practice, there is any empirical difference between the two. Looking at the results, the t-statistic - OLS - seems to indicate that in practice, there appear to be empirical differences between the marginal and average estimates for Italy and the UK, while paradoxically not so for Ireland at the 5 percent significance level. 2SLS results do not differ substantially from OLS ones, although the empirical difference between MPI and API applies here for Ireland also. Estimates above give valuable information especially when EEC countries are to be compared. When taking marginal estimates, the UK and Italy, two of the largest members, are as open as Denmark. France and Germany are of the least degree of openness. BLEU and the Netherlands are very open while Ireland is of the highest degree of openness. The difference between average and marginal figures would imply less effective domestic policies for the three members, a somewhat surprising result at least for Ireland.

However one cannot draw conclusions from the above estimates on whether members are open enough to form an MU. McKinnon did not specify any critical value, although he was aware of the difficulties in establishing one. Despite the lack of such a value, it could perhaps be suggested that some of the members may not be of the desired degree of openness to join an MU, with all the implications with respect to exchange rates and unemployment levels analysed earlier. Table 2.2 would suggest though, that seven out of the nine members, when marginal estimates are taken, seem to be adequately open to satisfy McKinnon's criterion. It is less clear for France and Germany, although they are not closed in the US sense - see Table 2.3 - so that it could not be said definitely that they would be harmed by joining the MU.

Table 2.3 US openness. Imports as a percentage of the GNP.

Year	'67	'68	'69	'70	'71	'72	'73	'74	'75	'76	'77	'78
	3.8	6.0	6.1	6.4	6.6	7.1	7.8	10.5	9.0	9.8	10.5	11.0

Source: Constructed on the basis of IFS data.

An important question on this problem is whether members become more open through time. The validity of exchange rate fixity would be enhanced gradually. API estimates suggest a significant rise since 1967 until 1975 both for original members and late entrants, except for the rather general decline in 1971 and for some of them in 1972, in view of the 1971 mild world recession. Attempts to control inflation brought recession in mid-seventies. All members experienced a decline in trade as a percentage of income. Certain members tried to restrict their deficits. Restrictive policies were followed by each member, affecting other members differently. The effect was unbalanced since each member is not equally dependent on others. In the late seventies it was hoped that inflation control and

effective demand and investment policies would restore a rise in growth and trade. World shocks though, attributing to inflation rises, have not so far let members pursue growth objectives. Lack of appropriate policies is also responsible.

At the beginning of the eighties it was not certain if the openness of members would start increasing again. Unfortunately, our tentative conclusion for the future is less optimistic than past suggestions, see Tsoukalis (1977, p 43), Presley and Dennis (1976, p 54). The trend towards increasing openness has been discontinued since 1975. Apart from doubts on whether members are open enough, another problem is that members' dependence on trade diminishes, although such dependence is higher than that in the sixties. If one hoped that openness would increase while progress on MU would take place, one could not use this argument looking at the evidence since 1975. One could only wish that the decreasing trend would not continue to reverse the long-term increasing trend observed between the sixties and seventies. It has yet to be seen whether countries would check inflation and enhance growth.

Further, standard deviations do not seem to indicate that members' openness converges over time, to be used as an argument to form an MU. Such a result was expected in the absence of considerable changes in API of large members to counterbalance large increases in small members between 1967 and 1978.

In the diversification criterion too, a critical value is lacking. There is no common agreement of members' diversification degree. Reitsma (1972) states that EEC economies are sufficiently diversified. Balassa (1975, p 192), however, suggests that while in US, major industries are concentrated regionally, each of the four large EEC members has a full

complement of industries. Empirically then, as theoretically, Kenen's and McKinnon's theories come into conflict as this evidence implies that closed economies are well diversified, while open ones are not. Presley and Dennis (1976, p 61) attempted an empirical estimation, computing a diversification statistic. However, the results were surprising for certain members. They cast doubt on whether their model reflects Kenen's model appropriately. Results could change if one was to take manufacturing groupings, given that the spread of activity differs particularly in the export industry. Heller (1976) measures diversification by the share of the largest export commodity group in total exports. Vaubel (1978a) suggests that import and capital diversification should be included; especially imports since low export diversification implies high import diversification. Problems in measurement exist also since it is difficult to see how one can be weighted against the other. Looking at manufacturing groupings, Jacquemin and de Jong (1977, pp 1-26) suggest in their empirical analysis that diversification in the manufacturing sector has risen, although on a national basis it varies among members and rises faster for some of them. This criterion may not facilitate MU creation as certain industrial sectors are concentrated on certain members. Encouraging points can be detected though, like the rising importance of large export oriented firms and the fact that the customs union did not lead certain industries out of business(5). However, given the economic conditions of the seventies and the need for high technology industrial sectors, it could be that, on certain members, diversification may not be sufficient to prevent XB problems. Further, we are rather in disagreement with the view that SOEs with high trade sectors, in case they are not suffic-

iently diversified, should opt for flexible exchange rates. The costs in terms of rising prices and implications stemming from these rises are very important so that, it seems to us, it is more preferable to exclude such possibility, at least with their main trade partners. Finally, the EEC as a whole would satisfy Kenen's criterion even if members would not.

Inflation performance in the EEC - table 2.8, p 43 - does not seem to indicate uniformity of price movements in the last decade. Only subgroups depict closer uniformity. It would seem that the EEC as a whole is not an OCA. Members would have to undertake certain policies and produce uniform inflation rates. Implications arising out of such policies are analysed in chapter three.

Generally it was found, on theoretical grounds, that some of these criteria are hardly operational, not only because they are incomplete, but also because it is difficult or impossible to measure them in a direct and unambiguous way and compare them with each other[6], see Willet and Tower (1970), Pelkmans (1975) and Ishiyama (1975). Empirically one could not possibly detect if EEC satisfied each of them adequately enough to be considered an OCA. One could not decide at this stage, if all members are desirous to the same degree to fix exchange rates among themselves and follow common policies. One could not say though that the EEC domain could be considered as a small MU so that advantages from the use of money would be lost. While these comments apply for the contributions above, one is faced nevertheless, with a movement on the part of governments towards the creation of an MU. Political decisions are taken despite the lack of a clear-cut suggestion from the above criteria. Given the firm commitment on such movement, these criteria are useful because they would facilitate the creation of the MU.

Automaticity reduces the possibility of potentially undesirable implications out of adjustment undertaken through other means. However, the recognition of the lack of sufficient fulfilment of these characteristics would require, since the decision to proceed is taken, the need for more government interference. The aim should be to establish the necessary economic environment, where domestic policies will be effective, to create equilibria without the exchange rate need. Restoration of XB compatibility would, in turn, require knowledge of the causes that create it. Growing evidence of the importance of inflation would enhance the significance of the inflation criterion. At the same time it would be highly desirable that the importance of the first type of theories is gradually enhanced.

2.C.a. Trade Interdependence

A strong case for an MU - analysed here because of its relevance to what has been discussed above - has to do with the high degree of economic interdependence among a group of countries. Cooper (1968) analyses how countries have become interdependent over the years in setting and pursuing their objectives, as a result of economic and structural changes, which have occurred among them. Generally interdependence (a) slows down the process by which national authorities, each acting on its own, are able to reach domestic objectives, and, (b) increases the number and magnitude of disturbances to which each country's XB is subjected, and this in turn directs attention to policy instruments to restore XE. In the absence of controls countries could pursue flexible exchange rates to restore policy effectiveness, reducing interdependence. That would seem rather unrealistic for SOEs. Countries though could appreciate and avoid imported inflation. However their trade prospects, at least with their main trade partners, could be

endangered. They would prefer fixed exchange rates with them, at least, and reduce inflation through domestic policies to the levels of their partners, realising that costs of trade reduction are even higher. Or, if they must depreciate to restore competitiveness, domestic price effects could not be ignored. A deficit on the other hand may not be corrected through depreciation. It can be seen that the response to greater integration could involve countries in undertaking counteracting motions which could leave them worse off than they need be(7). Countries would then prefer to form an MU, recognising their interdependence and agree to pursue common, responsible and mutually beneficial policies to bring forth a union-desired inflation level for each member, as well as comparable XB situations among them.

The question then is on the degree of dependence of each member on other members. If it is the same, then the possibilities of success out of common policies are higher. Otherwise a country, in view of its dependence on the outside world, may not follow consistent "union" policies which could result on or accentuate problems for some or for the rest of the members. Or if it does, it will not benefit the given country. Either way a fixed exchange rate agreement may not be beneficial to everybody. Table 2.4 indicates the evolution of coefficients of trade dependence on intra-EEC trade for each member. The importance of EEC trade to each member was growing from 1968, the creation of the customs union, up to 1974. However, since 1974, its relative importance has been reduced for certain members, while for others it has risen, but at a much lower rate than that of the pre-1974 period. For other members it

has remained roughly the same. If one is to look at intra-EEC trade as a percentage of the total EEC trade, its importance has risen by a mere 1.6 percent between 1974 and 1978 - EEC of the nine - as compared to 10.6percent between 1968 to 1972 - EEC of the six - in terms of exports, while estimates for imports, 7.9 percent and 12.4 percent respectively, are less pessimistic than those on exports. However, trade growth is much slower in the EEC since 1974, although the different number of EEC members since 1973 should be taken into account. As far as individual members are concerned, in certain cases, the trend is even slower than the above averages. Also since 1974, EEC trade dependence does not rise annually. Figures for 1978 could even be more pessimistic, were it not for the boosting of growth in the second half of 1978. It contributed to intra-EEC trade growth, except for Italy. Evidence on past trends does not allow us to draw definite conclusions with regard to future evolution. Evidence since 1974 emphasises its slower and irregular rise. On the-other hand 1978 was a year when new impetus was added to the European MU objective. If countries were determined this time to show a firm commitment to that, and if fixed exchange rate arrangements were to be equally useful for all members, they would have to intensify their trade links - some of them more than others. One has to realise though that there are certain items, especially raw materials, which have to be imported from non-EEC members. EEC members however, should aim to achieve high trade dependence on each other although rough equality may be questioned, if one is to

Table 2.4 Exports and Imports to EEC as a Percentage of Totals

	Exports								Imports							
Year / Country	1968	1970	1972	1974	1975	1976	1977	1978	1968	1970	1972	1974	1975	1976	1977	1978
G	37.6	40.2	39.9	44.9	43.6	45.7	44.9	45.8	41.5	44.4	48.8	48.1	49.5	48.2	49.1	50.3
F	43.0	48.8	49.9	53.2	49.1	50.6	50.4	51.7	47.5	48.9	50.4	47.6	48.8	49.5	47.6	52.3
It	40.1	43.1	45.1	45.4	45.0	57.1	54.1	48.0	36.2	41.2	44.9	42.4	42.9	41.5	50.2	45.1
N	57.4	62.0	64.8	70.8	71.0	72.4	70.4	70.9	55.4	55.9	56.3	57.4	56.9	55.3	54.8	57.6
BLEU	64.9	68.5	68.5	69.9	70.5	73.7	71.2	72.5	54.9	58.8	64.3	66.1	67.1	67.5	67.5	69.0
UK				33.3	32.3	35.6	36.5	37.7				30.0	32.4	32.3	38.5	38.2
Ir				74.6	80.0	63.1	76.5	77.6				68.3	75.8	69.4	72.8	72.9
D				40.3	44.8	45.7	44.3	47.7				45.5	45.9	47.2	47.6	49.5
EEC	45.0	48.9	49.8	50.6	49.3	53.1	51.5	51.4	45.9	48.4	51.6	46.9	48.4	48.1	50.4	50.6

Source: Constructed on the basis of data in Eurostat

take into account the different sizes of the members' economies. In this way the integration process would become more accepted and successful for each member. One should not be guided completely by this optimistic view. Under the current inflationary environment, prospects for an increase in intra-EEC trade may not be optimistic. Success on MI and inflation control could on the other hand enhance it. Interdependence could then increase in the future at a faster or a slower rate, it could stop increasing, or it could even reverse its previous long-term trend. It should also be kept in mind that slowly increasing trade interpenetration does not enhance the aid provided by it in adjusting intra-EEC imbalances. Table 2.5 provides an indicator of members' most important trade partners. It can be seen that Germany is the most important single partner to each member except for Ireland and the UK. The UK still has the lowest trade dependence in the EEC. Its trade with US is the most important although it has been stabilised and slightly decreased, while that with the EEC members has increased and it seems that Germany, if trends continue, could soon become its most important partner. Germany still remains at the centre of the economic area widely defined to include continental members. The creation of an MU could be beneficial for this group of members. At the same time Germany's influence has increased in the EEC, at a moment when each member's dependence on Germany is greater than that of Germany on any member. One could perhaps insist that Germany's policies could be more independent harming, on certain occasions, other members, although its significant trade with the EEC could restrain excessive independent action. The low figures estimated for the UK would suggest that its EEC dependence would have to increase so that it would contribute to a successful intra-EEC exchange rate fixity. An encouraging

Table 2.5 Trade Partners in Intra-EEC and US Trade Percent

	Year	1972		1974		1976		1977		1978 (May)	
	Country	a	b	a	b	a	b	a	b	a	b
N	G	32.8	27.0	30.1	25.9	30.1	26.9	31.5	26.0	32.4	26.4
	BLEU	15.1	17.1	13.2	14.0	11.3	13.9	15.5	13.8	12.4	13.4
	F	9.9	7.9	5.0	3.2	9.7	7.3	10.0	7.0	10.6	8.4
	UK			9.0	5.0	7.9	6.8	10.0	8.0	8.2	7.7
	US	3.7	8.1	5.1	6.2	2.4	9.0	3.4	8.5	3.3	8.6
BLEU	G	24.9	25.0	22.1	22.3	22.8	22.5	22.9	23.0	23.2	25.0
	F	19.2	19.4	20.2	17.0	18.9	16.4	16.9	15.7	17.4	17.6
	N	18.7	16.5	17.1	16.0	16.5	12.6	14.4	15.9	14.1	16.4
	UK			5.0	6.0	5.2	7.2	8.0	8.0	6.8	9.4
	US	6.0	5.6	4.1	8.8	3.6	5.9	4.2	6.0	4.2	5.9
Ir	UK	68.7	50.9	56.2	46.3	48.8	48.3	50.9	53.0	52.3	51.9
	G			6.1	8.0	9.5	6.5	9.0	6.2	8.1	6.5
	F			3.0	4.9	5.3	4.4	6.6	5.0	7.3	4.7
	US	9.4	7.7	9.0	6.1	7.1	8.3	6.2	7.1	6.0	7.4
D	G	12.1	11.7	12.3	18.1	14.1	21.2	15.4	19.6	25.9	20.0
	UK	21.0	18.8	16.2	13.0	13.6	9.6	14.0	10.5	16.1	11.3
	F					4.2	3.6	4.3	4.0	5.1	3.9
	N					3.2	5.4	3.4	6.0	3.6	6.3
	US	8.2	7.1	3.2	8.1	6.0	5.2	5.8	5.7	5.7	5.4
UK	G	5.6	7.6	6.0	8.1	7.3	8.5	8.0	10.0	8.2	10.4
	F	5.1	5.4	5.9	6.9	6.8	6.3	6.4	6.5	6.6	6.9
	N			6.0	7.8	5.3	5.4	5.3	5.1	4.8	4.5
	Ir			5.0	4.0	4.5	2.9	5.0	3.2	5.3	3.4
	US	12.5	10.6	9.1	8.2	9.6	11.2	9.3	10.5	9.0	11.6
G	F	12.8	13.8	12.1	12.0	12.2	11.1	11.0	10.7	11.6	11.6
	N	10.0	13.3	10.8	14.0	9.2	14.1	9.5	13.3	10.2	13.7
	It	8.5	10.6	8.1	8.3	7.2	8.8	6.8	8.2	6.3	7.8
	BLEU	8.2	9.8	8.0	9.1	7.8	8.8	7.6	8.3	8.4	8.5
	UK			5.0	3.0	4.3	3.7	5.3	4.2	5.9	4.7
	US	9.3	8.2	8.1	8.0	5.6	7.8	6.6	6.8	6.8	6.5
It	G	23.2	22.4	18.2	18.1	20.3	17.2	20.0	18.0	26.9	18.8
	F	14.2	11.5	13.3	13.0	15.6	14.1	15.0	14.8	20.1	17.4
	UK			5.0	3.0	5.5	3.4	5.9	3.8	8.9	4.3
	N			4.0	4.0	3.6	4.8	3.5	4.6	5.1	5.0
	BLEU			4.0	3.0	3.6	3.0	3.5	3.6	4.7	3.9
	US	9.4	7.7	9.0	6.1	7.1	8.3	6.2	7.1	6.0	7.4
F	G	22.1	22.4	17.0	19.3	19.6	20.1	18.6	20.5	18.4	20.6
	BLEU	11.6	11.5	11.1	10.2	11.0	10.7	10.1	10.2	10.2	10.2
	It	11.9	10.3	12.1	7.1	11.3	8.6	10.4	9.1	17.7	8.5
	UK			7.0	4.2	7.2	4.8	7.3	5.3	7.5	5.8
	N			5.1	6.1	5.2	6.6	5.0	6.5	5.6	8.1
	US	6.6	8.2	6.2	6.9	4.5	7.3	5.1	6.9	5.7	7.6

Source: Constructed on basis of data in Eurostat

a = exports as a percentage of total exports, b = imports as a percentage of total imports

point would be that its average annual increase is at a faster rate compared to that of other members.

The current degree of interdependence would suggest that an MU would generally not harm the members involved, with some reservations for the UK case, while it would largely benefit smaller members. One should not ignore though the task of forming a successful exchange rate policy with third countries. The trade position differences would suggest that this is not an easy task, see chapter six. Generally interdependence trends seem to make the MU case in the EEC a little more favourable by the end of 1978 than in the past. However, they emphasise at the same time how such a view can be eroded in the future if slow rising trends are to be replaced by declining ones. Contrary to past expectations which suggested higher trade integration in general and in the UK in particular, one could not possibly predict now the same for the future. If these trends worsen stricter exchange rate fixity could only bring forth results which could be the opposite of those expected. Faster intra-EEC trade growth would be needed, especially for certain members in the future(8).

2.C.b. Capital Openness and Interdependence

Economic openness and economic interdependence, for a group of countries, in most studies undertaken is measured mainly with respect to the trade sector. Despite the increasing use of policy instruments designed to affect the capital account, only occasionally does one find reference to another important aspect of openness defined in terms of capital flows across frontiers. Such openness should be considered, given its effect on domestic policies. This sort of interdependence provides another incentive for international cooperation. Whitman (1969), by calculating rank correlation coefficients,

suggests that capital flow openness differs from commodity flow openness, a useful finding, for otherwise little would be added to knowledge by explaining capital flow openness with respect to relationships already used to explain trade flow openness. Capital account openness, by financing changes in trade flows, strengthens the spillover mechanism of internal inflationary or deflationary pressures created in open economies. Independence of stabilisation policies is constrained not only by high marginal propensities but also by capital flows.

Problems exist on measuring capital openness, see Vaubel (1978a), Whitman (1969, p 729) suggests that a measure of capital openness, compatible with trade openness, is required in terms not of differentials, but of proportions, indicating the relative size of capital flows to domestic ones for each country. But data on such a scale are not available. By making the heroic assumption for ordinal ranking purposes that the size of a country's GNP can be used as a proxy for the size of its financial flows and using it as the denominator, openness could be calculated. Table 2.6 suggests that trade openness does not seem to coincide with capital openness. Small economies tend to be more open than large ones. Considerable economies of scale prevail in the capital market and it is likely that small countries will be less autarkic in this respect than large ones. Results seem clearer if one compares Germany with Benelux, Ireland and to a certain extent Denmark. France and Italy experienced on certain occasions high ratios. The UK also, especially if the two broad definitions are included. London's significance as the world's most important financial centre should be taken into account.

Table 2.6 Capital Openness of EEC Countries Percent

	G	F	It	N	BLEU	UK	Ir	D
1972	3.18	2.51	5.25	5.88	4.09	3.49	2.65	3.26
	3.58	9.46	18.98	12.32	25.2	30.7	6.87	4.9
	4.07	9.66	19.03	12.58	26.2	31.0	7.94	5.87
1973	3.21	2.68	5.93	6.48	4.7	6.59	6.39	6.16
	4.08	10.33	15.21	12.11	38.7	42.05	7.95	7.59
	4.49	10.65	15.24	12.2	39.1	42.47	9.29	8.46
1974	4.53	3.6	5.72	5.42	5.43	7.19	8.49	1.07
	6.61	8.1	16.9	11.72	26.51	26.7	10.11	4.5
	6.96	8.91	17.0	12.02	27.3	27.8	14.96	5.33
1975	2.5	2.48	1.71	5.86	4.75	3.94	6.02	2.43
	6.44	9.59	5.26	16.57	31.88	30.48	7.21	3.57
	6.95	10.03	5.41	16.7	32.47	31.09	11.91	4.23
1976	2.89	5.16	3.83	3.12	2.46	6.31	7.39	2.24
	5.3	12.07	7.52	13.68	27.67	47.9	9.75	3.94
	6.11	13.3	7.54	13.81	28.46	48.6	16.8	7.77
1977	2.89	3.27	1.62	4.87	3.20	2.73	19.03	5.66
	4.55	11.71	3.66	13.82	35.88	10.45	23.93	9.59
	4.76	12.05	3.83	13.95	37.27	11.89	27.7	12.85
1978	2.1	1.93	1.4	4.73	3.8	4.48	n.a.	3.87
	5.09	11.6	3.76	15.32	29.41	24.9	n.a.	6.79
	5.44	12.02	4.21	15.35	30.88	25.31	n.a.	9.15

Source: Balance of payments Yearbook: constructed on data, on standard presentation section. Three definitions are used: a) Non monetary sectors: Direct investment in the country, direct investment abroad, other private l.t. assets, other private l.t. liabilities, other private s.t. assets, other private s.t. liabilities. b) (a) plus domestic money banks assets, domestic money banks liabilities. c) (b) plus general

government l.t. assets, general government l.t. liabilities, general government s.t. assets, general government s.t. liabilities, Central institutions assets, Central institution liabilities.

While one could draw important conclusions on the determinants of capital openness, what is of interest for the MU case is to what extent capital moves among members. Conclusions could then be drawn on capital interdependence in the EEC. Table 2.7 provides the proportion of non-monetary capital flows which account for each member and the US, with respect to the EEC and hence the rest of the world. It suggests that capital mobility within the EEC is lower than trade mobility for all EEC members, with the UK case being such that capital and trade mobility are of almost the same degree as compared with any other member and the US. Ireland is the exception whose capital flows are slightly higher than its trade flows. Nevertheless small EEC economies seem to have a high degree of capital mobility with their EEC partners, with the Netherlands scoring the lower figure. Major EEC economies depict a low degree of capital mobility with their partners, Germany having the lowest proportion. Mundell (1957) was the first to suggest that it is possible for integration in commodity trade to be well developed without capital mobility, and some support to his argument is provided in the EEC case. Commodity markets are to some extent a substitute for factor movements. The absence of trade impediments, implies commodity price equalisation and even when factors are immobile a tendency towards factor price equalisation. It is also possible to have capital mobility without much commodity trade. Indeed this is the case between US and the EEC. Capital interdependence between them

Table 2.7 Inward plus outward non-monetary capital flows with the EEC 1972-77 cumulative

Country	G	F	It	UK*	BLEU	N	Ir	D**	US
% of world total	15.6	31.9	25.0	30.0	49.8	40.2	79.2	46.5	32.0

* UK 1973-77 ** D 1972-76

Source: Constructed on the basis of data in Eurostat, Balance of Payments, Geographical Breakdown.

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is much more important than trade interdependence. Looking exclusively on capital interdependence, interdependence between EEC countries is overestimated while that of US and the EEC is underestimated.

Capital interdependence between the two sides of the Atlantic has certain implications, analysed above. However these are enhanced and mostly affect Europe through the Eurocurrency market, which has grown considerably during the last two decades and by far the most predominant market within it, the Eurodollar market(9). While it brought important benefits, at the same time it hampered Europe's sovereignty, strengthening US dominance on EEC monetary affairs. Various factors in combination accentuate monetary interdependence with the US(10). Given the large disproportion between US and Europe, whose weight has been dwarfed by its fragmentation into separate markets, interdependence has been lopsided. High monetary interdependence between US and Europe implies appropriate policies for both. One has to look at IMS evolution since 1944. The central dollar position was established as a world reserve asset. It offered certain advantages to the USA in terms of seigniorage gains. While the EEC criticised US for frequent inflationary policies, the US saw no need for discipline

to maintain a system which they did not particularly wish to preserve, claiming that Europeans could have revalued, but they instead wanted to both make their exports competitive and escape inflation out of export surpluses and monetary inflows. EEC in turn argued that the main imbalance was between US and the rest of the world. The easiest cure would be US action. And so the argument continued (11). US policy was in terms of internal economic considerations, refusing to undertake dollar responsibility leaving it to other banks to intervene and keep the route of their currencies within the IMF margins. Another alternative for them was to accept realignments. European dependence was illustrated sometimes dramatically in the last two decades. One could refer to the events of 1969, early 1970, late 1970 and in 1971, 1972-73 and after 1975 culminating with the 1977/78 crisis. EEC economies realising their inter-dependence felt that they should counter undesirable effects stemming from US policies through joint action so that they do not jeopardise their close economic links, growth prospects and common policies already agreed. The move to create an MU apart from its own arguments, took on strong support by the impact of US monetary policies. It had also, as an objective, to reduce the dollar reserve role at least in the EEC and undesirable effects from US policies. One would have to keep in mind the reasons that the dollar was the dominant reserve currency - see Swoboda (1969), Strange (1979) - and the difficult task of European or other currencies to replace even part of it. The main problems of such arguments are analysed in the following chapters. What is more, dollar instability could impair the MI process in the EEC. However, there are some encouraging signs: since mid-1978 various decisions have been taken aiming at establishing world stability(12). Further, there is now US

willingness to explore the possibility of Euromarket control, indicated at the May 1979 regular meeting of Central Bank Governors in Basle. The Fed's argument was that the large build up of dollars outside US not only hindered money supply control, but was also a significant factor behind the foreign exchange speculation against the dollar(13).

With respect to the Eurocurrency market there is a debate on the size of its power to influence activity(14). However, given the increasing emphasis on monetary control, there is concern at the fast expansion of Euromarket activity outside domestic controls. The question is how to impose controls without hampering the European capital market integration and recycling achieved so far, which is also required now with the new oil crisis. Although economic hardships were avoided, fundamental adjustment was delayed. However given the high debts of oil importing countries and the fact that banks approach the limits of capital return and any more finance would imply very risky banking, a reason exists for Euromarket control, avoiding undesirable effects on the IMS. Proposed control schemes - capital ratios and reserve requirements - entail difficulties in implementing them. They would have to be comprehensive in a geographical sense and they depend on close monetary coordination among countries - although the danger of simultaneity in economic cycles of leading economies should not be ignored, as in 1974/75 and the danger was also there in 1980/81. Members have to agree on the objectives of Euromarket regulation, something that has so far proved elusive.

2.C.c. Transmission of Economic Fluctuations through Interdependence

McKinnon (1963) suggests that countries whose national economies are interdependent may form an MU, since the possib-

ility for divergent price trends will be reduced. The question then is to what extent fluctuations in one EEC member are transmitted to other members. Balassa (1975, p 192) suggests that a possible test for the effect of interdependence on prices is to compare price movements among EEC members and between members and non members during the period following the EEC's establishment. Ginsburgh (1973) finds that for the period 1955-70 the intercorrelation of prices among the EEC economies has remained low and has shown little tendency to increase. Table 2.8, a less representative indicator on the question, shows the price evolution for the EEC members as well as those of a representative group of non-EEC members - five industrialised countries - for the period 1972-78. It should be kept in mind that earlier analysis indicated that EEC economies are not of the same degree of interdependence. It can be seen that price movements in the EEC were not of the same size or even trend on certain occasions. Considerable divergencies were experienced among them. If one is to include non-EEC members, certain EEC economies followed a more similar pattern with some of them than with their partners. A careful analysis of the table would suggest that the effect of trade interdependence on prices cannot be said to apply in all cases. However, broadly speaking one could distinguish sub-groups of countries in the EEC experiencing price trend similarity among them along with trade dependence. Also the fact that this dependence is not equally shared, in the EEC, among members. It is rather that one group of countries - Benelux, Denmark, Ireland and to a certain extent France - have to adjust their inflation rates on the second group - Germany, UK - accepting on certain occasions unwarranted inflation levels and lack of ability to achieve more desired levels. Ireland used this as a powerful

Table 2.8 Consumer Price Movements Percent

Country / Year	G	F	It	N	B	L	UK	Ir	D	S	Aus	CN	US	J
1972	5.7	6.6	5.7	7.4	5.7	4.8	6.4	8.3	6.6	5.4	6.2	4.8	3.3	4.4
1973	5.2	7.1	10.8	8.6	6.3	6.4	9.4	11.7	8.8	6.7	7.8	7.5	6.3	4.8
1974	6.7	13.3	18.7	9.5	12.7	9.4	16.4	16.7	16.3	9.9	9.5	10.9	11.0	24.3
1975	6.3	11.8	17.1	10.1	11.3	10.9	23.5	20.8	9.9	9.8	8.5	10.3	9.0	11.8
1976	4.4	9.9	20.5	8.5	8.7	9.9	16.8	18.3	9.0	10.3	7.3	7.5	5.8	9.3
1977	3.5	9.6	15.1	6.7	7.4	6.4	15.8	13.6	11.2	11.4	5.5	8.0	6.5	8.0
1978	2.8	9.3	12.5	4.1	4.5	3.1	8.3	7.6	10.0	9.9	3.6	8.9	7.5	3.8

source: IFS

argument to break the sterling link and join the EMS in early 1979. Italy seems to be the exception. It is worth mentioning some econometric analysis that has been undertaken, concerned with the international transmission in prices, incomes and employment. Hickman (1974) bases his study on the LINK econometric system, while Waelbroeck and Dramais (1974) develop the DESMOS model. Their results have been questioned by Ball (1974) due to the absence of monetary linkages, among other weaknesses. Hickman's results do not suggest a satisfactory transmission. DESMOS multipliers imply a somewhat stronger dynamic pattern of behaviour than LINK ones[15]. However they would both suggest that economic interdependence in the EEC, measured to include only tradeables, may not transmit economic fluctuations from one country to the other to a degree that could affect significantly the stabilisation policies of countries. This evidence is inadequate given that systems are not complex enough to include intercountry monetary linkages and migration[16]. The transmission of foreign price disturbances has been further analysed in the PPP context, which would imply eventual convergence of cross-country inflation rates. Some of them support this view, see Genberg (1978) and Cross and Laidler (1974). Results by Dornbusch and Krugman (1977) vary from one member to the other. Krause and Salant (1977), Fourcans and Fratianni (1976), Korteweg (1975) come up with a substantial scope for inflation rates to diverge. Multicolinearity in the latter case should not be ignored. Finally simultaneous models have been used based on the work of Goldstein (1974) and Calmfors (1977), see Jonson (1976), Knight and Wymer (1975), Sassanpour and Sheen (1977). Direct price effects on domestic price level are generally quite low although that should be expected, since such variable loses in signific-

ance when it is estimated in this multi-equation system, see Genberg (1978, p 258). Lindbeck (1980, pp 37-58) suggests that the long-run rate of domestic inflation is strongly influenced by the foreign price path. In the short-run domestic factors can have a considerable influence. However, international price developments dominate the price path also in the short-run in periods of violent short-term international price developments such as in 1972-74.

De Grauwe (1976a), (1977), (1978), and de Grauwe and Van den Bergh (1979) have analysed monetary interdependence, under alternative exchange rate regimes, with the purpose of developing a multi-country framework which allows the derivation of some specific relations between rules on exchange rates and rules on domestic monetary policies in a group of European countries. Exchange rate arrangements are analysed to answer the question of how they affect restrictions to be imposed on domestic monetary policies. Also, which arrangement best absorbs shocks originating both from inside the EEC and from abroad, assuming that monetary aggregates determine exchange rates. Monetary authorities of an open economy can influence monetary conditions, either through changes in domestic sector credit or foreign exchange market operations - internal versus external monetary policies. Shocks have the form of monetary base increases in the respective members during four quarters under fixed exchange rates, floating, moving average, reserve flow target and reserve stock target. Two extreme types of internal monetary policy (IMP) are considered: (a) passive, implying

that authorities do not try to maintain MB on a prespecified target path, and, (b) active. Starting with shocks originating in a European country, they lead to intra European reserve flows, except under free floating. When internal monetary policy is passive these flows introduce an internally equilibrating mechanism. When they are active such mechanism is blocked. Under fixed exchange rates external disequilibria are maintained and amplified over time and when exchange rates are guided by indicators the initial shock leads to larger reserve flows and exchange rate changes. When the monetary shock originates outside Europe - US - the main conclusion arrived at above holds here too, in particular, the importance of IMP to judge the feasibility of different exchange rate regimes. So the relative superiority of some exchange rate systems over a floating system depends on the kind of monetary policies national authorities pursue. The setting of and adherence to - irrespective of shocks - independent monetary targets makes flexible exchange rates unavoidable. For a group of countries to follow fixed exchange rates, passive internal monetary policies should be implemented by the member of the group. The effects of foreign exchange market intervention on MB should not be sterilized. Sterilization by one or more countries leads to reserve flows and forces all countries affected to intensify their stabilisation policies or change their monetary policies altogether. If only one member sterilizes fully, external disequilibrium of that country will be absorbed by MB changes in non-sterilizing countries, with further effects on economic variables. Marston (1980) has also looked at these cross country effects. Foreign sterilization increases the variance of interest rates in the domestic country - they would have to adjust more to a capital

disturbance at home - as well as the foreign exchange reserves of both countries. The sterilizing country succeeds in modifying the effects of XB disturbances on monetary behaviour - interest rates, money supply. So, attempts to pursue independent monetary policies impose costs on others[17]. These costs are automatically imposed on a country using a reserve currency.

If the latter now refuse to change their MB and they too sterilize, policy conflicts emerge. Instability in reserve flows occurs since the adjustment burden cannot be shifted to non-sterilizing countries. But even if it can be done, reserves will flow to equilibrium levels very slowly. This instability or slow convergence is a direct result of incompatible monetary policies. In the absence of the proper institutions unilateral actions could follow like exchange rate changes and exchange controls. Sterilization policies would have to be used at moderate rates, and indeed, at a rate up to 50 percent they could avoid destabilising flows. The kind of currency used for intervention is important as it will be seen in chapter four. Aoki (1977) has verified de Grauwe's results in his attempt to establish further sufficient conditions for stability of monetary action under fixed exchange rates. Interdependence requires mutual coordination on the choice of sterilization coefficients. Their magnitudes should always be smaller, the larger the number of countries in the system. The stability of the system could be increased if authorities correct a sterilization policy conducted in period t-1 by an opposite move in period t.

The European MB as a whole is insulated from US policy under joint floating. Effects on individual MBs though, in the absence of sterilization, are the same either using fixed or flexible rates. US monetary policies remain an important

variable for explaining individual MBs. Only in three of them - UK, Italy, Germany - national influence on MB rises under floating, a result probably due to differences in relative openness of European economies vis-a-vis US, assuming that elasticities of international reserves with respect to the dollar exchange rate are equal among European countries. US policies are not neutral as far as their distribution effect on Europe is concerned, resulting in reserve gains for some members and losses for others, affecting further other variables, when they float jointly vis-a-vis the dollar. Reserve pooling could be useful in this respect, reducing the attendant risk of such a possibility. Even if it were not sufficient to discourage speculation, it could safeguard the joint floating making it possible for weaker members. Partial sterilization - 50 percent - does not allow countries to achieve monetary independence from the US. Although it is reduced, US policy influence still remains the most important factor, except for the UK and Germany, although their policies should not be too far out of line with those of the rest of the world and US policies. Sterilization used by a country to pursue substantially different monetary policy than in the rest of the world has to fail in the end.

2.D.a. The Gains versus Losses Approach

The fundamental objection to all contributions perhaps lies in the absence of the idea of balancing positive gains against losses of fixed exchange rates. While it is difficult to evaluate them, a multi-dimensional approach taking a wider range of benefits and losses seems more comprehensive than any single criterion approach, taking also into account that currency unification is a dynamic process.

With respect to the gains, speculation is expected to be eliminated enhancing the effectiveness of national monetary control. Some problems remain though, see Fleming (1971). Balassa (1973) questions such gains. However, speculation could make exchange rate changes unduly large, when they occur. Further, the elimination of sporadic and unsettling speculation over currency prices could help greatly to establish a unified money market.

A second source refers to reserve saving as cooperation among members progresses, see Kafka (1969), Salant (1973), Scitovsky (1958), (1969), Ingram (1959), (1962a), (1962b), Mundell (1973). The EEC could end up though with an excessive amount of reserves. Its interest on SDR enhancement may wane. Unless EEC currencies are used outside it as reserves, the authorities would rather press for an increasing SDR role. Tower and Willet (1976, p 12) point out that no reserve saving occurs for the world as a whole. The EEC could then run higher expansive policies which might not be welcome, at least for the rest of the world. Kenen (1973) suggests that saving may not result.

The benefits of risk pooling have been analysed by Mundell (1973) and Laffer (1973). Ishiyama (1973) points to the need of more research. Balassa (1973) has criticised their assumptions.

The gains of complete capital market integration should be kept in mind. Ingram (1969) and Magnifico (1973) put emphasis on the easing of XB pressures. Salant (1973) and Kenen (1973) take a more balanced view. Corden (1973) seems to be less enthusiastic. Also the size of disequilibrium is important. There is no question of indefinitely covering a deficit by non-productive borrowing and sustaining real wages to

unrealistically high levels. Countries involved must create real capital and then the debt to the wealth ratio need not be rising as they proceed to borrow in EEC capital markets. Integration could also result in efficient resource allocation. On the other hand the problem of efficiency versus equality may remain, see Goodhart (1975, p 296), Fleming (1971).

The classical advantages of fixed exchange rates should be kept in mind. They refer to trade, competitiveness, production costs, rising competition, reduction of exchange rate uncertainty giving rise to market efficiency.

A single currency in Europe coupled with capital market integration would fulfil the role the Eurodollar has performed, at least among EEC members, reducing the impact of US policies in Europe. A reserve status of a European currency though would impose constraints on the economic performance of Europe for world stability purposes.

Finally the benefits of an MU are positively related to the openness of the economy, see Christie and Fratianni (1978, p 8).

MI, in so far as it is successful in achieving these advantages, also contributes to the achievement of other spheres of economic integration. In so far as an MU is expected to accentuate regional problems, an effective regional policy could speed up economic integration.

Turning now to the losses, it is suggested that peripheral SOEs will see their growth prospects suffer. McCarthy (1979) asserts that such problems are temporary, while inflation reduction brought by a harder currency policy is a significant compensation. The loss of national monetary policy independence is also emphasised. It is questionable though if an SOE could follow such a policy. Further, monetary discipline could

create significant - although, in view of new evidence, transitory - costs. In the EEC the McDougal Report (1977) placed emphasis on substantial fiscal transfers to ease deflationary pressures on poorer regions. De Grauwe and Peeters (1979) claim that this is not the case of the European MU, since countries analysed in the Report are complete political and monetary unions and transfers take place because within them prices and costs change at nearly the same rate. This is not the EEC case, while one should not object on the desirability of such transfers. However, despite the absence of wage and productivity equality, capital may still flow to the richest areas. Also there seems to be the need for temporary transfers for high inflation countries for a successful joining in the MU, to alleviate the high transitory cost burdens which they are going to face.

On fiscal harmonisation, it will be seen below that members are left with a significant degree of autonomy.

With respect to resource re-allocation costs, caused by factor movement, Christie and Fratianni (1978) explain why they are less than might be expected.

It is argued that a stable MU price level may result in unstable national price levels. Exchange rate changes are not permitted for each country to achieve national price level stability Vaubel (1978) is using the size of real exchange rate changes - deviations from the relative PPP - to determine how costs and benefits of an MU will be distributed among members. He (1978a), (1980) does not come up with encouraging results. However, if one is to look at subgroups, the seventies exhibit less real exchange rate changes than the sixties.
It would be expected that as MI progresses, it would increase factor mobility, and the members' mutual openness and

transactions diversification, reducing in turn the need for real exchange rate changes among them and thus it would become self reinforcing and self validating, see Vaubel (1978a, p 320-3).

Finally Hayek (1978) emphasises that an MU creates a European government cartel or monopoly in the production of money, reducing currency competition and increasing the danger of inflation. Calculations by Vaubel (1978b), under M1, confirm such suggestion for the period 1969-77. Further our estimates, under M1, M2, based on annual data for the period 1970-78, seem to confirm Hayek's suggestion, although to a lesser degree for the Snake members, see Table 5.8 , p 134. On the other hand, an effective coordination policy could in the long-run avoid such costs. Vaubel (1979) also argues that if the prevalence of a single currency is a result of competition one should not object to currency unification. Arguments based on the common parallel currency approach are used here, whose validity is analysed in chapter seven.

Coming now to weigh gains and losses, Ishiyama (1975, pp 369-71) analyses the reasons for which such an assessment is difficult. Further, when countries undertake a clear commitment to create a complete MU and sacrifice economic policy freedom, the degree of integration existing immediately before the MI process is established, is important. Such costs are likely to be higher for less open and less interdependent economies, assuming that union policies are consistently followed. On the possibility of foregoing freedom to carry intra group exchange rate changes and improve IB and XB objectives, it is doubtful whether such a
cost can be counted. Lack of money illusion reduces the effectiveness of exchange rate changes. The long run Phillips curve

has been challenged for the seventies, see chapter three. The MU would then seem to impose only transitory costs. The problem is, though, how long transition is and how intractable are the costs it imposes. Even monetarists have recognised such difficulty, as will be seen below.

Both Keynesians and monetarists agree however on what could be an important reason - for the monetarists the only reason - to prefer exchange rate flexibility rather than currency merger. That refers to the possibility of national price level instability with a stable MU price level. The size of real exchange rate changes is used as a criterion for the desirability of the creation of an MU - based on weighting gains and losses and not on the traditional criteria, whose shortcomings have been analysed. They are reflected though in this criterion. Gains are larger the smaller the costs, costs being shown by the size of real exchange rate changes. The results, mentioned earlier, indicate that such desirability exists for certain EEC subgroups. However, consumer price index (CPI) data are used, and the bulk of evidence does not support their use in testing PPP, even among a homogeneous group of countries, see Thygesen (1977, p 141). One should then feel uneasy about departures from PPP of CPIs as a measure of real exchange rate changes, although the aim of the study was to analyse the implications for national inflation rates of adopting a fixed exchange rate system for the EEC, rather than to test the validity of the PPP theory.

Analysis of gains and losses would suggest that a European MU could bring net gains to its members. These may not be equally distributed among them. At least for some of them, it might imply that they would have to settle for a potentially long-time period with nationally considered undesirable levels

of domestic objectives. The fact that members may be affected undesirably at opposite directions and hence some offsetting might take place from a "union" viewpoint, does not conceal the fact that expected benefits might not come for each one of them. Against this, are the dynamic benefits that a complete MU promises out of efficient money use, certainty, larger market, enhanced growth and productive capacity, ameliorating IB objectives. These comments imply that one important factor on this difficult assessment is the strategy adopted to move towards creating the MU, as it will become evident in the following chapters. Depending on the strategy, gains and losses may be aggravated, reduced or eliminated.

There is also the possibility that macroeconomic policy would be facing new obstacles, which could result in an uneven spread of gains between small and large members or between high and low performance areas. These are risks related to cost equalisation in the area at the wrong time, or members being unable to cope with unsynchronised fluctuations in national activity areas. However, an effective regional policy within the MU could reduce such dangers.

CHAPTER THREE INTERNAL AND EXTERNAL BALANCE AND THE EUROPEAN MONETARY UNION

3.A.a. The Single Country Case and the Monetary Union Case

The concepts of IB and XB and the appropriate policies to achieve them both simultaneously, made economists spend a great deal of time recognising that both can be considered as objectives of deliberate economic policy rather than targets which can be attained automatically(1). The following analysis concentrates on the concepts of IB and XB for a single country and on to what concepts apply to an MU. Can one say whether IB and XB mean anything in the context of an MU? Could they be its objectives?

The two main objectives of a country, according to Meade's (1951) model are the achievement of IB and XB. By IB it is normally meant some form of combination of full employment and price stability. XB is taken to be manifested in an XE(2).

Looking at the IB of a single country, it should be distinguished from IE, since the latter might imply under-full employment equilibrium, given stable prices. If the aim of policy makers is to achieve full employment equilibrium, then both coincide by definition. If on the other hand they substitute a desired level of income, Y^*, for the full employment one, Y_f, - Y^* may or may not be equal to Y_f - IB means where IS intersects LM at Y^*. Under an L-shaped Phillips curve price stability and full employment are not incompatible. Redefining IB in terms of the Phillips curve, where IB is treated as a desired combination, a distinction is needed between the short-run and long-run(3). In a more recent interpretation Meade (1978) considers abandoning the IB concept and recognising two distinct objectives Y^* and $\hat{P}^*$, where $\hat{P}$ is the rate of inflation. This approach directs attention to the

costs involved, when the economy is not in IB, when asking what are the costs to the economy when $Y \neq Y^*$ and $\hat{P} \neq \hat{P}^*$. Further, costs attached to each objective are not the same. However, it has not been at all clear whether an income level has really been the objective. Different income levels could in practice be associated with the same employment level. In an inflationary economy, where the Phillips curve could be unstable, U^* and $\hat{P}^*$ are most appropriately thought of as distinct, see Shone (1979a). With respect to the XB situation the question is whether that coincides with the XE. It all depends on what external situation authorities desire. They may prefer an imbalance as post war experience indicates, see Robinson (1966, pp 9-10). The desired situation may well be where $B^* \neq o$. XB is where $B=B^*$, which may or may not be equal to zero. It can be either an equilibrium $B^*=o$ or a non-equilibrium state, $B^* \neq o$. According to MABP, if $B=B^*$ is set at anything other than zero, stock adjustment forces in the system would establish XE in the long-run. $B^* \neq o$ would imply a change in the country's reserve position, in turn, setting in motion stock adjustment until $B^*=o$ and $\Delta R=o$, where ΔR denotes changes in the reserves. In the long-run XB and XE coincide. In the short-run it could be a non-equilibrium state, but forces will always exist to establish long-run equilibrium.

What concepts of IB and XB apply for the MU case? Let us assume that the world is reduced to three countries A, B and C where B and C have formed a complete MU, treated now as regions of this union. Starting firstly with the internal objectives, one could write about the inflation rate of the MU in the way one would write about a country's inflation rate composed of various regions. Another question is if a certain inflation value could apply throughout the MU, i.e. if the MU regions

would experience the same inflation rates. Within a single country different regions would experience more or less the same price for the various commodities as a consequence of common currency, in conjunction with freedom of movement of competing goods, capital and labour among them, see Johnson (1972, p 331). It should be noted that this occurs inspite of possible substantial differences in unemployment rates among the regions. It should be expected that inflation rates will tend to be the same in each region of the country. Now let us assume that B and C are of about the same size, have common borders - minimising transportation costs - and that the bulk of their trade takes place among themselves. Embarking fully on an MU, they are treated like regions of a country, share a common currency and barriers to freedom of good and factor movement do not exist between the MU regions. The lack of these barriers does not provide the requisite insulation for each member against the impact of general influences emanating from each region. The independence of each member, producing competing goods, has been significantly impaired with respect to the effects it has on prices in its region and on the way to control them. Assuming also a more or less similar productivity growth in the two regions, one would expect CPIs to move in unison in the two regions. Under these circumstances one would expect the different regions of the MU to experience more or less the same inflation rates and there it would make sense to speak about an inflation rate common to all MU regions $\hat{P}_{MU}=\hat{P}_{B}=\hat{P}_{C}$. With respect to the unemployment level, a distinction would have to be made between the short-run and the long-run. In the short-run the common rate of inflation (CRI) would result in a given level of unemployment depending on the levels experienced in the two regions, whereas, in view of empirical

evidence, in the long-run there will be an NRU_{MU} determined by the NRU of each region.

The XB of the MU is composed of the XBs of B and C. The latter are internalised within the MU so that possible payments difficulties of a country-member would be disguised and appear as regional problems within it. $B_{MU}=B_B+B_C$. XE for the MU would be obtained where: $B_{MU}=T_{MU}+K_{MU}=0 : B_{B+C}=o$. Care should be taken though since here XB is not defined on a national basis, therefore transactions between the two members - now union regions - are excluded from the definition of XB_{MU}. Transactions between B and C will be treated like transactions between the regions of a country. It would not matter if one region, B, was in deficit with C and country A, as long as this can be counterbalanced by transactions of C with B and A. The imbalance difficulties could be eased by fund transfers from surplus regions[4,5].

The question arising now is whether the above could be treated as objectives of the MU, in the sense that MU should look to optimise their values. An MU is established because it is expected to bring net benefits to the union members, like those associated with exchange rate fixity, common reserve pool and capital market integration. Its objective is to establish such conditions. The inflation level would not affect the derivation of these benefits. Its establishment could also require expenditure discipline, that could create unemployment for certain regions and the union as a whole. Yet the net benefits that an MU is supposed to bring will, in the final analysis, affect inflation, unemployment and the XB.

One could envisage a situation where an MU is operating and CRI is high and increasing. That could imply a decline in investment, income growth, trade, resulting in a rise in

unemployment. The inflation rise might increasingly threaten those country-regions that are less inflation prone than other MU regions. Expenditure discipline could threaten inflationary countries. Some of these problems could now be more intractable, being manifested as regional rather than national - or XB - problems. It can be seen that, from one side, what is aimed at by means of MU benefits is the improvement of the level of these objectives, whereas from the other side these objectives may deteriorate. For these reasons an MU would seem to force, for the sake of its own viability, the creation of an economic union(6). Economic integration would have to take place when moving towards the MU, bringing policy decision making about the level of economic objectives in the union(7). EU would provide the condition for the successful functioning of the MU(8).

3.A.b. Routes to Monetary Union and Implications for the Members' External Balance

The XB situation of a country determines its exchange rate evolution. An MU means irrevocable exchange rate fixity among members and is therefore bound to have certain implications for each member's XB. However the measures that have to be taken by each member, both from a qualitative and quantitative point of view, depend on the route adopted to create an MU. The XB situation of a member would not matter, when the decision to create an MU was taken all at once. By that we mean the setting up of a complete MU, establishing within a day a community central bank, taking over members' reserves and acquiring the sole right to manufacture the legal tender and hence the base money. Indeed, it would be a sufficient condition for a successful MU to establish a single central bank over a domain comprising all members. Current political realities

though seem to make this suggestion simply unrealistic, if one is to realise that such an alternative would immediately transfer power to central EEC bodies, depriving the members of national sovereignty. In view of this, gradualistic approaches to the creation of an MU have been adopted. One such approach is based on the launching of a common parallel currency (CPC) from the initial stages of the monetary unification process, to circulate alongside national monies, inflation proofed, whose quantity demanded would depend on market forces. Under this approach too, the national XB position would not matter for the creation of an MU. Despite XB differences among members the CPC will prevail and at the end establish itself as a single currency in the MU, while authority will be passed to a European central bank. The validity of such approach and the reasons for not adopting it for the EEC case are analysed in chapters seven and eight. Instead, another gradualistic approach was accepted, based on policy coordination among members, to approach the level of irrevocable exchange rate fixity among national currencies or their replacement by a common currency. Under this approach, to which the great part of our research will be devoted, the evolution of national XBs matters for a successful monetary unification process. During this process each member's XB is treated separately. It is the achievement of compatible XB situations that would bring exchange rate fixity among them. Policy coordination should aim at achieving such an objective. Until the final stage of the evolutionary process comes, there is a situation where exchange rates, although fixed among members with determined fluctuation margins, are allowed on certain occasions to change in parity, due to lack of complete effectiveness of coordination, which could result in external imbalances at different levels between members.

However exchange rate fixity among them should act as a constraint and therefore exchange rate changes should tend to be the exception rather than the rule, owing to rising effectiveness of policy coordination.

In our three country example, each member has its XB composed of transactions with the other member and A. For B and C to keep fixed exchange rates among themselves, they should avoid considerable differences in their XB situation. Also it could be that a joint fluctuation of their currencies with respect to A's currency could tend to equilibrate the transactions of each member with A, assuming a comparable trade dependence of each with A. This joint fluctuation would not have a direct effect on transactions between B and C[9]. Therefore, members in this case would have to achieve XE between themselves for unilateral exchange rate changes to be avoided. XE would have to be achieved by means other than exchange rate changes[10]. This policy could imply certain difficulties. It could be the case where members have established XE between themselves and both are, say, in surplus with A, but B has a far greater surplus with A than C has. Joint currency fluctuation could reduce their surpluses but also make C incur a deficit, perhaps of a considerable amount. C might lose large sums of reserves and might require at the end a resource transfer for intra-union exchange rates to remain fixed. Although the direction of the joint exchange rate change would depend on the XB situation of the members, the amount of trade of each member with A would have to be taken into account. Due to an unequal XB situation of each with A and the possible incomplete effectiveness of the joint fluctuation, additional domestic measures might have to be adopted by B and/or C to reduce the former's surplus and/or the latter's deficit with A

or a combination of these and resource transfers.

It can be seen that when forming an MU the main objective refers to the XB of each member. Bearing in mind that members do not have the sufficient degree of exchange rate freedom to affect XB, after they embark on an MU, each of them would have to eliminate the causes of XB disequilibrium. Depending on the factors affecting XB, that could have certain implications for their policies, as long as XB continues to be defined on a national basis. One should keep in mind Meade's (1951) analysis of conflicts between IB and XB as well as Swoboda's (1973) contribution on the simultaneous achievement of IB and XB by the economies of a currency area. Unless IB and XB coincide, expenditure policies would not bring IB and XB simultaneously to all members. XB can be achieved by a country only at the expense of its IB. All members could achieve their XB objective but at least some of them would have to bear the burden, departing from their IB objective. Policy conflicts arise because income targets are incompatible with the XB objective. Due to inequality between instruments and targets one solution could be for members to revise and coordinate their goals. Since XB achievement is imperative, income levels should be revised according to the XB constraint. Alternatively, additional instruments could be used like expenditure switching policies, achieved either through parity realignment or barriers to the flow of goods from one member to the other. In the MU context such instruments are excluded. Factor mobility could bring forth the XB objective although it might not be sufficiently effective. The solution accepted would then be policy coordination with its implications with respect to possible abandonment of IB objectives for certain members.

In the following section we shall analyse the determinants of

the XB and the way to achieve compatible XB situations among members. It will also be seen whether, in view of recent evidence, members have to abandon their IB objectives. Conflicts might not arise in the long-run.

3.B. The Determinants of the External Balance

3.B.a. Long-Run Determinants

The determination of XB according to the monetary approach could provide a useful explanation of exchange rate changes for a country(11). It suggests that the reduction in money stock through an external deficit will equilibrate the demand for and supply of money(12). Countries though, may want to use other means to restore XE, in order to avoid possible undesirable repercussions. However, means such as import quotas, tariffs and exchange controls could hardly keep in line with the MU concept, while exchange rate fixity is what should be preserved. The poor approximation of the theory to reality was analysed in chapter one, as well as some of the modifications needed to the theory and the need for consistent policies by countries(13).

The purchasing power parity for exchange rate determination has re-emerged during the seventies. This resurgence of interest seems to be related to recent experience with flexible exchange rates, which intensified the search for fundamental relationships to determine equilibrium exchange rate values, in a period of rising inflation. Katseli-Papaefstratiou (1980, pp 4-16) refers to the versions and theoretical interpretations of the PPP. In one of the latter, PPP is seen by many authors as an extension of the quantity theory of money in an open economy. The PPP in this framework is linked to the dominance of monetary disturbances, the quantity theory of money, and the notion that the purpose of

purchasing foreign exchange is to secure purchasing power in some particular currency. It is consistent with a clearly established causal relationship running from monetary aggregate rises to the price level and then to exchange rates. The truly endogenous variable is the exchange rate. This line of argument is also the core of the MABP, see Frenkel (1976), Bilson (1978), and is implicit to a number of tests of the PPP, see Katseli-Papaefstratiou (1980, pp 17-26). It seems that it is within this framework that attempts to prove PPP validity demonstrate a grain of truth and in particular the relative version of it, see Haberler (1961), Kindleberger (1973), Metzler (1948), Ellsworth (1950), Johnson (1968). Machlup (1964, p 27) accepts the PPP rule where large exchange rate changes are to be experienced. The general movement in prices must be large enough to dominate structural factors. Inflation in one of the countries could change rates by huge multiples. It is for this reason that the explanation of very large exchange rate changes has to turn to monetary circulation and subsequent changes in price levels as causal factors. Stern (1973) accepts PPP holding under rapid inflation, where relative price changes are likely to be minimal. Despite the balanced view that empirical evidence generates, see Officer (1976), PPP could be useful in the category of high inflation rates.

However, while this argument could be made for the long-run PPP validity, this causal relation has been linked to the view in which exchange rates clear commodity markets and are thus determined by current flows of goods and services across countries. Literature on exchange rate determination incorporates the view that such rates are jointly determined with interest rates in assets markets, see Tobin (1969), Branson (1972), (1976), Kouri (1976), Dornbusch (1976a). It explicitly

introduces expectations as an important determinant. In a world where people decide to place funds abroad, they may be important in determining FEM activity and cause even substantial deviations of real exchange rates from the PPP level. Whether the PPP rule is re-established depends on what happens in the goods market and what is important here are wealth effects and interest payments on holdings of foreign assets. The equilibrium exchange rate will in the long-run tend to be equal to the PPP level, as long as monetary factors are dominant and under the restrictive assumptions regarding expectations, interest payments and wealth effects.

Since the mid-seventies more rigorous econometric techniques have been used on PPP empirical analysis. Causality tests are used by Frenkel (1976), (1978), Bilson (1978a), (1978b), Krugman (1978) and Hodrick (1978). Also long-run real exchange rate variability is tested to assess departures from the PPP, see Dornbusch (1978), Genberg (1978), Thygesen (1978)[(14)].

The long-run tendency of the exchange rate to equal the PPP level could have important implications for MI. It suggests that members heading towards exchange rate fixity among themselves would have to follow similar inflation paths, coordinating their policies to this aim.

3.B.b. The Effect of Structural Factors

Before we analyse the implications of this conclusion, attention should focus on the effect of structural factors. They could render inflation uniformity inadequate for exchange rate fixity, produce inflation differentials among members, and make a case against the creation of an MU. While the dominance of monetary factors may be established, the question is what happens when such dominance is less pronounced. This analysis will be more relevant under moderate inflation rates,

where structural factors may be important, as empirical evidence indicates, see Genberg (1978, p 273), Samuelson (1964), Officer (1976) as well as Keynes (1923) and Taussig (1941). They could change relative prices internally and even cause substantial deviations of the equilibrium real exchange rate from its PPP level.

Cost-push factors could lead to external deficits, which result in unemployment in an attempt to correct them. This is relevant to the EEC case given that labour is still organised nationally. A case against the MU is made here. In the MU context a union-wide collective bargaining would be required to avoid an isolated wage explosion.

Further, differences in productivity, when nominal wages tend to be similar among members, could create problems, see Kaldor (1970). Productivity could be important even under the monetarist view on inflation, see Parkin (1976, p 235). Vaubel (1976) and Genberg (1976) argue that it seems unlikely to involve substantial deviations from annual inflation rates.

With respect to various kinds of controls, they would tend to be eliminated, being opposed to the MU goals, avoiding interference with the workings of the price mechanism(15).

National differences in tastes could result in different national weighting with respect to inflation and unemployment. Their elimination may have to take a long time along with progress towards integration of national economic and social fabrics.

External disturbances could reveal large structural differences and induce large structural divergences among members. Vaubel (1978a) though, disputes the view that the failure of EMU in the early seventies was due to them, insisting that lack of monetary coordination was the crucial factor.

The situation might not be the same in the eighties. Domestic price rises and divergences experienced in the EEC in 1979, were only partly attributed to the 1977/78 monetary policies. Dramatic increases in the price of raw materials occurred. Inflationary pressures built up under the relative exchange rate stability. The decline of major currencies against the dollar - on which raw materials are priced - has been a major factor behind them. Combined with world recession, they have created external deficits which put pressure on the currencies of the countries concerned. For certain members such problems are more important than they are for others. Continuation of external disturbances could create more intensive divergences. A danger is imposed on MU assuming that restrictive policies may not be continued as long as they are necessary. Members could instead finance their deficits and maintain consumption levels. Inflationary pressures and external deficits would remain. Recycling though, could bring funds to companies although recession may not bring forth the expected export and productivity gains. Protectionism might follow. Also joint exchange rate evolution along with progress in MI could create XB problems given their different trade dependence on third countries.

Another question refers to the possibly different demand patterns of external transactions of each member. External disequilibria could then occur and become cumulative for a member despite inflation equality with other members. Even at constant growth rates, such differences could require changes in equilibrium relative prices. A deliberate policy to have inflation differentials in an attempt to bring XB compatibility would be required. Estimation of income and price elasticities for the demand for imports and exports entails problems of defining appropriate income and price variables. Presley and

Dennis (1976, pp 93-7) do not come up with encouraging results for the European MU. Also Stern et al (1976, p 20, table 2.2) derive important differences among members on trade price elasticities. It could perhaps be argued, although that might not be certain, that they would tend to get similar along with progress on MI. As their determinants tend to become similar among members, elasticities would be expected to converge in the long-run.

Structural factors could in certain cases be important. Members should undertake measures to reduce such differences, where it is possible. To the extent that such problems remain and become intractable, they could jeopardise the MU.

3.B.c. Short-Run Determinants

Evidence indicates that in the short-run currency movements have been greater than that justified by the underlying economic conditions. Some of them have also been abrupt and reversible. Markets have, on certain occasions, been disorderly - cases where there was no counterpart for sales or purchases or when exchange rates showed erratic fluctuations(16). This experience was common in all major countries. Overshooting - sometimes prolonged and substantial - from the PPP level among currencies, has to be analysed. Its causes will give the solutions necessary in order to achieve greater short-run exchange rate stability. Additional analysis of exchange rate determination is needed since PPP theory entails long-run considerations based on comparative statics, absence of structural changes, capital flows, further monetary expansion and any expectations other than those for further stability. It could not possibly be used to explain short-run exchange rate dynamics in a period of ongoing inflations. Capital flows, especially those deriving from speculative switches among

existing foreign and domestic assets, are for Machlup (1979, p 73) the most important factor for short-run changes since the early thirties. However, it seems difficult to find a single explanation for recent events, given the numerous and frequent diverse influences operating in the exchange markets. Schadler (1977), in her survey article, suggests that the consensus seems to be that exchange rate dynamics are at best studied with the assets market equilibrium model, and that without appeal to destabilising speculation. Exchange rates determined by portfolio adjustment will often overshoot their long-run equilibrium level given the continuous assets market equilibrium assumption. Values of existing money stock, real capital, bonds and foreign assets, the rate of flow of government purchases, the tax structure, and expectations determine the short-run equilibrium value of the flow of real income, the vectors of interest rates and prices and the nominal exchange rate values(17). Dornbusch (1976a) assumes a key role on the differential speed of adjustment of goods and assets markets. The dynamic aspects of exchange rate determination arise from the assumption that exchange rates are determined in the short-run in the asset markets, where adjustment is relatively fast as compared to the goods market. He describes the assumptions and implications for exchange rates out of monetary stock changes (1976b, pp 261-2). They are suggestive of the observed large fluctuations, while at the same time establishing consistency of such movements with national expectations formation. However, it is rather unlikely on a more realistic level that the overshooting which is implicit in the asset market equilibrium model is sufficient to account for the size of exchange rate variation observed in the seventies. McKinnon (1976b) suggests that with instability in underlying economic conditions has come uncertainty about

how to interpret new events as they occur, which is inevitably reflected in market expectations about future exchange rate changes, and comes to play a crucial role in actual exchange rate determination. Instability in economic conditions contributes to exchange rate instability not only via the variability of fundamental exchange rate determinants but also via the uncertainty of exchange rate expectations that such variability generates. Uncertainty and risk become important. Substitutability among assets declines. Certain transactors withdraw from risky foreign exchange dealings. The ability of smoothing out exchange rate fluctuations is in turn limited. Instability of major currencies, considered as international money, makes speculation more difficult and costly. Speculators are driven out of the market. Flows based on risk aversion, rather than flows related to the equilibrium value of a currency, take place. The continuing problems of the world's major reserve currency, as well as those of other major currencies, contributed to increasing uncertainty manifested in terms of exchange rate instability, see Richardson (1979), Ortoli (1979). Schadler (1977, p 291) suggests that there has been little evidence to preclude the possibility that, at certain periods and for certain currencies, destabilising speculation has contributed to exchange rate variation. Bilson (1978a) indicates the existence of speculation not based on rational expectations in Europe on certain occasions in the seventies. Evidence also on interest rate behaviour supports McKinnon's assertion that the problem with floating is related to insufficient speculation, in addition to irrational speculation. Isard (1978) also suggests that overshooting highlighted by dynamic models does not offer a convincing explanation for exchange rate volatility observed in recent years. Facts do not confirm

Dornbusch's suggestions. Most volatility has also been observed in forward rates. The behaviour of market operators indicates that exchange rates move in speculative runs, a view supported by the fact that it is difficult to find evidence of major private market operators taking large open positions on the basis of long-run exchange rate expectations. They do not have clear long-run expectations and consequently the risk associated with long-run positions is perceived as being too high. Mussa (1976) attempts to explain why expectations are imprecise and how they are formed. Expectations of future exchange rates - formed according to the rational expectations hypothesis - affect the willingness to hold domestic money. His model focuses on the potentially large variability of such expectations, which in turn leads to large scale exchange rate volatility. What then should be avoided, is sudden shifts in expectations about the paths of certain variables which in turn count for shifts in exchange rate expectations and, thus, exchange rate shifts. Expectations are formed on the basis of information which is always limited. Ex post facto it is easy to observe that errors were made and expectations are subsequently revised. This is not inconsistent with "rationality" of exchange rate expectations and exchange market efficiency. He suggests that changes in expectations about policy variables - particularly monetary and fiscal policy characteristics - may be an important cause of exchange rate volatility. They play a crucial role in the expectations process. Such volatility could be reduced by adequate dissemination of information that could allow better predictions on time paths of policy variables by market participants and/or avoiding sudden shifts in their time paths. Predictability and stability of policy variables become then the crucial

factors for stability and predictability of exchange rates. This is in accordancewith the monetarist framework which submits as essential in monetary policy pre-announced money supply targets, which in the future will only be gradually adjusted.

Further, authorities intervene in the FEM to smooth out exchange rate fluctuations. Depending on the way monetary policy is carried out though, it can either reduce or aggravate exchange rate fluctuations. McKinnon (1976a) considers large intervention amounts, undertaken since floating started, as unpredictable and unconducive to a desired degree of certainty regarding future exchange rate levels. Intervention should aim at stabilising the exchange rate around a target. However, under frequent target revision it may well increase uncertainty and aggravate exchange rate fluctuations. Successfully managed floating would imply that there is a trade-off between control over domestic monetary aggregates and control over the exchange rate. Too much emphasis on the former makes it difficult for the authorities to maintain a particular intervention rule. Such a trade-off is intensified further under fixed exchange rates with less than fully effective monetary policies.

Finally, real shocks could affect exchange rate dynamics. Many occurred during the unsettled period of the seventies. They should supplement the monetary variables for an understanding of exchange rate dynamics. While it is difficult to incorporate them into models, experience indicates that they are important. They are recurrent, affecting members differently. They could force exchange rates to a direction different to that suggested by the economic developments of the country(18).

Generally, on frequent occasions exchange rates may overshoot or even follow a different direction from that indicated by underlying economic conditions. Exchange rate stability

would require monetary policy coordination among countries in terms of adherence to correct policies. Overshooting would be reduced or even eliminated, setting aside non-monetary considerations. Unnecessary uncertainty would be removed and hence unnecessary disruption. Avoidance of sudden shifts in the time paths of policy variables would give the private sector a clear basis on which to make its future exchange rate forecasts. Adequate stabilising speculation would reduce official intervention or even prove it unnecessary. Further, fund flows among countries affect national money supplies and exchange rate stability. Currency diversification could spread such impacts more widely. Taking account of such wish on the part of the wealth holders, certain countries, by allowing such diversification - as indeed is currently the case - would enhance exchange rate stability. Its role would be useful particularly until more effective national monetary policies have been established(19).

3.C.a. Inflation and the European Monetary Union. Implications.

Policy coordination to achieve inflation similarity among the MU members could have important implications, depending on whether the common inflation rate falls in line with the preference function of each member. In the Phillips curve hypothesis, if a CRI was to be established, different unemployment rates could be experienced by each member. Presley and Dennis (1976, p 68) demonstrate that for the EEC case. Even if a common trade-off has been achieved, the optimal position could be a source of dispute. Only the member already exhibiting the CRI will not be affected. A low CRI could imply substantial rise in unemployment for high inflation members. Renunciation of independent national choice between inflation

and unemployment could be regarded as a serious cost. The Phillips curve hypothesis (PCH) would not seem to support the MU case. Under an average inflation rate, costs may be more equally shared[20]. In the monetarist approach, under fixed exchange rates, inflation is regarded as the interaction of the demand for real balances with the nominal stock of money. Equilibrium prevails when the actual and expected inflation rate are equal and there is no excess demand. The unemployment rate associated with zero excess demand is the natural rate of unemployment and depends on the structural characteristics of the labour market and is generally not affected by monetary factors. Whether or not a country joins an MU its unemployment in the long-run will settle to this rate. Policies will have only transitory effects on the unemployment level, producing rising or falling inflation. While it loses the right to determine its inflation level, an MU member's unemployment rate is not affected in the long-run. Money has a more direct and independent role to play, in contrast to the cost-push view where it changes to accommodate objectives and authorities put more emphasis on the successful negotiation of an incomes policy. Having chosen the target inflation rate, it would be for each member to adopt an appropriate money stock target, determined on the basis of variable estimates of money demand and long-run rate of output growth and all being well, they would ensure that the agreed inflation rate would eventually be attained.

Hines (1964), (1969), (1971) established a role for trade union militancy in Europe, differing among members, which can be eliminated only through a common system of industrial relations and collective bargaining. Coordination will not bring inflation convergence. Studies by Nordhaus (1972), Purdy and Zis (1974) and Ward and Zis (1974) reject this view[21].

When coming to explain the phenomenon of world inflation, it does not seem to apply for the majority of cases(22). With respect to the PCH, causal empiricism suggests that it does not look robust in the seventies. The long-run Phillips curve is a vertical line at the NRU(23). These findings do not seem to reject the MU case. Monetary aggregate growth has been the major inflation determinant. Inflation rates differ among members due to discrepancies in money stock growth. They would be equalised once they put such growth on a compatible basis, see Parkin (1972), (1973), (1976). Discrepancies, though, may be explained by international factors acting on domestic inflation. Evidence seems to suggest that, see Nordhaus (1972) and Cross and Laidler (1974). Even if monetary policy is an important inflation determinant, international factors particularly in more open economies may make close monitoring of the rate of change in prices uncertain(24).

With respect to the direction of causation between national money supply and economic activity, studies(25) point to some powerful presumptions reached for the existence of a causal chain running from monetary changes to variations in incomes. There is, though, a range of disagreement about the strength of such effects in practice, see Goodhart (1975, pp 192-3). Monetary expansion though has a stimulating effect upon the economy even if one accepts that the transmission mechanism is obscure and the process of uncertain timing and strength. The less the availability of spare capacity and the more flexibly expectations of price inflation are revised upwards, the larger the relative effect on inflation. Thus, monetary expansion, if undertaken with enough rigour over a reasonable length of time, should be sufficient to cause inflation(26). Where output cannot change quickly, as has been the case for

the seventies, the link between money and prices is most obvious when money grows fast as has been the case for many countries in the last decade. Monetary expansion is both necessary and sufficient for price inflation and a lower expansion is a sine qua non for price stability. Inflation could be regarded as a monetary phenomenon. It may not be viewed as such however if cost-push factors are important and accommodating inflation takes place, which would appear to be the lesser of the two evils i.e. inflation and unemployment. Those who consider money as the prime cause explain why this choice is available only in the short-run, see Bain (1975, p 124). McCracken (1977, points 25, 26) provides cost-push evidence in many European countries in 1968/69. The major acceleration of the UK inflation in late 1969 is attributed to such causes, see Goodhart (1975, pp 219-20). Evidence of the relevance of trade union pressure is offered by applying the Sargan (1964) approach, see Henry, Sawyer and Smith (1977). Also a study on the mechanism of wage formation in Italy, by Modigliani-Tarantelli (1977), is not consistent with the pure monetarist approach. In 1973 economic expansion was accompanied by an upturn in commodity price increases and world inflation even before the oil shock. The latter had an effect in the overall price increase. Inflation accelerated in 1973. At the same time, monetary policy tightening led to a downturn in both economic activity and inflation. For the UK, Davies (1980a) suggests that the inflation acceleration in 1974/75 seems to have reflected somewhat special factors, particularly the collapse of incomes policy and the existence of statutory threshold arrangements. The monetarist view places emphasis on what caused inflation in the first place. It is the outcome of past expansionary policies that could be avoided if

governments adhered to a constant growth rule. Walters(1970) provides such an explanation for the UK inflation in the late sixties, where monetary expansion was rapid and trade unions were by then looking to its growth rate as the best indicator of future inflation rates, so that it had a direct effect on inflation and a reduced impact on output. Vaubel (1978b) analyses the inflationary experience in Europe during the last decade. Monetary dispersion, when floating started, reached record levels, refuting the view that exchange rate changes since 1973 have been due to non-monetary factors, see also Vaubel (1978a). Excessive monetary expansion under the parity system in 1971/72 began to work its way into European price levels in the second half of 1973. The rising inflation led to expectations of further rises in 1974, not borne out by the facts due to monetary deceleration. It was due to these inflation-induced, false inflation expectations that negotiators, on their nominal wage bargaining, failed to take account of the fact that the deterioration of European terms of trade by the oil price rise had curtailed the productivity rise and thus the employment-neutral rate of real wage rise. Both monetary deceleration and inflation-induced excessive wage rises led to depression and mounting unemployment in 1974/75. Accommodating policies were adopted to lower real wages through further inflation. Authorities thus reacted to their destabilising monetary policies of 1971/72. Monetary targets were gradually adopted since 1974. However, monetary policies continued to be unstable. Governments continued fine-tuning policies and some of them diverged considerably from their monetary targets[27]. Experience also indicates a shortening of lags since 1975. It would confirm that inflation expectations have become more and more adaptive and rational and that as a result, employment effects arising

out of monetary changes are more and more short-lived[28]. Monetary policy seems to be rapidly diminishing its effectiveness in influencing real economic variables implying that monetary policy autonomy and nominal exchange rate fixity are no longer important except on price level stability. This in turn is a strong argument for a European MU.

The final comments concentrate on the NRU. Its stability has been put into question. This equilibrium level is obtained from the grinding out of various demand and supply functions within a general equilibrium Walrasian system, provided that the characteristics of the labour and commodity markets, including market imperfections, are included in it. Goodhart (1975, pp 214-21) argues that under the current conditions of uncertainty, economies do not proximate to such a system. Forces determining the NRU are many and various. For the monetarist, Walrasian equilibrium will emerge from actual labour and commodity markets with their imperfections. Others argue that imperfections are precisely deviations from the conditions necessary to achieve equilibrium. Monetarists on the other hand assert that it is for this reason, because current theory is incomplete and unsatisfactory in an economy characterised by a mixture of competitive and monopolistic elements, that fine tuning should not be pursued and steady monetary and fiscal policies should be announced long in advance and strictly adhered to. The many forces determining the NRU could render it unstable. A steady monetary policy would reduce inflationary expectations, trade union militancy and excessive wage increases and avoid rising unemployment, reducing a great element of NRU instability. The relevant question is what one should deduce from the long-run relationship between money and prices. On this view, higher unemployment costs to reduce inflation

are transitional since at the end the unemployment rate established will be the NRU. The question is at which level is this NRU. If it is low then any costs will be transitional. But if it is high a member may be forced to maintain the same trends with the rest of the members. As an independent country, in view of domestic pressures, it might prefer to establish a lower rate and suffer higher and increasing inflation rates which go with it. In the EEC the NRU is estimated to be equal to 2.9 percent and even less for Germany and France, see Duck, Parkin, Rose, Zis (1974). It was found surprisingly low, 1.7 percent, for the UK, see Parkin-Summer-Zis (1974). Goodhart (1975, p 220) suggests that it has risen in the seventies. Spitäller (1971) estimates the EEC figure close to 5-6 percent. These measures though, are based on rather arbitrary assumptions about productivity levels. Obtaining firstly estimates about productivity, Presley and Dennis (1976, pp 88-93) estimate the NRU, which is as low as 2.07 percent for the UK and as high as 6.8 and 9.3 percent for the Netherlands and Denmark respectively. The EEC average is 4.6 percent. Another question has to do with the transitional costs, apart from the NRU itself. Political pressure may not allow governments to incur such costs, especially on high inflation members, where transition may involve a recession lasting several years(29). Such considerations have been recognised even by a group of monetarists when they suggested less painful strategies to reduce inflation and simultaneously achieve the endangered European MU(30).

Assuming that the coordination approach remains and governments behave properly in the union spirit, the major problem is that the resulting unemployment rate may not be satisfactory to the populace. Governments may hope to convince it to accept,

for its long-run benefit, whatever rate is consistent with maintaining inflation at acceptable levels. However, this economically acceptable level may not be so acceptable politically. Governments may be pushed to run the economy at higher demand levels, in the hope that an incomes and price policy would not raise unemployment and would also have some favourable effects on expectations. From the MU viewpoint it would require a community wide collective bargaining and incomes policy. Such intervention inevitably has increasingly undesirable resource allocation effects. Its failure would intensify them, reducing further efficiency and productivity, exacerbating cost-push inflationary pressures and would, in the end, have perverse effects. Attempts with such policies are not encouraging, see Goodhart (1975, p 228). Factors that determine the NRU could be deep rooted and slow changing. Intervention may only exacerbate industrial relations or impose a temporary and inefficient camouflage upon underlying conditions. If trade unions successfully resist necessary unemployment rises, one is faced with an autonomously determined trade union militancy and an accommodating policy that follows it. Lack of success on the resulting incomes policy - apart from the implications to a particular country - could work against the MU. It is necessary that more attention should be paid to the NRU. Policies should be undertaken to reduce it, including retraining schemes - for a country with structural problems - and investment management policies. Apart from the national governments, the EEC central body could contribute a good deal to an effective regional policy, rising employment levels, especially to members with potentially high transitional costs, apart from the reasons of imposing such policy strictly on the MU context. In the last decade most economies have been run at less than

the NRU and accelerating inflation was experienced. The more stable inflation rates of 1958-69 were experienced at relatively low unemployment levels too, suggesting that most countries must have experienced an increase in the NRU in the seventies. The reversal of that increase could be sought and, if achieved, could certainly help the adjustment needed for a successful MI process in Europe.

CHAPTER FOUR POLICY COORDINATION AND THE ARRANGEMENTS FOR A EUROPEAN ECONOMIC AND MONETARY UNION

The creation of EMU - within the permanent objectives of the Rome Treaty - originated from plans to expand the EEC into an economic and monetary union(1). The major reasons for this decision were: firstly, the arguments for the creation of an MU analysed in chapter two. Secondly, an MU is considered the natural culmination of a customs union. 1968 was a crucial year. By that time the CU was achieved. It was felt that, given the high degree of interdependence, a CU alone could not provide long-term security to the Treaty objectives. Given free good and factor movement, no incentive exists for a firm to move to any particular country. It can produce in a certain part and sell its product to the rest of the union, creating or increasing the structural problems of certain members, deteriorating their objectives. Protectionist actions could follow, destroying the CU. An economic union would be required to ensure the Treaty objectives. An MU is needed too, since it is only within it that the convertibility of members' currencies at fixed exchange rates can be guaranteed, thus preventing money market fluctuations distorting competition and intra EEC trade. Thirdly, the 1968/69 European monetary crisis represented a serious setback in what had appeared to be a steady road towards integration and ultimate economic union. It put into jeopardy what had already been achieved, namely the CAP and the viability of the CU. Fourthly, the massive growth of capital flows across the Atlantic and the effect of US monetary policies on the EEC members, at moments when they were pursuing opposite objectives, were painful experiences. They suggested that dollar denominated assets and liabilities had become uncomfortably close substitutes for similar instru-

ments denominated in European currencies. EEC members appeared to have lost much of their monetary autonomy. A closer link-up of European financial markets and/or loosening the fixed rate relationship to the dollar was expected to weaken the impact of future changes in US monetary conditions in Europe.

4.A. The Policy Coordination Approach

4.A.a. Monetary Policy

Members would have to harmonise monetary expansion rates ex ante at a rate which, given the output growth level, would be consistent with price stability to bring long-run intra-EEC exchange rate fixity without recourse to foreign exchange intervention. Exchange rates are not directly pegged, but relative money supply targets are. Care should be taken that such rates do not impair growth in the union either through a general inflation rise or rising recession. Ex ante target setting gives full information on central bank behaviour, reducing the biggest single uncertainty in the system. Inflationary expectations as well as the demand for credit are affected by announcing long-range monetary targets. A commitment - absence of discretion - to a stated evolution in monetary growth would enlist the competitive forces of the market on the government side. Market behaviour is based on expectations about inflation and government policy. If these expectations are clearly defined the market system would help to iron out distortions rather than create them.

With respect to the instruments used to assume a stable secular monetary growth, open market operations are preferable. They occur at the Bank's discretion, can be executed smoothly and need not particularly influence one sector of the economy more than another. Alternatively, the rediscounting mechanism on bills or bonds would require a continuous manipulation of

the discount rate for monetary control. The discretionary behaviour of private market operators is important. The question is how the appropriate degree of money supply control is to be obtained. One view is to control the rate of growth of the monetary base. Authorities often lack the means to achieve an effective control over broader definitions. The MB should be used because its secular growth is strongly correlated with the long-run growth in other monetary aggregates. By operating on the MB authorities should seek to ensure the desired growth of whichever monetary aggregate they consider most appropriate. Further, it would seem that the Bank is in a position to control its own liabilities and thus the money stock. The MB is correlated to other aggregates only in the absence of major regulatory changes in reserve requirements, effective interest rate ceilings or significant growth in unregulated financial intermediaries. Lack of such correlation due to the existence of these factors has been suggested for the UK case, see Foot, Goodhart and Hotson (1979, pp 151-2).

The greater emphasis on MB control could result in massive and potentially unstable interest rate movements in the absence of central bank intervention to ameliorate such fluctuations. Heavy financial market pressure could result. A more relaxed MB version could be suggested giving sufficient adjustment time for the banking system to absorb the shocks. On the other hand, although to a lesser extent, expectations may not evolve in a desirable way.

The UK seems to present a good example on the MB debate. The competition and credit control document (1971), shifted the focus from credit towards broader monetary aggregates.(2) Minimum reserve ratios were established on banks and credit allocation was to be determined by the level and structure of

interest rates. The weakness of the system soon became apparent. The Bank introduced the supplementary special Deposit Scheme (SSDS), Dec '73, and used it frequently up to Mar 20, '80. It was a partial retreat from allocation by interest rates alone. It resulted in serious distortions as banks tried to avoid penalties under the SSDS restrictions. The M3 measure of monetary aggregate behaviour had been downgraded. Also the assets ratio distorted the yield relationships between short-term assets qualifying as reserve assets and others. This helped to inhibit the development of a broader market in short-term public sector debt which might otherwise contribute to a better control.

It would then seem more effective if authorities undertook the necessary measures for a direct control on money supply operating on the liabilities side of banks' balance sheets. MB use, under a stable money supply growth to bank reserve growth ratios, could enable them to exercise close control of money supply targets, while avoiding the problems which arose in open market operations because of short-term targets, see Lomax (1979, pp 4-5). It could provide them with information to respond more quickly to diverging monetary trends and allow them to control the volume of debt sales to the non-bank public more closely and effectively, achieving also a smoother pattern, since M3 control involves sufficient debt sales to offset factors such as the PSD, tending to augment monetary growth[3,4], see Banker (1979, p 21), Wood (1979). Under MB use, interest rates would be altered continuously, adding another criticism to the system. Experience for the UK however, indicates that its interest rate performance in recent years was not stable, even when compared with countries such as Germany and Switzerland, which apply MB systems. One could say though that this is a consequence

of the fact that no monetary system can cope adequately with problems caused by fundamentally inflationary policies pursued by the authorities. Therefore short-term interest rates might be volatile, but under MB policy, authorities could indulge in smoothing operations.

Finally, simulation models also indicate that, despite a greater interest rate volatility, speculative flows have a lower impact on spot exchange rate volatility under MB control, than when policies are conducted in terms of interest rate targets, see de Grauwe (1978, p 25).

The stability of the demand for money function is another major prerequisite for a successful targeting. This question is analysed on the EEC section, see pp 89-99.

4.A.b. Fiscal Policy

By incorporating the government budget constraint in Keynesian models of income determination, one can account for the monetary repercussions of fiscal policy action. Even in the absence of discretionary fiscal policy, moreover, such a constraint highlights the repercussions of pure monetary actions on the budgetary balance.

This constraint is the missing link closing the relationship between the public sector and the rest of the economy. In a closed economy, it implies that total expenditure by the public sector has to be equal to total financing available from taxes, new government bonds and net MB creation. It imposes a restriction on government freedom to choose arbitrary values for policy variables(5). The outcome of fiscal policy is not independent of monetary policy. The constraint can be written as follows:

$$G + P + T = dB + dH$$

where G is the public sector expenditure, P is the interest

payment on outstanding debt held by the public, T is the public sector taxes, B is the net public holding of government debt, and H is the MB.

Changes in government deficit cause changes in either MB or privately held bonds or both, depending on the way the budget is financed. Changes in bonds affect interest rates resulting in crowding out private expenditure. If the deficit is financed through MB expansion, the dependence of the fiscal stimulus on accommodating policy is evident. Apart from fiscal and monetary interdependence in the context of macroeconomic stabilisation, it also suggests that a condition for full long-run equilibrium in a static model is that $dH/dt = dB/dt = 0$ suggesting a long-run balanced budget. Moving now to the relevant case of an open economy, and having in mind a group of such economies aiming at creating an MU, the question is what link exists, if any, between fiscal stabilisation, budgetary deficits and exchange rate fixity among the members. Given the importance of correct monetary targets one can see the danger that fiscal policy implies with regard to such policy. What is of importance is how a deficit is financed. Inadequate bond finance could lead to net money creation which could result in monetary target overshooting. Such a contribution could continue for long periods. Further, while in the long-run the XB structure is determined by the private sector's desire to hold various assets and currency, in the short-run the "portfolio approach" - an extension of Mundell's theory on international adjustment mechanism that incorporates both stocks and flows - puts emphasis on the overall government budget policy[6]. A fiscal-monetary policy that is not in line with the private sector's desire to accumulate money or with the foreign sector's desire to accumulate the country's money as

international reserves, must produce a loss in reserves. An external deficit results. This loss cannot be sustained in the long-run and the government would have either to reduce the deficit or increase bond finance, accepting interest rate rises, although a small country cannot float unlimited quantities of bonds. One can see a shift of emphasis from fiscal stabilisation policy, which deals with the problem of maintaining IB, towards a government budgetary policy consistent with the objective of securing intra-union exchange rate fixity. The implication is that harmonisation of budgetary policies between member states should become a major preoccupation.

Another problem seems to be created here. Existing regional imbalances or the ones likely to arise out of coordination have to be dealt with; otherwise countries may not participate. In the absence of fiscal policy flexibility and adequate labour mobility, it is argued that excess supply of labour would tend to acquire strong and disruptive regional connotations, see Magnifico (1973), Masera (1975). Historical experience indicates that fiscal policies might well be left to local-national control, subject to dismantling all fiscal frontiers that could reduce market integration(7). However, even in the framework of policy conclusions reached above, national governments could still influence the timing and geographical distribution of aggregate demand and activity. The same instruments remain available. The only restriction is that the PSD be financed by loans at the going market interest rate, and provided that long-run equilibrium conditions, which derive from the budget constraint and the need for intra-union exchange rate fixity, are not violated.

We turn now to the question of fiscal influence, which refers to the right dosage of fiscal stimulus to achieve the

desired demand level. There is a debate on its necessity and effectiveness. The monetarist approach attaches importance only to monetary policy. It takes an essentially long-run view. However in the real world frequent shocks take place, interfering with the adjustment process or disturbing an equilibrium. The once-and-for-all adjustment to price stability does not seem to hold. Continuous attempts to keep price stability could involve significant costs. In the continuing presence of such shocks, where one may not be able to speak of a long-run adjustment process but rather a succession of medium terms, fiscal influence may be relevant. Monetarists assume that in case fiscal policy is not accompanied by accommodating monetary policy, it will not be able to influence the real output or the price level. On this offsetting between private and public activity Blinder and Solow (1973, pp 52-5, 32-3) demonstrate both theoretically and empirically that under a bond financed deficit, by making more realistic assumptions about interest elasticity of investment and money demand and on the wealth effects on the demand for money and consumption, the more plausible possibility is for an expansionary effect. But it may not, in all cases, be expansionary enough to bring convergence towards a balanced budget equilibrium and close the budgetary gap. While empirical work does not seem to be conclusive - Balassa (1976), Modigliani and Ando (1976) - it would appear that in the medium term both policies could matter and while they are not necessarily equally suitable to achieve a certain objective, they may be complementary in their economic effects. One would then suggest that the size of the PSD should be agreed too, apart from the way to finance it. At the same time, it seems that this size has to do with crowding out effects, when it is large. Excessive

borrowing could imply abnormally high interest rates holding back private investment. It could also imply more inflation in the future, even if it is bond financed. Further, government expenditure is usually less productive increasing consumption shares at the expense of investment. There are also reasons why authorities cannot hope to vary this size for the purpose of achieving some desired monetary aggregate growth, see Goodhart (1975, pp 156-60).

In a recession, a budget deficit is created or increased by low tax receipts and high government spending. Some increase in PSD as a percentage to the national income may be consistent with the maintenance of a given monetary target and without putting much pressure on interest rates. It should be reconciled with the monetary target and price stability objectives of the medium term strategy. In the long-run, the target should be for a balanced budget for each member.

4.8. The Case of the European Economic Community

The Barre report (1969), argued for more effective consultation procedures, policy coordination and gradual exchange rate fixity. The Werner report (Oct, 8, 1970) embraced and extended these ideas[8]. EMU was to be achieved gradually in three stages by 1980. The coordination process implied EEC level consultations on drawing up monetary policies, national budgets, public spending, taxation and budget finance methods. Power over policies would later be transformed to the community. Monetary and credit policy centralisation would take place and external monetary policy would be decided at the EEC level. Harmonisation could imply the establishment of free factor mobility, similarity in tax structure instruments and identical interest rate levels. Parliamentary control would secure it. Intra-EEC exchange rate margins would be narrowed for the first

stage, with subsequent further narrowing going together with coordination progress.

The Council accepted the bulk of this mixture of "economist" and "monetarist" proposals, although the question of the Fund, proposed by the report, was not settled but left for further investigation, due to disputes between the two groups, although the mutual aid mechanism - an element of the Barre plan - was activated. The intra-EEC band would be narrowed to 1.2 percent to move within the 1.5 percent dollar band instead of the 2 percent IMF dollar band.

These measures, to be implemented from June 1971, were shelved due to the major IMS crisis. The Smithsonian agreement, December 1971, made the cross rates of two non-dollar currencies reach 9 percent. Such a degree of fluctuation was incompatible with the proper functioning of the intra-EEC trade, and the discouraging of further dollar use by European firms. The dollar would otherwise have become more predictable than EEC currencies. It would be counter to the EEC aspiration to move towards an MU, if the dollar were to be used in intervention. Apart from affecting the members' competitive conditions, the possibility was for US to continue to avoid defending the new arrangements. Speculative flows could result and the burden would fall on European central banks. They would accumulate inconvertible dollars with no guarantee of being able to convert them into other instruments. Controls could pose a threat to monetary truce in Europe. Lack of progress in MU could jeopardise the CU and CAP.

The Euroband was finally limited to 2.25 percent, following an agreement on intervention and debt management(9). Whenever the strongest currency's percentage premium over its parity plus the weakest currency's discount on its parity reaches the

2.25 limit, either one or both countries buy the weakest currency with the strongest one. Under debtor intervention the country has first to borrow from its partner, the strong currency needed to purchase its own weak currency, hence the need for the very short-term credit facility, incorporated in the Snake scheme. Irrespective of the kind of intervention, settlement is needed by which periodically - monthly in EEC - creditor countries can exchange the accumulation of weak currency for a more acceptable reserve asset, and at the same time obtain repayment of their very short-term credits, likewise in terms of an acceptable asset. Settlements should be affected by transfers from debtors to creditors for a mixed bag of assets settled in proportion to the debtor's reserves.

The trend and width of the band would be affected by the global EEC dollar position, the exchange position between members and the volume of intervention undertaken.

It was agreed that coordination would guarantee exchange rate fixity and narrow exchange rate margins. The question is what kind of coordination was adopted. The MU envisaged by the WR was something more than a pseudo-exchange-rate union. Firstly, because it was to be achieved in three stages within ten years. Secondly, the first stage would be used to make EEC instruments more operational. Thirdly, the first stage should not be considered as an end objective, but should be associated with a process of economic and MI, launched with the determination to reach the final goal. Finally, in the first stage consultations should be strengthened, monetary and fiscal coordination and harmonisation would be intensified. The WR explicitly referred to the kind of integration of economic policy and the establishment of rules on the implementation of national policies during the first stage. This is

more than a pseudo-exchange-rate union is believed to be as it lacks explicit rules indefinitely. However, since such rules were to be created during the first stage, it had a marked degree of resemblance to the latter at that time. But it did not mean that it would remain like that indefinitely. It goes without saying that if no such integration and rules occur during these stages, then the European MU would, de facto, become a pseudo-exchange-rate union.

4.B.a. Difficulties in Monetary Policy Coordination

Ex ante harmonisation of monetary expansion so as to render exchange rates constant without recourse to intervention was agreed. It was decided that in 1973, the annual growth of the broadly defined national money supplies should be held at the estimated national GNP growth plus the common target rate of inflation, set at 4 percent. Members would operate a sort of monetary aggregate target.

Despite this agreement, there was the problem of choosing the appropriate aggregate to serve as a target. This was not solved at that time - and even in the course of Snake functioning - in spite of rising concentration on controlling such aggregates. Broad definitions were thought by some to be wrongly directed. Targets should be set for the MB for each member. Others did not find a close relationship between MB and broader definitions, which led them to propose target setting in terms of the latter. A variety of targets were used reflecting largely differences in institutional arrangements, substitutability of financial assets and economic openness, see Balassa (1977, p 95). Certain members were not even able to use definitions such as MB, M1, M2, M3. These disparities were later recognised by the Community, 1977, when it stated that quantitative guidelines should be defined according to

the monetary policy instruments available to each member and if possible to concentrate on more than one of these aggregates so as to reduce the chances of evasion by manipulating a particular aggregate.

Other technical difficulties suggested that it may not be a simple matter to define ex ante consistent targets. No systematic studies existed on the stability of the demand for money function either at that time or even nowadays. Evidence for the UK suggested that it is relatively stable in the long-run although in the short-run its stability is questionable, see Kavanagh and Walters (1960), Goodhart and Crockett (1970), Laidler and Parkin (1970), Haache (1974). Experience shows that major institutional changes are likely to be associated with shifts in the demand function. Coghlan (1978) points out that this is the case for the UK since 1970. An OECD study (1979) which includes the four major EEC members covering the period 1960-77 suggests that M1 definitions perform better only for the UK and Germany. Such evidence is not reassuring and disturbances from recent years have rather confused the picture. McClam's study (1978) points out that monetary targeting is likely to be more difficult in the EEC than in the US, and would appear unlikely to remove income fluctuations adequately, except perhaps in France and the UK. Money supply adjustment to offset shifts in the demand for money function could pose a number of difficulties implying target breaching. Operating a more flexible policy -a range of targets - could probably weaken the beneficial expectational effect of targeting. Difficulties exist also in distinguishing the causes of demand shifts.

More refined studies are required for all EEC countries to obtain the information required on monetary aggregate projections.

Community efforts are lacking. Results on the demand for money stability depend on the country's particular characteristics making the whole effort even more difficult. They could differ substantially between members. OECD results suggest that significant differences exist among the four major members. Estimations of the elasticity of the demand for real balances with respect to real income suggest that, if real growth is running parallel in the four countries at 5 percent per annum and inflation rates are also similar, the real money stock growth compatible with stable interest rates and exchange rates varies from 4.5 in France to 13 percent in Italy under M1 and from 6 to 13 percent under M2. While more studies are needed, it can be seen how difficult it is to define a priori compatible policies. A rough parallelism in the observed growth rates of monetary aggregates offers no guarantee of exchange market stability.

There are also problems on the money supply side. Countries like Belgium and Denmark do not use monetary targets. Among other reasons they feel that their vulnerability to external disturbances and the possible need to give priority to interest rate adjustments, weights more against a commitment to specific targets, in favour of maintaining fixed exchange rates(10). There are also problems on short-term targeting if one is to take into account the extent of market limitations on debt management and open market operations.

The conclusion would seem to be that it is difficult to define a priori compatible monetary policies and that the community needed, and still needs, much more analytical work to develop a solid basis for ex ante evaluation of compatible announced targets and continuous monitoring of current policies. Under these circumstances, where coordination was far from

effective, the narrowing of intra-EEC exchange rate fluctuations would seem to be of questionable durability. Therefore, if exchange rate arrangements are to be kept, intervention might have to take place in the future, until the above condition is fulfilled. The situation would de facto seem to bear more resemblance to McKinnon's solution (1977), where authorities attempt to define both ex ante monetary policy coordination and ex ante exchange rate arrangements. When money supply targets turn out to be inconsistent, official intervention would take place to keep them within the targets. It may appear contradictory to have also an exchange rate target, since it would seem that one cannot control both. On the other hand, to focus on intervention alone to peg exchange rates may prove a weak arrangement. Countries may not allow reserve changes and undertake parity changes instead. Further, even despite intervention, suspicion of the given currency would continue and the country could, for example, lose the bulk of its reserves and at the end change its parity. At that stage therefore, where despite the problems members wanted to move towards MI, consistent monetary targets should be arranged to reduce considerable uncertainty. Intervention should take place in case such arrangements prove inconsistent. Countries should then change their monetary targets until the basis for ex ante compatibility of announced targets is established. Intervention, unless for reasons of a different nature, would be eliminated. In view of lack of studies and preparation on the subject, a time consuming process would be needed to accomplish this objective. What is important though, is that until that time comes, consequent adjustments on monetary targets should be accepted. Monetary arrangements combined with exchange rate ones should avoid interference or inflation-

ary bias, with undesirable implications for the members and the MU, because monetary and exchange rate policy would be predetermined by consent(11).

The obligation to intervene in order to prevent exchange rate deviations beyond preannounced limits implies changes in national money supplies. Indeed, such intervention is undertaken to correct the money supply level. Short-run monetary expansion or contraction should not be sterilized, since here the objective is to keep the exchange rate targets. The application of sterilization policy could result in failure in maintaining certain exchange rate targets, see chapter two, pp 45-8. Disequilibrium in the markets could remain and necessitate even higher exchange rate adjustment. While the rationale of using it has often been that it isolates domestic money markets from destabilising external influences, an important source of instability seems to be sterilization policies themselves(12).

Using McKinnon's analysis (1977, pp 45-6) in terms of the MB some general conclusions can be reached: assuming no direct FEM intervention, each national MB expands pari-passu with expansion in domestic credit from its central bank(13). The question is, how fast central banks should expand credit. Firstly, it should be kept in mind that maintenance of fixed exchange rates implies that prices of tradeables would be tied together across borders although national CPIs need not move in unison. The rule governing the secular increase in the domestic nominal stock of money, would be one which equals the projected increase in the domestic money supply to the projected increase in real GNP, plus the expected percentage change in the GNP price deflator, assuming tradeable goods prices were approximately constant. Having each bank expand credit smoothly, as described above, could ensure that relative exchange rates do

not move persistently in one or other direction, and the action of speculators, by having full information on central bank behaviour, could become of a more stabilising character. Any inconsistency on money supply growth rates with exchange rate targets set, would result in non-sterilizing intervention. If the domestic central bank credit is set at a secular growth path, it can be expected that FEM intervention will dominate short-run money supply changes. This is in accordance with consistent monetary behaviour. If the expansion of the domestic MB component approximates the long-run demand for MB in the economy, then the foreign reserve component will fluctuate according to short-run changes in the domestic demand for the MB. The harshness of the short-run adjustment to imbalances in international payments could be ameliorated through various channels, see McKinnon (1977, pp 51-4).

Concluding, it could be said that intervention in the lack of coordination would be a futile process in terms of preventing exchange rate changes. The MU would be replaced by a pseudo-exchange-rate union with parity realignments, whose frequency would depend on the degree of divergence among the economies and on the frequency of external shocks falling on diverging economies. Given that effective coordination would take time, economies were diverging and apart from general guidelines no specific rules were established, the possibility of realignments could not be excluded. The important point though, is that such realignments should become less frequent in the course of time along with economic convergence. The effect of external shocks could serve as a major test, at a moment of time. The need to intervene for quite some time in the future and the necessity of the non-sterilizing rule implies that this policy may not be compatible with strict monetary

targetry. Control has to be directed more towards domestic credit growth. This would ensure that monetary growth is controlled in the union group as a whole.

Finally, it is not only money supply that matters. The factors that could disturb or even jeopardise the coordination process, have been analysed earlier, see chapter three pp 64-7.

4.B.b. Fiscal Policy

The WR provided for fiscal coordination and harmonisation. However, it did not spell out in detail the reasons why fiscal policies are important. An answer was attempted above, while here, we deal with the possibility of transferring fiscal policy at the union level. Such a case has been put forward, within the concept of federalism, which argues for stabilisation policy at the union level, given that the scope for an active counter-cyclical policy tends to be highly restricted for governments of small and highly open jurisdictions, see Oates (1976). Federalist arguments are relevant on the direct and indirect effect on aggregate demand and employment, while the close connection between fiscal and monetary stabilisation pointed out above is important for its implications on net wealth effects and the XB.

A community fiscal policy is a key element in any MI program. The link between fiscal and monetary stabilisation policy implies that proposals for fiscal anticyclical action become fully effective when they are supported by community control over monetary conditions. The community could not have adequate debt-financing power and mechanisms for anti-cyclical budgetary policy in case capital markets and monetary conditions are under national control. However, community debt issuing and management policy could play an important role in the creation of a truly European capital market, a major step

forward in the direction of MI. A Community fiscal stabilisation policy requires occasional deficit financing and burden distribution of the resulting government debt. If monetary policies remain national, it is rather unrealistic to expect governments to finance Community fiscal initiatives through monetary expansion. Debt financing entails difficulties. Issuing debt and interfering strongly in the capital market could affect national monetary control. If bonds are floated on separate national markets much depends on goodwill and policies of national monetary authorities. If national monetary conditions differ, the amount allocated on each market is important. Under these circumstances a community debt management policy - implied by a credible and workable community fiscal stabilisation policy - can be operated successfully only in conjunction with effective monetary arrangements between members.

4.B.c. Implications

The narrowing of exchange rate margins had various implications referring mainly to reserves, the dollar role, interest rates and the adjustment burden.

Reserves are needed for exchange rate stabilisation. Grubel (1973, pp 357-9) argues on the social productivity costs incurred, justified on the grounds that social production is attached to them because their use buys stability. The union "internalises" dynamic externalities.

The use and predominance of the dollar as an intervention currency internationally and in transactions for private use was due to various reasons, see Strange (1979). On its intervention and reserve use the EEC exchange rate narrowing would become relevant only if it was coupled with EEC currencies instead of, or in conjunction with, dollar intervention. EEC

members could hold EEC currencies as reserves and third country central banks might find interest in holding them too. US monetary policy dominance could be reduced internationally(14). It was finally agreed that dollar intervention would only take place when the Snake hit the tunnel while intervention inside it would be in terms of EEC currencies. Discretionary power on the kind of intervention was curtailed and it was to be seen whether members would abide by that. The Ansiaux report (1970) put emphasis on the need for intervention only in dollars, at least in the initial stages. Liquidity threats existed too under a possible EEC currency reserve role with likely destabilising effects, given the vulnerability existing in speculative shifts between currencies(15). Williamson (1977, p 80) on the other hand explains why intervention in EEC currencies would be necessary for the exchange rate arrangements to be maintained.

However, despite these measures, success would very much depend on outside pressure on the entire bloc, if one was to realise that major currencies were highly susceptible to fund flows in and out of dollars and given the semi-integrated state of the EEC, with DM being more preferable than other currencies. Continuous desire to, say, go out of dollars, with or without the tunnel, could lead to pressures inside the Snake, realignments and/or controls or even break down of the arrangement. Success of the Snake arrangements would be for EEC currencies to move closely together, without intervention, against the dollar and the task of smoothing out any day to day fluctuations within the Snake would be fairly easy. The bloc would move up and down but changes in the bloc would be modest, evened out by small intervention amounts. EEC exchange rate stability and dollar stability would seem to go together. One would be

difficult to achieve without the other. Stability would very much depend on cooperation between both sides of the Atlantic on exchange rate policy(16). EEC exchange rate stability would be a part of a worldwide stability problem. A common EEC stance on external challenges would simplify the problem of international negotiations and adjustment.

However, the reality was that, apart from the US attitude, there had been opposing views within the EEC on how the Snake should operate reflecting not only XB positions but also differing economic philosophies. The EEC dollar level would not be wholly determined by market forces and agreement on the appropriate level might not be a simple matter. The Ansiaux report foresaw this by suggesting that for the establishment of the EEC dollar level, reserve changes experienced by members and the direction and size of the EEC XB vis-a-vis the rest of the world should be considered. Given the conditions required until an MU is achieved, all difficulties for exchange rate fixity in the EEC stemmed from the different national economic situations making certain member currencies more preferable than others, which could be intensified under a dollar crisis(17).

The narrowing could raise the sensitivity of interest rate differentials. Capital flow responsiveness to interest rate differentials is enhanced under fixed exchange rates, see Crockett (1977, pp 150-166). Due to the repercussions of such increased sensitivity the scope for national independent monetary policies would be reduced(18). It was doubted though, if such sensitivity would be higher than that of such differentials between any EEC member and the Eurodollar market, given that margins were narrowed to levels applicable to dollar rates(19).

It was argued that margin narrowing reduces the potential

of exchange rate recovery by affecting the volume of stabilising short-term flows. Under confidence crises such a reduction would be intensified. Lambert and de Fontenay (1971) explain why such an implication would result only as far as EEC speculators are concerned dealing with EEC currencies. Currency instability could result. Huge sums could be paid out to reduce it, due to attractive dual speculative opportunities created by multi-currency intervention. If one accepts the dollar as a numeraire, speculators make profit on both their short position with respect to an EEC currency, say Lira, and long position on another, say the DM. However, the narrowing was expected to reduce speculation, relieving the authorities from frustration of their monetary control.

Under the arrangements members may not be able to use their full allowable fluctuation margin against the dollar. In contrast to the EEC as a whole each member would loose part of its exchange rate flexibility vis-a-vis EEC and third currencies. Hence some of the Smithsonian exchange rate flexibility would be nullified(20).

The motivation of the Bretton Woods system was to promote integration by keeping costs of exchange rate uncertainty at a low level. Truly fixed exchange rates imply approximate inflation equality among countries and dependent monetary policies. However, they have suffered major drawbacks(21). It is suggested - Vaubel (1979, p 17), Korteweg (1979, pp 33-5) - that a parity system can function consistently only if there is a dominant currency. If anything it will be smaller countries adjusting to larger ones. The dominant currency role would be performed by the largest economy currency in the region, for the Snake the DM, because the largest economy and its currency tend to count for the largest part of transactions

of smaller countries and because being least open vis-a-vis the rest of the world, it can best afford to adopt a passive policy. But since benefits from exchange rate constancy are not fully internalised by the dominant currency country, it may not carry out policies acceptable to all group members(22). It could mean high adjustment costs for high inflation countries and high gains to the pivot country. Risks would remain as long as governments retained the right to opt out of the agreement. However voluntarily such a dominant currency could be accepted by smaller members, both economic and political reasons would lead major ones to opt out, especially in the absence of effective regional policies. The adjustment burden was an important question. BWS demonstrated that such a burden fell on deficit countries. Germany had declared that it would not accept more inflation for the sake of exchange rate constancy in Europe. A deflationary bias in the Snake could then be encouraged. Members should undertake consistent policies to bring genuine exchange rate fixity. A German surplus out of consistent policies compared to those of other members would mean that the latter should impose such policies too, since it is the condition of success for the exchange rate arrangement. Surplus members though, should make their contribution to adjustment within the limits imposed by these policies. In the absence of effective measures one is faced with massive speculative flows, encouraged by the band existence, large scale intervention and abrupt parity changes and/or controls. If parities are adjusted, especially with considerable and unnecessary delay, expectations of all those who based their plans on the government's promise to maintain parities are not fulfilled. Exchange risk is the consequence of national monetary sovereignty and any government pledging parity fixity

without giving part of its monetary autonomy makes a promise which it cannot fulfil. Once parities have been adjusted a number of times they tend to be distrusted, even where they happen to be durable, so that their declared purpose, namely reduction of risks and costs as obstacles to world transactions, is not attained. If at the same time the probability of controls increases, the risk barrier may in fact be raised by the fixing of parities. If finally new controls are introduced, exchange rate stability is bought by economic disintegration, misallocating resources internationally.

4.B.d. Technical Arrangements

These refer to the kind of exchange rate flexibility adopted, the offsetting mechanism and the degree of multilateralisation as well as the method of debt settlement.

The intra-EEC exchange rate margin determined the degree of flexibility among member currencies. Looking at the long-run commitment to complete fixity, the task should be on the short and medium run action to make convergence towards such a long-run goal credible. It would require a delicate balance between limiting central rate changes to a range that ensures enough discipline to lead to inflation rate convergence, and not postponing such changes so much as to lead to loss of credibility in their maintenance. Success would require sufficient short-run realism to avoid an inflexibility that would, given the scope for harmonisation in practice, only lead to currency crises, combined with a credible long-term commitment to fixity. The disadvantages of the band approach have been analysed by Machlup (1973), Balassa (1975), Magnifico (1973, pp 85-133), Goodhart (1975, pp 302, 309). A crawling peg system was thought to be more appropriate avoiding disruptions, see also Williamson (1965). The need for discipline would still force authorities

to avoid excessive inflation. Coordination pressures would remain high, since each member's action should be such as to avoid harmful effects elsewhere and since it is proposed only for a transitory period before the establishment of a complete MU. The MI efforts should not be undermined and a diminishing rate of crawl should be the objective. Other reasons to enforce integration exist too, see Balassa (1975, pp 216-7). Events also would not seem to suggest that it provides less incentive for coordination than the adjustable peg, which interfered with the CAP operation, making agreement on other policies difficult also. It created distortions in intra-EEC trade as well as in resource allocation between agriculture and industry. The MCA system invented - see Shone (1980) - put the adjustment burden from exchange rate changes to the industrial sector, reducing also the effectiveness of exchange rate changes to bring XE. With respect to the CAP, changes under the crawling peg, although frequent, would be small and at fixed time periods. Members would have time to undertake the necessary adjustment, which may be small without the prevalence of disturbances. It also had the advantage of preventing disturbances from accumulating, preventing possible large parity changes that could create crises or a possible blow. It would rather be facilitated under the circumstances where the exchange rate instrument was still needed, being more consistent with its aims, see Bloomfield (1973, p 27). Agreement on crawling peg would necessitate central bank cooperation, so as to support decisions taken on it and smooth out fluctuations, due to non-recurring flows, without attempting to move against the trend[24]. Also, possible deflationary measures could be reduced, since the exchange rate instrument - even in its limited use - would not cease to exist. The

necessity for fiscal coordination and harmonisation would be facilitated. Members should accept more of it improving resource allocation. Other controls could also be avoided(25).

However, members were not enthusiastic in accepting the implied rules. This sort of discipline would affect the degree of autonomy they wanted to maintain, see Wortmann(1973, p 131-3), Williamson (1977, p 64). At the end there was still the problem of how to assure parity adjustment in case parities become unrealistic. Parity changes would still be determined by men who possibly could not make up their minds as to the appropriateness and timing of parity changes.

Turning now to the offsetting mechanism bilateral compensation operations were allowed to be carried out to the extent that they were reciprocal transactions. The more frequent the reversal in balances and the closer the network of foreign exchange operations the greater the efficacy of the offsetting mechanism. Postponement in the settlement of their operations as a technical means for carrying out offsetting operations was for the purpose of cancelling out with subsequent operations of the opposite sign. Its effectiveness would rise by aiming at a multilateral offsetting mechanism, see Masera (1973), the most efficient being the one expressed either in EEC currencies or in dollars by providing the Fund with reserves which would utilise these sums to make the necessary settlement. It would also link the short-term monetary support mechanism (STMSM) with the very short-term credit mechanism (VSTCM), see Tsoukalis (1977, pp 142-50), both deciding and carrying out support operations. It would bring forth more efficient reserve harmonisation instead of the approach envisaged by the agreement where it was a by-product of reimbursement of financing. Reserve pooling was connected to credit expansion with the known division between

debtors and creditors and the latter's preference for bilateral credits.

The limited Fund role, finally adopted, would make it simply an agent facilitating Snake operations and administering the operation of the short-term credit mechanism.

Those who favoured an autonomous Fund role, bringing true multilateralisation, insisted that the Snake necessitated an effective STMSM. Debt settlement would also be facilitated and community responsibility would be extended to dollar intervention resulting in risk pooling. By receiving dollars and issuing units of account, it could be seen as a first step towards the final objective of placing all intervention under EEC responsibility. The unit of account could ultimately lead to a fully fledged European currency managed by a European central bank. National central banks did not seem to be willing to give up control of their assets and the loss of national monetary independence implied. A driving force towards policy coordination was therefore shelved. "Economist" arguments were used for opposing pooling. France opposed it on sovereignty grounds, whereas Italy being faced with pressures to remain in the Snake supported community responsibility.

The method of debt settlement had inherent problems due to IMS events and the instability of an inconvertible dollar, given the different reserve preferences. Fortunately this method was suspended, see Masera (1973, pp 279). Gold at that time was a problem. Had there not been such a huge discrepancy between the official and private market price, had not gold become frozen, the EEC, in trying to lessen its dependence on the dollar and yet unable to create its own common currency would have had a common monetary medium freely available for use on the intra-EEC settlements. The world - central banks and

individuals - were not quite ready to do without gold. Members against the deposit of gold as collateral would be credited by the Fund with units of account.

4.B.e. The Approach to EMU and Concluding Remarks

The gradualistic approach to MU is justified if one is to realise that coordination takes time to become effective. Other reasons offer justification for such an approach too, see Vaubel (1979, pp 28-9).

In the WR there was the principle of parallelism. Both monetary and economic policy coordination decisions should take place simultaneously. But while decisions on the monetary field are of a rather automatic nature, this does not apply to economic integration. Even if consultation procedures are strengthened, one does not necessarily arrive at compatible national objectives. The official approach to EMU was rather unbalanced, since de facto it could be possible that the monetary measures taken could not be followed by adequate economic integration that would validate them. That could not be described as a stable exchange rate situation. The approach could prove to be doubly unbalanced since within the overall monetary approach the requirement of an exchange rate union was emphasised to the detriment of other MU ingredients. Monetary measures though were to be carried out at the first stage, gradually. However, it was necessary that a certain threshold should be crossed from the outset. The Fund question could be used as an example here. Adequate reserve pooling could have a significant effect in maintaining the Snake parity. No agreement was taken. There was the position of claiming that Snake membership would help to harmonise members' policies but at the same time declining to accept possible consequences for reserves of a common exchange rate policy implied. Gains

and losses of reserves following upon its acceptance would continue to be national gains and losses, not the EEC's as a whole. The fact that coordination had not gone far enough was another factor opposing pooling. But to oppose it on these grounds was tantamount to saying that coordination would not be enough to save the Snake either. On the other hand an autonomous Fund would make coordination effective.

Essentially it was a problem of transferring powers from members to EEC bodies. It did not take place and it was to be seen if that would happen in the future. It required prior transfer of political power, which governments were not prepared to do. The trouble was that separate monetary authorities stayed in existence exercising fully their discretionary power. Decisions lacked the commitment to accept the consequences stemming from MI.

Acceptance of the WR meant acceptance of the whole process since transition to the second and third stage would be automatic. Arrangements were finally to be limited to a five year period since the beginning of the first stage, to be extended indefinitely depending on progress towards MI. It gave the right to countries to opt out in the absence of measures to check inflation differences or else they would make good other countrie's inflationary gaps. Failure to implement a system of credible money supply targets made this proviso necessary. The arrangements were more modest than Europeanists envisaged, and served national interests. Members' goals were convergent rather than identical, with the possibility of dispute and rupture as latent conflicts came to the surface. In the absence of a common front, members could find themselves engaging in time consuming and often frustrating negotiations, unable to reach conclusions. This could inhibit international

negotiations also.

The Snake was basically a means to an end. It was a disciplinary device. The MU would not be served by short-term stability followed by realignments indefinitely. Coordination had not proved effective. The past had shown that consultation after each crisis did not include coercion and its practical significance was rather unsatisfactory. The Commission was not at all times critical of members' attitudes. Enthusiasm used to wane, consultation to become a substitute for collective action while the lack of achievement became reinforcing. In the lack of unified policies, at least on key areas, economic differences could remain and aggravate, rendering the exchange rate structure unrealistic. This view was reinforced if one were to consider other discouraging signs: regional policy had not proved effective. Italy, Ireland and the UK were committed to EMU under the precondition that something would be done to ease their serious regional problems(26). The WR did not seem to have recognised adequately the EMU costs and did not suggest ways to overcome the difficulties. Various authors suggest that the fault of national regional policies has been their selectivity, see Magnifico (1973, pp 214-21), Dosser (1978). Instead they should be based on general non-selective measures to facilitate economic adjustment. Secondly, capital market integration was far from complete. Despite Articles 6, 7, 108, 109 of the Treaty, which set down the principle of abolition of restrictions on capital movements, the 1960-62 Directive, the Segré report (1966) and the fact that members were, by the early seventies, mid-way towards capital market integration, considerable exchange rate instability with massive capital flows led to new controls on a national basis. A unified capital market

was one of the MI objectives. The EEC should not only have a common exchange rate system but also a common system of control over capital flows. At that time it was difficult to combine arrangements to control capital flows between each member and the outside world, in the interest of XE of each member with free capital mobility among them. Studies, see Krause (1973, pp 114-41), described in detail the innumerable regulations in all members that restricted flows and prevented interest rate structures. Exchange rate freeze may not be enough to bring capital market integration. In Europe at that time, capital controls were not unified and were also applied to intra-EEC transactions, meaning disintegration and distortion of flows. Attempts to avoid their application to other members were not made. Further, it would be uneconomic to permit free flows between members, if flows between the outer world and each EEC part were subject to different incentives. Flexible exchange rates to permit a uniform degree of hardness or softness in the member currencies run against the exchange rate rigidity objective within the EEC or would make it difficult to be achieved. This difficulty could not be recovered by joint floating. Nor could it be removed, though it could be disguised, by the provision of XB finance to deficit members. The maintenance of exchange controls, although it could contribute to exchange rate fixity, could delay corrective action needed for genuine exchange rate fixity. They could also delay parity realignments with all the implications stemming from that. Finally, the IMS situation should not be ignored at that time. The IMS crisis and the EEC economic background could create tensions inside the Snake. In the absence of "calm weather conditions" in the IMS, they would be intensified.

All these would seem to cast doubt on the results expected from this venture. The prospects for the achievement of eventual EMU would fundamentally depend on members' willingness to accept the changes required. Whether that would happen in the place of many economic and political obstacles, only the future would tell. In the presence of discretion, even coordination could not make exchange rate evolution always predictable.

The coordination process entails serious difficulties and disadvantages which could lead to doubt as to whether irrevocably fixed exchange rates can be obtained in this way. Should one look for alternative strategies? The empirical evidence on the Snake and analysis on the alternatives, which follow below, will help us answer this question.

CHAPTER FIVE EMPIRICAL ANALYSIS OF THE SNAKE PERIOD

5.A.a. Preliminary Observations from the Snake Evolution

The Snake evolution is well documented in the Bank of England Quarterly Bulletins, see also chart 5.1 and appendix I. We refer here to some useful observations stemming from this evolution to be kept in mind when going deeper into the analysis.

Early sterling problems led to speculative flows and reserve losses. Sterling left the Snake, June, 26, 1972, demonstrating - like the Lira later - that national economic divergence intensified by unfavourable influence of international factors, makes a fixed exchange rate system untenable even when it is confined to a region. Absence of calm weather conditions, resulting in continual pressure, leads currencies to leave the Snake. Sterling set EMU its first test, which gave rather unsuccessful results. After sterling's independent floating and under dollar weakening, members felt that they had to protect the system from the dollar flood. Benelux supported a joint float against the dollar. France and Germany opposed it, insisting that lack of coordination would break it, destroying the CAP, and that it would require heavy support at least for certain currencies. They proposed instead exchange controls, keeping the arrangements, since the principal conditions for free capital flows - whose justification would be that they ensure the best possible distribution of financial resources in a fully functioning IMS and the observance to rules which apply to it - did not exist. The degree of capital market freedom would have to be weighted against the dangers that it may entail for monetary order in a country. Behind these arguments both members wanted to protect their industry, while France wanted to check also US investment inflows through a dearer capital franc. At that time there was little hope for

coordination while regional and industrial policies were inadequate. The UK constituted another problem. Sterling was a major EEC currency. Being more widely held it was liable to destabilising speculation. The UK had small trade and financial links with the EEC compared to the outside world. If all EEC currencies were floating against the dollar, that would be expensive for the UK in terms of non-EEC trade and cause sterling to be expensive to its partners.

At the beginning of December 1972, the Lira came under strong pressure requiring substantial support. The dual exchange market further unsettled the markets. The dollar crisis also continued. Markets were dominated by a confidence crisis in February and March. The Lira under persistent pressure left the Snake on February 13, 1973, depreciating significantly. The dollar flood continued despite the 10 percent dollar devaluation in February 12. Germany intervened heavily. Snake members imposed strong controls. The path towards EMU was not the one that had been envisaged. The tunnel was finally abandonned on March 19, under the pressure of heavy capital flows. The dollar crisis tested the Snake in the tunnel. Unlike the reaction in Spring 1971 where plans were shelved, this time there was a common response, in the form of a joint float. Members realised the fundamental change: the sound international reserve currency that BWS experience had shown to be needed to make sense of the fixed exchange rates, was not there. They learnt that after December 1971, their determination to preserve a given structure likely to bring XE was not sufficient to avoid heavy reserve losses on the dollars pouring in. The outcome had been that the Snake floated upwards whenever inflows had been, or threatened to become, large. The reserve currency country's initiative to change its exchange rate

magnified the risk of exchange losses. The upward float posed a threat on the competitiveness of each member with respect to third countries, but such a joint float was desired because of the high trade interdependence among the members. Exchange rate movements, identical in size and direction, would have similar effects for each member, although structural differences could lead to different results. The implication, however, was to diminish the chances for the UK to rejoin as long as its trade was mostly with third countries.

The joint float was safeguarded by a high number of exchange controls. The outcome of this crisis was crucial for the future of the IMS, marking the abandonment of dollar pegging by major countries. The dollar problem remained. Heavy upward DM pressure and intervention led to its revaluation on June 29, to preserve the Snake and safeguard German monetary policy. Changing its Snake position there was expected to be no further support and so inflows would subside. However, under these conditions, the Bundesbank was better placed to continue, and adopt further restrictive policies, putting pressure on its partners. The Snake stretch remained and support to hold it was increasing. Germany kept preserving its domestic objectives at a moment where the DM had been revalued twice in four months, making nonsense of exchange rate stability and the CAP. The consequence of this kind of floating was to undermine currency confidence in general. The sufficiency of revaluations was questioned, something that would not be raised under free floating. Germany with a surplus should be expanding to preserve the Snake. By keeping the DM inside, it was meeting cost-push inflation with liquidity squeeze. The DG was revalued on September 17, at a time of slight tension. This kind of attitude, combined with the two previous DM revaluations, created

an opposite private reaction to an important question. If the Snake exerts no discipline to currencies within it, why should it be kept? It seemed to be anything else but a symbol to MU. It was not necessary for the strong to inflate by importing speculative money from the weak, since they could simply change their central rates, cutting the inflow automatically. In this kind of Snake, both Sterling and the Lira could stay. Nevertheless, the Dutch decision - part of an anti-inflation package - came as a surprise. The fragility of the joint float was exposed as key currencies inside it came under pressure. It was redesigned three times in six months. It provoked speculation on other possible changes since strong DM pressure developed against the FrFr requiring heavy support to maintain it.

Despite the realignments there was still the hope that after the dollar trouble was over, coordination would take place. But the FrFr was in trouble since October 1973 due to trade problems and a weak anti-inflation package compared to that of Germany. There was growing support to avoid any damage in Snake's reputation that another realignment would bring. Finally, it left the Snake on January 19, 1974, in what French authorities described as a temporary six-month independent floating.

The diminishing oil shock in the first half of 1974, US political reasons, removal of US controls, XB problems and low interest rates brought back the dollar problem, DM upward pressure and revaluation expectations. Belgium asked for more interest rate harmonisation and inflow discouragement but without effect. In what was now a DM-zone, Germany was setting the pace. The scepticism on parity correctness was not irrational, comparing German inflation with that of major countries

and Snake partners. The Snake partners had to run harder to keep up with Germany. Its importance to them was greater than they were to Germany. DM devaluation confronted them with a dilemma. While it could stop speculation, it could also intensify domestic inflation by pushing up the prices of German goods imported by them. Also, experience had shown that even with DM revaluation there was no sign of turning down the J-curve working in an opposite way for Germany, where in 1974 it recorded high surpluses.

The FrFr advanced in 1975 assisted by domestic interest rate policy and rejoined in July '76, after eighteen instead of six months. France had serious unemployment problems at that time. Up to that time it can be said that radical IMS changes and numerous influences had imposed Snake strains while coordination was lacking among members. Frequent realignments permitted it to withstand the crises. The Snake came under a strong attack in February 1976 with a wide gap between the two key currencies. Such a Snake gave little hopes for further EMU progress. The Commission blamed national governments for lack of coordination. French, Germans and Dutch wanted to keep the Snake since a move away from it would be tantamount to dropping EMU aims altogether. If strong currencies were unable to stay together there was little hope for weak ones. Realignment should not mean Snake dismantling since that was the only sensible Snake at that time. But the danger was that this mood would set a precedent for using realignment as an alternative to domestic discipline. Although that was true, the worst case would be if parities were irrevocably fixed, making any movement towards MU unrealistic from the beginning.

Apart from the FrFr, other currencies - BFr, Dkr - required support too. Intensification of FrFr pressure forced authorities

Chart 5.1

The EEC Snake. April 1972 to December 1978.
Percentage Deviations from Catral US Dollar Rate,
End of Month, Last Working Day.

——— Deutsche Mark
— — — — Belgian Franc
+ — · + — Danish Krone
+ + + + + Sterling and Punt
. . . . . French Franc
+++++++++ Italian Lira
v v v v v v v v Norwegian Krone
******** Swedish Krone
— · — · — Dutch Guilder

%
45
40
35
30
25
20
15
10
5
0
-5
-10
-13

The United Kingdom and Denmark Join
Norway becomes Associated.
Denmark returns
US Dollar devaluation
Official Markets closed
Joint float, Germany revalues by 5%, Sweden becomes associated
Germany revalues by 5.5%
Holland revalues by 5%
Norway revalues by 5%
The French Franc leaves the Snake
Sterling leaves the Snake
The Danish Krone leaves the Snake but remains in Tunnel
The Lira leaves the Snake
The French Franc enters the Snake
The French Franc leaves the Snake
Denmark devalues by 6%, Belgium and Holland devalue by 2%, Norway and Sweden devalue by 3%
Sweden devalues by 6%, Denmark and Norway devalue by 3%
Denmark and Norway devalue by 5%
Norway devalues by 8%
Germany revalues by 4%, Belgium and Holland revalue by 2%
The Norwegian Krone leaves the Snake
The Swedish Krone leaves the Snake

TIME
1972
1973
1974
1975
1976
1977
1978

to leave the Snake. They blamed the sterling crisis. However, France rejoined in 1974 because it wanted to submit its economy to discipline. By March 1976 it had double the inflation rate of Germany. At the end only four members - 45 percent of EEC GNP - remained. Sterling and FrFr weakness led to heavy DM demand, Snake strains, sharp DM appreciation against the dollar and finally another Snake realignment on October 17. It took place after months of suspicion that the DM would burst the EEC exchange rate arrangement. While proving that realignment was still feasible and still keeping the Snake, it raised again the question if that was worthwhile. It facilitated trade among Snake members although it endangered German money supply and inflation due to support to preserve it. This Snake was the remains from the great EMU plans. Currencies that left it initially were in no position to return in view of their economic problems. Intervention at the end did nothing to conceal fundamental economic differences among countries. Talks on how the Snake could be used for further economic and monetary order failed due to Germany's refusal to reflate, sticking to its domestic objectives and other countries' refusal to what they considered to be inability to conform to the rules.

A surprise realignment took place on April 1, 1977, said to help Sweden's IB and XB problems. The most important observation was that it came after little expensive, protracted and futile intervention efforts to keep the weakest currencies, which were doomed to complete failure in the past. The Snake was transformed twice in six months. But Germany had suffered two destabilising inflows in 1976, bringing in DM17 b. In the past - 1973/74 - they had intervened heavily to preserve the Snake, hoping that such intervention would be reduced in the

future. After a calm year in 1975, even heavier intervention started with no signs of retreat. That was the turning point in the Snake history. 1976 was a particularly dramatic year with the plummetting of Sterling and Lira, FrFr trouble and realignments. The Germans realised that economic convergence - to prevent crises - was not going to come in the near future. There was no reason to embark on heavy intervention to protect exchange rates, with the hope that these would remain. At the end, parities would change, threatening Germany with inflationary pressures. From that point on, Germany became interested in short-term exchange rate stability followed by prompt parity changes, whenever capital flows started posing threats. The Snake stopped being the disciplinary device, forcing members who wanted to remain in it to coerce their economies to the German path by changing their internal policies. It was widely believed that EEC members were far away from MU, so far that a Snake according to its initial principles now was a premature decision and the new philosophy adopted was rather one of trying to establish the preconditions of an MU, not even its first stage. That was the way the Snake evolved after that period at a time when consistent monetary targets were lacking. The Snake came closer to the pseudo-exchange-rate union concept.

The dollar crisis has dominated foreign exchange markets since mid-1977. Substantial support measures did not stop it from falling sharply at the end of 1977. Action in early 1978 brought a brief recovery but with US economic problems remaining, new pressure developed from June and throughout the summer. This crisis, taking place in a background of diverging Snake economies, led to severe Snake tension for three and a half months - mid-July to October - leading to record inflows in

Germany - DM10 b - out of Snake intervention. While the Snake was at full stretch, Germany insisted on exchange rate fixity, trying to avoid endangering their exports to their Snake partners - 20 percent of their total exports - at a moment where Germany's competitiveness was falling in the rest of the world. At the end the realignment took place. The lesson to be learned from this realignment was not the ease with which it was carried out at the end but the wastefulness of months of heavy intervention preceding it. The US economic packages that followed on October 24 and November 1 took the markets by surprise, having immediate favourable dollar effects greatly assisted by intervention in the US and other countries. Anxieties about German, Swiss and Japanese economic problems contributed to the relatively small dollar weakness.

Developments among Snake currencies had as a backcloth the EMS negotiations. Norway left the Snake on December 12, 1978 at a time when there was no economic justification for doing so. Various factors accounted for it, stemming from the EMS agreement, see Thygesen (1979, pp 25-8), which, for Norway, would delay realignments leading to crises. They believed that there was lack of assurance that the Snake implies a high degree of effective exchange rate stability. Also the DM no longer seemed an insurance for less short-term exchange rate volatility or XB discipline. Finally domestic efforts to lower inflation and strengthen confidence in industry were considered more important than efforts through the DM, after the downward exchange rate adjustments which had started taking place since 1976.

The Snake found it possible to accept realignments largely due to the fact that it contained only one major currency. A steady devaluation of a little-traded Nordic currency could be easily managed. Not so, if four of the world's seven largest

economies were included in it, lagging market forces instead of anticipating them. Parity questions became complex, demonstrated by the circumstances which led France to leave the Snake after its second entry. Attempts to change intra-Snake parities with DM rising against the FrFr and the FrFr falling against the DM, failed because the whole thing became difficult to cope with. Institutional problems in getting parity changes were severe. A change in one currency involved changes in all others. When realignments become a matter of inter-government agreement the desire is to avoid them for political reasons if possible. The Snake developed a pattern where pressures had been building up through speculation and realignment followed.

By mid-1977 the EMU dream was forgotten, with lack of coordination of monetary and budgetary policy and the prospects of three new applicants. There was no common line on external policy either. The Commission also blamed the US for damaging world stability, boosting world inflation and encouraging oil price rises. Most EEC countries wanted to avoid any new action toward MU, fearing the possibility of ending with severe unemployment problems. Three out of four major EEC members were out of the Snake most of the time. Their domestic problems did not allow them to abandon the exchange rate instrument. From the point of all EEC members the Snake failed, since it did not keep them all, and especially the major ones, inside it. Intervention alone could not save it. It was increasing instead of being gradually reduced. Realignments were taking place and after 1976 it was officially recognised that the Snake was not, and under the circumstances could not be, what it was expected to be. It turned to be an adjustable peg, where realignments had to take place, given Germany's economic superiority, if further FEM disorder was to be avoided. The

fact that the last one was delayed by two months cost Germany its largest inflow.

Only one major currency was involved. The fact that smaller country currencies floated with it, does not change the above conclusion, given the reasons for which they prefer stable exchange rates with Germany. In fact all small countries had problems and significant economic divergences from Germany, especially since 1976. They could be kept inside it despite their problems, because they could obtain adequate XB finance, intervention funds and, given the low trade demand of some of these currencies, satisfactory disciplinary action was avoided although it was questionable if it would continue in the long-run, see chapter six.

It was explained in chapter four why the DM dominates smaller currencies. The fact that Germany did not normally negotiate with its partners or anybody else on its exchange rate policies with third currencies, meant that the DM floated independently like the other three major EEC currencies.

5.B.a. On the Direction and Size of Currency Movements

The resolution of the European Council on March 21, 1972, reduced the fluctuation margin between the EEC currencies to $\pm$2.25 percent. Therefore success of the EEC exchange rate arrangements would mean that EEC currency movements should be identical in direction and size, allowing for this fluctuation margin.

Table 5.1 provides for the deviations of EEC currencies from their central rates, with respect to April 1972, during the Snake period. The DM, DG, BFr, DKr and FrFr appreciated in general while Sterling and the Lira followed the opposite direction. Table 5.1 provides an indication of substantial exchange rate movements during that period. It is difficult

to distinguish a period of relative calm.

Table 5.1 EEC currency changes against the Central Rates, with respect to April 1972

Percentages, End of Year, Each currency against the Dollar

Year / Currency	1972	1973	1974	1975	1976	1977	1978
DM	-0.7	14.9	24.2	17.5	25.7	33.8	42.5
DG	-0.22	9.5	22.1	16.5	23.7	29.2	38.8
BFr	0.18	6.3	18.2	10.5	16.4	25.4	34.8
DKr	2.2	10.1	19.3	11.8	17.3	17.5	27.3
FrFr	-2.0	6.4	10.6	10.8	1.2	1.2	17.2
£	-12.1	-13.3	-12.0	-30.0	-56.4	-56.4	-28.9
Lira	0.2	-4.1	-11.2	-17.1	-49.8	-49.8	-41.0

Source: Constructed on the basis of IFS data.

Snake success would imply that fluctuations of a Snake currency against member currencies, should not exceed 4.5 percent. Table 5.2 provides such estimates with respect to the DM. They suggest that no such pattern was depicted.

Table 5.2 EEC currency changes against the DM, with respect to April 1972

Percentages, End of Year, DMs per unit of currency

Year / Currency	1972	1973	1974	1975	1976	1977	1978
DG	0.05	-3.1	-2.6	-1.2	-2.6	-6.3	-6.1
BFr	0.01	-9.1	-7.3	-7.9	-8.8	-11.2	-12.5
DKr	3.0	-5.4	-6.0	-6.5	-10.0	-19.7	-20.7
FrFr	-0.01	-9.0	-14.1	-7.3	-24.7	-29.1	-30.1
£	-13.6	-27.8	-34.9	-39.0	-53.8	-53.9	-55.3
Lira	-1.5	-31.3	-31.3	-28.9	-50.0	-55.3	-59.1

Source: Constructed on the basis of IFS data.

Substantial deviations occurred, some of them inside the Snake. Estimates include realignments. Some of them were substantial, see Appendix I. They were drawbacks to the Snake and implied

higher potential fluctuation. Further, these annual figures conceal even higher short-term deviations. For example, the fluctuation of the DG in 1973. It can also be seen that most of the BFr deviation was due to the 1973 DM revaluations. The opposite applies to the DKr whose deviation was enhanced after the mid-seventies, like that of the three major currencies.

One can see the considerable differences that existed among the EEC currencies during that period. When the Snake was created it was exactly this sort of divergence that it wanted to eliminate. The EEC currencies did not show a generalised pattern and did not move in line. The weakest EEC members have in fact moved more against the DM than against the dollar. At that period there was a lack of dollar confidence and the US economy had serious problems, in contrast to Germany. They were in many occasions similar to those of the weak EEC members although not of the same degree of intensity, at least with respect to the UK and Italy. Taking percentage changes for each year we can then compute the average and standard deviation for each currency against the DM, see Table 5.3.

Table 5.3 Average Currency Changes and Standard Deviations against the DM

Percentages, seven years, Twenty-six Quarters

Currency	Annual since 1971		Quarterly since 1972 II	
	Changes	Standard Deviation	Changes	Standard Deviation
DG	-1.36	1.93	-0.28	1.75
BFr	-2.11	3.52	-0.37	1.75
DKr	-4.71	5.23	-0.8	2.2
FrFr	-5.08	8.67	-1.13	3.4
£	-10.6	10.80	-3.16	4.7
Lira	-12.90	12.60	-3.1	6.27

Source: Constructed on the basis of IFS data.

These figures conceal even higher changes as it can be seen from table 5.4. The considerable size as well as the fluctuation of EEC currency movements become obvious if one is to concentrate on table 5.2, 5.3, 5.4. Rising currency values and/or large short-term currency fluctuation is bad for business, imposing real costs on international trade appearing either in the form of uncertainty traders face over the domestic value of future sales or in terms of insurance cover. Table 5.5, depicting the average changes and standard deviations of EEC currencies against the DM, for every year and quarter, points also in this direction.

With regard to our main question, the conclusion drawn is that major EEC currencies did not move together. They could be regarded as separate currencies by market operators and investible fund holders. This is not what happens with small EEC currencies which move more together in the DM path, the DG being the closest currency to move with it. Theoretically, exchange rate stability could be assured if central banks were willing to intervene in FEMs in the amounts offered to them. This was the basis of the BWS which finally collapsed because of unwillingness or inability of virtually unlimited central bank intervention. Dealing with capital movements is the key to achieve success in stable exchange rates. The bigger the movements the greater the problem and vice versa. Capital flows from one currency to the other tend to be smaller the greater the extent by which currencies are linked economically. The DM, the DG, then the BFr - and to a much lesser extent the DKr - usually move together against the dollar. Evidence shows that investors regard investment in DM and DG as investing in one as good an alternative as in investing in the other. Not so with the major currencies. Any attempt to link them

Table 5.4 Range of Annual and Quarterly Currency Changes against the DM

Currency / %	Annual				Quarterly			
	0.0-4.5	4.5-9.0	9.0-18.0	18.0-	0.0-2.25	2.25-4.5	4.5-9.0	9.0-
DG	7	-	-	-	23	3	-	-
BFr	6	1	-	-	24	1	1	-
DKr	5	1	1	-	21	3	2	-
FrFr	3	3	0	1	13	6	7	-
£	1	2	3	1	9	4	10	3
Lira	2	1	2	2	8	6	6	6

Source: Constructed on the basis of IFS data

Table 5.5 Average Changes and Standard Deviations of EEC currencies against the DM Percent

Year	1972		1973				1974				1975			
AAC	-1.96		-12.4				-5.84				-0.38			
SD	4.43		7.53				8.35				4.66			
QAC	-0.2	-0.6	-4.2	-8.1	-1.0	1.9	-4.3	0.8	2.3	-4.06	1.12	0.7	-1.5	-0.8
SD	2.9	1.6	4.7	3.9	4.3	3.03	3.2	2.3	1.17	3.4	1.14	4.5	2.8	1.11

	1976				1977				1978			
AAC	-15.4				-5.98				-3.85			
SD	17.04				5.02				3.95			
QAC	-6.8	-2.4	-3.2	-1.8	-0.6	-2.0	-1.1	-3.1	-1.2	1.2	-1.5	-2.2
SD	8.0	3.0	5.0	2.4	1.2	1.4	1.2	2.7	2.9	2.1	1.2	2.7

AAC = Annual Average Change, QAC = Quarterly Average Change

Source: Constructed on the basis of IFS data

Table 5.4 Range of Annual and Quarterly Currency Changes against the DM

Currency / %	Annual				Quarterly			
	0.0-4.5	4.5-9.0	9.0-18.0	18.0-	0.0-2.25	2.25-4.5	4.5-9.0	9.0-
DG	7	-	-	-	23	3	-	-
BFr	6	1	-	-	24	1	1	-
DKr	5	1	1	-	21	3	2	-
FrFr	3	3	0	1	13	6	7	-
£	1	2	3	1	9	4	10	3
Lira	2	1	2	2	8	6	6	6

Source: Constructed on the basis of IFS data

Table 5.5 Average Changes and Standard Deviations of EEC currencies against the DM Percent

Year	1972		1973				1974				1975			
AAC	-1.96		-12.4				-5.84				-0.38			
SD	4.43		7.53				8.35				4.66			
QAC	-0.2	-0.6	-4.2	-8.1	-1.0	1.9	-4.3	0.8	2.3	-4.06	1.12	0.7	-1.5	-0.8
SD	2.9	1.6	4.7	3.9	4.3	3.03	3.2	2.3	1.17	3.4	1.14	4.5	2.8	1.11

	1976				1977				1978			
AAC	-15.4				-5.98				-3.85			
SD	17.04				5.02				3.95			
QAC	-6.8	-2.4	-3.2	-1.8	-0.6	-2.0	-1.1	-3.1	-1.2	1.2	-1.5	-2.2
SD	8.0	3.0	5.0	2.4	1.2	1.4	1.2	2.7	2.9	2.1	1.2	2.7

AAC = Annual Average Change, QAC = Quarterly Average Change

Source: Constructed on the basis of IFS data

together may be expensive in terms of necessary central bank intervention. It could also in the end be ineffective, and realignments would be inevitable given the economic realities. These economies do not move together, which in turn does not result in the same degree of confidence for each currency, unless there are different reasons.

5.C. Economic Coordination

The determinants of exchange rates were analysed in chapter three. An exchange rate structure is expected to change in response to the dispersion of these factors, which in the case of short-run determination, are too numerous to permit a single explanation of this variability. The assets market equilibrium would suggest that periods of rapidly shifting interest rate differentials, sudden imposition or relaxation of exchange controls and changes in exchange rate expectations are apt to be periods of large short-term exchange rate fluctuations, even when prices move slowly. The influence of changes in exchange rate expectations requires a special note because of many factors influencing them and because the factors themselves are subject to frequent change, especially in a high inflation environment and irregular economic growth. While these factors are not directly observable, it is known that they include, inter alia, monetary and fiscal policies, relative cyclical positions, current and trade account balances inflation differentials, relative competitive positions, political uncertainties, FEM intervention and the change in the exchange rate itself. Changes in expectations are particularly important because exchange rates may already reflect all publicly available information. Hence, it is only new and unexpected information that will cause market participants to change their evaluation of the future exchange rate and thus

the present exchange rate as well.

Other factors could also be important affecting exchange rate dynamics.

5.C.a. Long-Run Determinants

Table 5.6 indicates the evolution of inflation rates for the EEC as a whole, Snake members and each EEC country. The average inflation rate for the nine in the seventies may be compared with that of the periods 1961-64 and 1965-69 when it was 3 percent and 4 percent respectively. Of greater relevance for the Snake operation were the substantial inflation differentials among the members, especially after 1973. The EEC exchange rate pattern could not be robust to this sort of dispersion. Substantial exchange rate adjustment required under these economic realities was unlikely to be smooth, timely or easily accepted, enhancing instability. On the other hand a movement towards exchange rate fixity could require substantial adjustment for certain countries. For the EEC countries as a whole it was the final two-year period that gave some hopes for the reduction of the inflation rate differentials. Looking at table 5.6 and the earlier exchange rate tables, it could be suggested that experience since 1973 seems to indicate that high inflation rate periods, which are also likely to be periods of high inflation differentials, carry a greater probability of large changes in the exchange rate structure.

Members did not follow a common trend on the evolution of their XBs as can be seen from table 5.7. Looking at the EEC as a whole these differences were significant. That did not seem to be the case for the Snake members although differences developed since 1974. Current account developments indicate substantial differences among EEC members. Countries

Table 5.6 National Inflation Rates, Average Rates and Standard Deviation of National Rates around this Average

Percent

Country / Year	G	L	It	B	F	N	UK	Ir	D	EEC Countries		Snake Countries	
										Average	SD	Average	SD
1971	5.3	4.7	4.8	4.3[x]	5.5	7.5	9.4[+]	8.9	5.8	6.24	1.89	5.52	1.24
1972	5.7	4.8[x]	5.7	5.7	6.6	7.4	6.4	8.3[+]	6.6	6.35	1.04	6.04	0.99
1973	5.2[x]	6.4	10.8	6.3	7.1	8.6	9.4	11.7[+]	8.8	8.25	2.17	7.06	1.57
1974	6.7[x]	9.4	18.7	12.7	13.3	9.5	16.4	16.7[+]	16.3	13.3	4.07	10.9	3.68
1975	6.3[x]	10.9	17.1	11.3	11.8	10.1	23.5[+]	20.8	9.9	13.5	5.67	9.7	1.98
1976	4.4[x]	9.9	20.5[+]	8.7	9.9	8.5	16.8	18.3	9.0	11.7	5.4	8.1	2.13
1977	3.5[x]	6.4	15.1	7.4	9.6	6.7	15.8[+]	13.6	11.2	9.92	4.28	7.04	2.76
1978	2.8[x]	3.1	12.5[+]	4.5	9.3	4.1	8.3	7.6	10.0	6.9	3.43	4.9	2.93

x indicates lowest figure, + indicates highest figure

Source: IFS (CPI)

Table 5.7 Balance of Payments of the EEC Countries Million Dollars

Year / Country	1971	1972	1973	1974	1975	1976	1977	1978
BLEU	846.0	1142.0	1153.0	911.0	705.0	-296.0	-373.0	-567.0
	295.0	344.0	914.0	367.0	533.0	-602.0	-280.0	-433.0
DK	-423.0	-63.0	-464.0	-981.0	-491.0	-1909.0	-1647.0	-1476.0
	179.0	91.0	446.0	-438.0	-40.0	-60.0	798.0	1532.0
F	530.0	297.0	-691.0	-5942.0	-3.0	-6048.0	-3301.0	3794.0
	3290.0	1639.0	-1893.0	-353.0	3503.0	-2755.0	169.0	3053.0
G	875.0	747.0	4371.0	9804.0	4059.0	3902.0	3799.0	8930.0
	4620.0	4946.0	9277.0	-640.0	-820.0	3406.0	4729.0	9813.0
Ir	-190.0	-135.0	-234.0	-671.0	-24.0	-262.0	-287.0	-300.0
	209.0	87.0	1.0	146.0	271.0	320.0	620.0	99.0
It	2040.0	2289.0	-2234.0	-8039.0	-556.0	-2855.0	2285.0	6286.0
	1419.0	-38.0	80.0	-4612.0	-2652.0	-317.0	5740.0	5426.0
N	-182.0	1302.0	2214.0	1960.0	2001.0	2691.0	245.0	-1430.0
	140.0	843.0	723.0	183.0	317.0	329.9	301.0	-766.0
UK	2686.0	413.0	-2298.0	-8254.0	-3932.0	-1833.0	644.0	845.0
	6145.0	-3709.0	352.0	-2862.0	-120.0	-898.0	4132.0	-3855.0

First line indicates current account. Second line indicates official settlements balance plus errors and ommissions.

Source: IFS

in deficit were those that recorded the highest inflation rates and, as it will be seen, money supply growth. Small Snake countries were not without problems especially since 1975 as far as Belgium and the Netherlands are concerned. Denmark had chronic deficits and the weakest Snake currency. They wanted to avoid depreciation. Further, they did not undertake adequate economic adjustment, although it would be inevitable in the long run.

Compatibility of national monetary aggregates is important to achieve similar inflation and XB positions. Table 5.8 provides such information.

An important point on money supply evolution should be made: the absolute money supply level as well as the standard deviation do not have the same meaning as such estimates have on the inflation variable. It was explained in chapter three why it may be that one member would need to have a high money supply target compared with that of another, to obtain inflation similarity. There has to be then a certain degree of dispersion between the national money supply levels. Despite that, one cannot ignore the fact that an inspection of inflation, money supply and real GDP - Table 5.9 - growth rates shows a tendency for the fastest money supply rates to inflate fastest. Money supply of certain members should have to be set at lower levels and hence the desired dispersion should be smaller. Further, members did not fulfil the arrangement for the 1973 M2 rise. Since 1973, in their attempt to fight inflation they established monetary aggregate targets - Germany, Italy in 1974, France, UK in 1976, the Netherlands in 1977. There is no common aggregate used, while BLEU and Denmark concentrate on DCE. They envisaged targets as a means to reduce inflationary expectations and avoid policy delays. Targets have for some

Table 5.8 National Money Supply Rates, Average Rates and Standard Deviation of National Rates around the Average

Percent

									EEC Countries		Snake Countries	
Country / Year	G	F	BLEU	N	UK	It	Ir	D	Average	SD	Average	SD
1971	12.3	13.8	10.6	16.7	13.6	21.8	7.6	7.4	13.0	4.76	11.8	3.87
	15.1	19.7	12.7	14.8	13.7	18.1	9.4	8.2	14.0	3.92	12.7	3.18
1972	14.6	13.9	12.3	18.9	16.5	20.0	9.7	15.8	15.2	3.36	15.4	2.75
	15.6	20.2	15.0	15.0	29.9	19.3	9.4	14.7	17.4	6.02	15.1	0.37
1973	4.3	9.8	12.7	6.2	7.0	19.3	19.8	3.2	10.3	6.45	6.6	4.25
	12.6	15.2	16.0	18.9	25.5	25.4	23.4	8.1	18.1	6.32	13.9	4.6
1974	6.5	12.8	8.6	4.0	5.5	14.1	5.4	3.5	7.6	3.97	5.7	2.36
	8.1	16.9	8.8	12.6	12.6	19.9	18.2	7.7	13.1	4.78	9.3	2.25
1975	14.1	10.5	3.3	18.5	2.1	10.1	16.5	18.1	11.6	6.36	13.5	7.08
	13.7	15.2	7.8	12.4	7.9	21.8	20.4	21.3	15.1	5.68	13.8	5.6
1976	8.9	13.6	6.9	10.9	15.5	20.7	18.7	16.9	14.1	4.83	10.9	4.3
	10.2	13.5	19.6	19.1	11.2	18.4	13.7	16.9	15.3	3.66	16.5	4.3
1977	8.5	8.5	8.2	14.5	14.2	20.0	18.5	7.4	12.5	5.0	9.7	3.26
	9.2	13.0	8.3	12.7	9.6	21.5	19.1	9.0	12.8	4.97	9.8	1.97
1978	14.2	8.9	8.0	5.8	19.5	24.0	25.0	10.4	14.8	7.48	9.6	3.4
	10.2	11.5	8.7	12.2	15.0	18.5	22.4	4.0	12.8	5.76	8.8	3.49

First line indicates M1. Second line indicates M2 (M3 for the UK)
Source: Constructed on the basis of IFS data.

members contributed positively in fighting inflation. In the UK inflation decelerated significantly in 1977/78. For Germany it was kept at very low levels although DM appreciation contributed to that. The same comments cannot be said for Italy. However, inflationary expectations were not adequately reduced. Such policy has not been followed consistently, at least for certain EEC members, see Richardson (1979). That was the result of frequent policy adjustments. The practiced "fine tuning" was unsuccessful. Some members felt free to diverge considerably from the pre-announced targets. The average deviation of the actual from the target rate was largest in Italy - 4 percent - then in the UK - 2.4 percent - while in Germany it was 1.2 percent. As a result, the inflationary climate on certain members became chronic. Persistent inflation expectations remain the root of the problem. Together with the unpredictability of demand management policies in the face of conflicting aims, it increased uncertainty and undermined business confidence. Certain governments even at the end of 1978 still had the task of restoring confidence in the framework of the system. One can also see the lack of any community action in undertaking the necessary studies for compatible monetary aggregate policies. The EEC set such

Table 5.9 GDP Growth Rates Percent

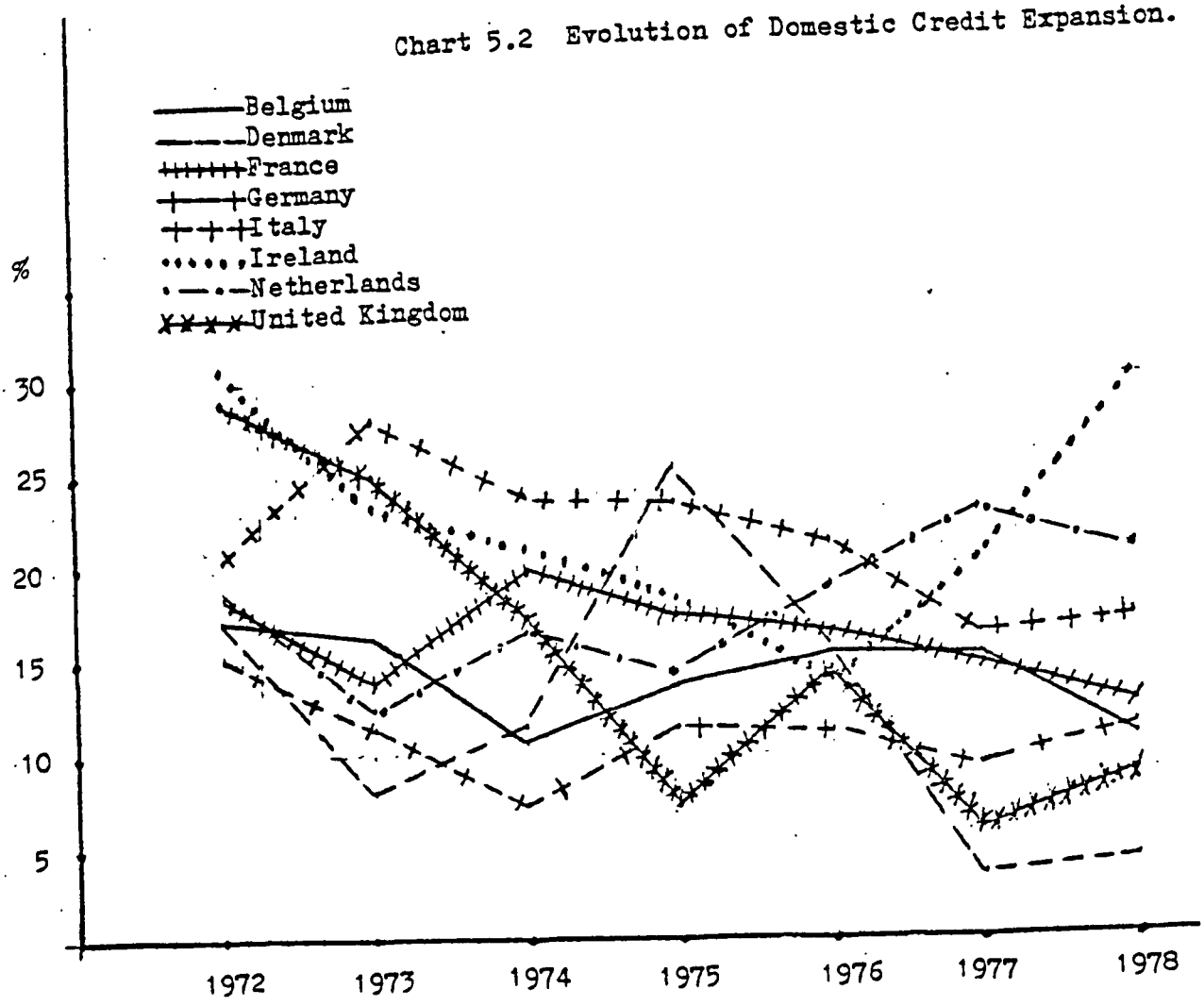
Country / Year	B	D	F	G	Ir	It	N	UK	EEC Av
1973	5.4	4.2	6.0	5.3	7.2	6.3	4.2	5.4	4.6
1974	3.75	2.0	4.5	0.4	1.5	3.4	3.5	0.3	2.4
1975	-1.4	-1.0	-2.5	-3.4	-2.0	-3.7	-2.5	-1.8	-2.3
1976	3.5	5.5	5.0	5.6	3.7	5.4	3.5	3.4	4.5
1977	2.0	1.7	3.1	2.4	6.0	1.7	2.5	1.4	2.6
1978	2.0	1.3	3.2	3.4	6.7	2.0	2.3	3.3	3.0

Source: OECD

targets for the first time in 1977 - 9-10 percent for Germany, 11-12 for Denmark, 12.5 for France, 16 for Ireland, 12 for the UK, 18-19 for Italy, 11 for the Netherlands and 15 for Belgium - at a moment where inflation was undermining recovery and threatening EEC cohesion. This agreement was not honoured by France, Italy, Ireland and the Netherlands. Even if it was fully honoured though, one would doubt its effectiveness given the lack of analytical work to specify the right targets. The task was difficult if one was to realise that even at the end of the seventies there was no automatic mechanism to prevent members from violating the coordination agreement. Members should, on the other hand, be willing to conform to Community policies since by opting out they adopt a self-defeating process ending up with more inflation and other undesirable repercussions.

It was analysed in chapter four why members should have to concentrate on DCE control. They would have to secure the domestic components of their money stocks with a smooth secular growth path. Looking at Chart 5.2 one could say that such a smooth path is not the general picture. The situation was worse before 1975. Countries then tried to achieve a steadier path and some of them lower growth rates. A more uniform pattern was established in 1976 although since then the situation was less satisfactory for Ireland and the Netherlands. The latter though, followed a deliberate policy of excess liquidity to prevent capital inflows from emerging which were difficult to stop once they gathered momentum, due to exchange rate adjustment expectations. The UK and Denmark followed a very variable pattern. Countries like Denmark and Belgium paid attention to this aggregate rather than to any other definition of money stock. Unless these countries impose tough

Chart 5.2 Evolution of Domestic Credit Expansion.



controls they cannot make the growth rate of their monetary aggregate differ much from the average in Germany, having to maintain fixed intervention limits with the DM. Denmark was less successful, experiencing a dramatic DCE increase in 1975 and tried to reduce it afterwards and bring it to the pre 1975 path. Germany experienced the smoothest path although, like other individually floating countries, it focused on both DCE and foreign assets. The fact that it intervened more in 1978 and that it would continue in the future, given that two more major members participate in the EMS, would mean that, as in 1978, the monetary target could not be preserved. More attention could then be paid to domestic money sources. The same could apply for France and Italy, although the latter would rather be somewhere in the middle because of its greater

exchange rate flexibility in the EMS.

Turning now to fiscal policies, the economic recession since 1973 was important in their evolution. Rising costs since that time reduced the share of industrial profits making investment financing more difficult. Productive capacity was not increasing as fast as the labour force, which largely explains the upsurge in unemployment in most industrial countries. Under these circumstances expansionary demand management was undertaken by the governments to prevent employment from falling. Deficit spending was practiced and caused the public sector's expenditure to swell in some countries to about 50 percent of the GDP. Budget deficits were growing for almost all members. Their size in some cases exceeded the equivalent of 10 and sometimes 15 percent and made it difficult to finance them without recourse to the central bank, that is, printing money, despite the use of instruments by the governments to finance them through other means. They contributed to excessive money supply growth. Deficit spending became increasingly inflationary - see p 145 - affecting monetary variables, prices, and less real ones like production investment and unemployment. Current expenditure and especially social transfer payments became the component of public expenditure that grew fastest, implying long-run inflationary pressures since it was increasing the shares of consumption at the expense of the shares of investment.

The ratio of PSD to the GNP was for some members two to three times larger than the EEC average. The situation deteriorated dramatically in 1975 and the Council of Ministers - 10th EEC General Report, point 200 - asked that fiscal policy should be directed towards stabilising the economy, reducing pressure on prices and improve, where necessary, the XB, while the

medium term target was to return to the balanced budget. Indeed, there was a convergence except for the small Snake countries. The fact that they were Snake members, able to obtain easily XB finance, intervention funds and expand through budget measures is perhaps no coincidence. Budget deficits were reduced in 1977 in Germany and the Netherlands. Also a dramatic amelioration took place in the UK following the collapse of the exchange rate in 1976 and the government's adoption of monetary targets and tight fiscal policy. However they rose - in certain cases considerably-for other members. In 1977 the Commission, in view of rising unemployment, recommended a temporary relaxation from the medium term target since a rise in growth was wanted. That policy continued in 1978, reinforced by the "concerted action" program adopted by the European Council in Copenhagen, April, 13-14, 1978. Public expenditure contributed to growth although the EEC was still, at the end of 1978, at a transitory stage with respect to its economic situation. However, such policy resulted in substantial PSD increases in Italy and Ireland creating inflationary pressures. It was recommended to them to reduce their PSDs while the opposite was recommended for Germany and the Netherlands. The UK government responded to the reduction in inflation by pursuing an expansionist policy - PSBR rose from £4 b to £9.3 b - affecting money supply and inflation increasingly, see Rose (1979).

Generally the budget was used under the recession experienced since 1974. The movement towards a balanced budget was not fulfilled. Authorities used the budget to step up demand, improve economic outlook and performance at moments where they also had to fight inflation and restore stability.

While there was a movement towards more compatibility - looking at inflation rates and XBs - the necessity of moving

towards more permanent restoration of this kind still remained. Money supply figures at the end of the period did not allow for much optimism. What was experienced during most of the period was a continuous appreciation of surplus members - notably Germany and its Snake partners - and a continuous depreciation of the deficit ones. Certain members considered the exchange rate instrument as being useful in affecting competitiveness and growth. It will be seen in chapter six why domestic adjustment is needed too, to avoid undesirable feed-backs and maintenance of imbalances. Opposite policies were followed. Germany produced highly restrictive policies only to enhance the deflationary effects of depreciations and keep and increase its surplus. Italy in contrast produced highly expansive policies. National authorities would have to adopt proper domestic policies from the EEC exchange rate stability point. Germany declined on many occasions to expand - although given the deflationary effects of depreciation, it seems that it could expand within the limits of inflation control. Because of stagflation, it wanted to avoid augmenting its PSD. Further appreciation though was threatening to hamper growth and maintain upward exchange rate pressure. UK, Italy and France tried to avoid deflationary measures which would raise unemployment. Since 1977 wider exchange rate fluctuations and forced deflationary policies on some of them enhanced exchange rate "real effects" and contributed to XB correction. Such movement, it was demonstrated, could not last long when appropriate domestic policies were lacking. Within a group of countries aiming at exchange rate fixity, the need for correct and compatible policies is even stronger if exchange rate pressure among them is to be avoided.

5.C.b. Short-Run Determinants

Evidence suggests that frequent and severe exchange rate fluctuations are likely to produce substantial and prolonged deviations from the PPP level. Exchange rates have on frequent occasions been abrupt, significant and reversible. Disorderly markets occurred, where there was no purchases or sales counterpart or when exchange rates showed pronounced erratic fluctuations(1), in a background of unstable economic and financial conditions.

Herring and Marston (1977, pp 227-62) provide an analysis of the domestic and foreign factors affecting a country's interest rates, given the openness of the economy. Their study on European interest rate determination suggests that domestic factors have retained importance. The Eurodollar rate is not the sole determinant of national interest rates. In deciding a particular interest rate policy authorities are often faced with a dilemma, ending up with a compromise acceptable in the face of conflicting internal and external requirements. It should be emphasised though that in a world of fixed exchange rates and highly mobile capital, theory suggests that interest rates in different countries will be highly interrelated. Moreover, interest rate behaviour of smaller countries will tend to be directed by the interest rate behaviour in larger ones. The strength of these relationships among interest rates depends on the degree of international, in our case intra-EEC, capital mobility.

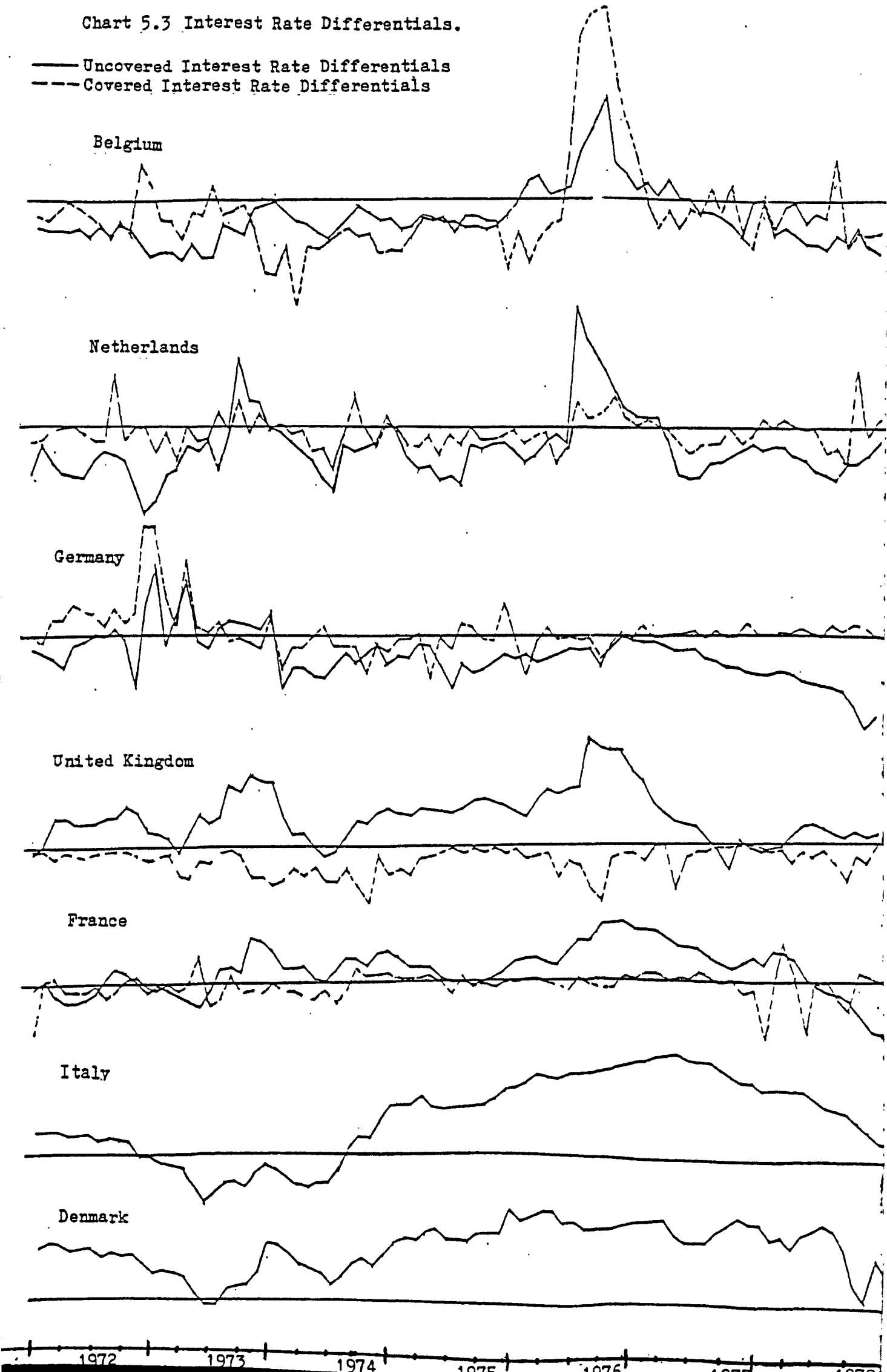
There is a negative relationship between interest rate differentials and the exchange rate, see Bilson (1979b, pp 214-5). What seems important for the EEC members is how much their interest rates deviated from each other. The lesser the deviation the greater the intra-EEC exchange rate stability,

Interest rate differentials of each member with the rest of them would be required. In our analysis we concentrate on uncovered and covered IRDs between the domestic interest rate of each member with the common Eurodollar rate, since that could give us an approximation of the IRD among EEC members(2). Further, as experience shows, the bulk of funds enters or leaves the Eurodollar market. Money call rates are used - inter-bank rates for the UK. There was lack of data on short-term rates for Italy which has not a short-term money market comparable to that of Germany or the Netherlands. Italian long-term rates are usually employed in international interest rate comparisons, see Herring and Marston (1977, p 241). Long-term government bond rates are used here. Also the interest rate on government bonds is usually used for Denmark. For both countries there was lack of data on forward exchange rates.

Chart 5.3 indicates that IRDs did not evolve in a similar way for the EEC members as a whole. There is a similarity in the trend between the UK and France up to the end of 1977 although interest movements are more pronounced in the UK. Italy seems to be closer to France and the UK after 1974 II. Further, there is a difference between these three countries and Germany which most of the time experienced negative uncovered IRD. The Netherlands and Belgium depict a close pattern between themselves. They both seem to have, for most of the period, a close pattern with Germany except between 1973 II to 1974 I and the dramatic period of the second half of 1976. In fact all members, except Germany, experienced more or less the same pattern during the second half of 1976. From chart 5.3 one can see how markets considered currencies throughout the period. Further these findings conform with gradual exchange rate evolution. Periods of rapidly shifting

Chart 5.3 Interest Rate Differentials.

——— Uncovered Interest Rate Differentials
– – – Covered Interest Rate Differentials



IRDs were associated with significant short-run exchange rate changes. For Germany, sharp IRDs in 1975 III and in 1978 were associated with abrupt exchange rate movements. Such an association is not observed in the three quarters of 1973. However, a month to month analysis indicates that the exchange rate rose by 12 percent in February 1973, where there was a sharp reduction in IRD. It remained at the same level for the next two months while the IRD rose sharply. A reversal of this trend in IRD for the next two months was associated with a significant rise in the DM. It should be kept in mind that it was a period of considerable dollar and sterling weakness. The DM remained strong at a moment where it was considered the only alternative. With respect to the Benelux, the Netherlands case in 1973 and that of both countries in 1976, do not seem to be associated with a close relationship in the exchange rates. The diagram shows why the 1973 Dutch revaluation took the markets by surprise, Sep 17, 1973. With respect to 1976, significant positive IRDs were associated with a small - 2 percent - devaluation while the Snake was climbing. Given the policy of these members, they kept the actual exchange rate away from the equilibrium. The UK was pursuing the same policy in 1977, contributing to the persistence of difference between the two rates.

In the assets market equilibrium approach, the interest parity condition, the primary link between world financial markets, summarises also the importance of expectations about future exchange rate values in determining the exchange rate. It was concluded in chapter three that in order to avoid frequent changes in expectations, predictability and stability of policy variables becomes a crucial factor for the predictability and stability of exchange rates.

However, during the period under review these factors were, for certain members, subject to frequent change within the environment of high inflation, considerable inflation and XB differentials and irregular growth. Despite accepting monetary targets, actual divergence from them was considerable for some members. Authorities continued their "fine tuning" policy. It has been admitted that in central bank policy, discretionary policies dominated regular response patterns. These policy changes were unsettling - disturbing in themselves - and there had been reaction against them in the form of substantial changes in both exchange rate expectations and the exchange risk that took place, see Richardson (1979, pp 50-4). Further, there was lack of consistency between monetary and fiscal policies. The rising PSD made, on many occasions, a major contribution to excessive money supply growth, see Bain (1975, pp 75-6), Magnifico (1978, p 68) and the Chancellor's speech (1980)[(3)]. Not only were these policies incompatible, but also they were subject to frequent change. That resulted in failure to predict future policies and made forecasting a futile exercise. Market operators had to change expectations all the time. Exchange rate overshooting, it is suggested by de Grauwe and Peeters (1978, p.22), is to be explained more than anything else by the governments' frequent and unsmooth changes in their fiscal and monetary policies. Lack of orderly economic and financial conditions put emphasis on the need of the policy decision making to become more stable and predictable. Unpredictability on demand management in the face of conflicting aims raised market uncertainty. It rose further as governments were frequently forced to raise the exchange rate targets that they would have to support. Continuous intervention became either too costly or created serious risks

on money supply control. In the end, officials were forced to revise their exchange rate targets. Such changes generated ever further changes as investors tried to assess the extent of official policy change. Uncertainty contributed to exchange rate variability. Also the fact that it reduced the amount of speculation created exchange rate variability, see Bilson (1978a, p 71), Schadler (1977, p 291). External factors contributed to that. The Sterling case in 1977 could serve as an example, where the increase in reserves led to the danger of money supply rises followed by a depreciation. Exchange rate targets were finally revised. On the Snake, many upward movements took place to avoid money supply effects resulting from substantial intervention, especially for Germany. Erratic US monetary and fiscal policies led to continuous revising of expectations and contributed to exchange rate variability and overshooting among the EEC currencies, see Yperselle (1979, p 136). Given that reversible flows into and out of Europe were more marked for the case of some European countries than others, sharp movements in major third currencies, apart from widening the difference between Snake and non-Snake EEC currencies, created tension inside the Snake bloc. Coping with capital flows, under the joint float, required large intervention on certain occasions to maintain the agreed limits, while realignments took place. Rules on how to deal with these external problems were needed and there was little improvement on that during the Snake period. These were important because it was difficult to stop an inflow resulting from dollar instability and since European capital markets operated as independent units and there was no way in which capital inflows could be effectively choked off in the interest of currency stability in Europe.

With respect to official FEM intervention, no uniform agreement exists on what has been achieved. Opposing views exist on the degree of sterilization undertaken by each Snake member[4]. Our own findings - see pp 162-81 - indicate that certain members had the ability to carry such operations and some of them implemented them. It is also suggested that at least in crisis periods members operated in a stabilising way and that the Snake survival even in its transformed form is due to such policies. Sections 5.C.c., 5.C.d. and 5.C.e. analyse the important question of intervention and sterilization.

Irrational speculation - speculation not based upon rational forecast - seems to have affected short-run exchange rate dynamics. Bilson (1978a, pp 69-71) provides evidence on the effect of destabilising speculation for the exchange rate between sterling and the DM for the 1975/76 period. Schandler (1977, p 291) maintains that at least over particular periods for certain currencies, destabilising speculation has contributed to exchange rate variations.

Overshooting therefore has been created as a result of a variety of factors. Apart from the asset market equilibrium model one has to add the effects of risk and general uncertainty and destabilising speculation affecting some EEC members more than others and at different directions. To that one has to add the effects of real shocks both external and internal ranging from supply and price crises of goods and raw materials to recession and political uncertainty within the EEC states and abroad, see Balassa (1976, pp 298-9), Scharrer (1979), Lamfalussi (1977). External shocks, experience indicates, had different effects on each individual member due to different dependence on goods affected by crises, different national economic structure, different national political decision

making process, policy response and reactions of various economic agents. The XB effect of the oil crisis for example varied from one member to the other depending on their reliance on imported oil, policy reaction to this shock in the form of price adjustment and varying conservation measures.

5.C.c. Intervention and Sterilization

Intervention was intended to take place only at the margins. Intervention within the limits needed prior authorisation by central banks whose currencies are bought or sold. Adverse effects should be avoided. Success on exchange rate fixity would depend on undertaking EEC currency intervention. However besides that, dollar intervention was increasing in importance, primarily intended to ensure orderly conditions in the dollar market and smooth any unduly pronounced movements at market rates vis-a-vis the dollar over longer periods.

In practice intra-marginal intervention has been frequent. Participants preferred dollar intervention and keeping away from mandatory intervention obligations at the Snake margins. They used this more flexible procedure to prevent a currency from being driven rapidly at the margin, where it may find it difficult to remain there. The Bundesbank (1976, p 28) in its monthly report, characterised it as an efficient and useful mechanism and that concentration ensured highly coordinated intervention. However, in the course of their intervention central banks used repeatedly large amounts. Further, virtually all intervention by central banks came to take place in dollars. France, from 1974 to 1976, demonstrated that the maintenance of Snake margins was closely related to the problem of dollar fluctuations. Under dollar intervention by either one or two central banks but in unequal amounts, the cross rate intervenes as a constraint. If say, the dollar goes down less in Paris

than in Frankfurt, the Banque de France sell dollars and the Bundesbank buy them in order to bring the dollar down especially vis-a-vis the FrFr, so as to obtain a rise in the latter against the DM and remain within the 2.25 percent band. If the Bundesbank wished to stop DM from rising against say DG it intervened in dollars. So did other members when they wanted to increase the value of their currency against, say, the DM. Such a system inevitably put pressure on the Snake relationship because it had a double disadvantage appearing in both directions: firstly intervention in dollars has several times influenced the US currency, and, secondly the difference in behaviour of one of the currencies vis-a-vis the dollar created important tension within the Snake, that originated outside the Community(5).

The question is if these effects would be avoided under EEC currency intervention. It all depends on the scale of portfolio adjustments linked to the fate of the dollar. If it kept being strongly attacked and very large portfolio readjustments were desired, it would not be sure if the Snake arrangements could be maintained. Under the existing economic environment, the fear was that one particular currency would be the refuge and would be subject to more pressure than others. Joint floating would be interrupted by realignments.

At this stage, interesting simulation results should be mentioned with respect to the differences of dollar and EEC currency intervention, see de Grauwe and Van den Bergh (1979), (1980a), (1980b). Under dollar intervention, the effect of German credit expansion on other members is substantially higher than in the case of DM intervention. In the absence of sterilization the purchase of DMs by other members reduces money supply in Germany, diminishing the expansionary effects

exerted by German credit expansion. This is not so under dollar intervention, where dollars purchased by other members have no monetary repercussions in Germany. Further, the size of intervention is substantially larger under dollar intervention due to the asymmetry of this system. It is less effective from the point of other members compared to DM intervention. In the latter, interventions are helped by the contractionary effects they produce in Germany.

Interesting results are also obtained in the case of an expected DM appreciation, where under dollar intervention a strong upward pressure in other members' interest rates occurs. This asymmetry is reduced under DM intervention. DM sales by other members reduce German interest rates, reducing upward interest rate pressure on other members. Another useful implication is that the upward DM pressure against the dollar is reduced.

Assuming now that a small country's currency is expected to depreciate, under dollar intervention it has to bear the whole adjustment burden. Under DM intervention pressure is lessened. Other members' interest rates move downwards. Asymmetry remains though, because of the small size of the given economy.

Now under sterilization, its systematic use affects the inter-country transmission of monetary shocks within the union. Also, FEM intervention is less effective and does not manage to reduce exchange rate volatility and leads to substantial flows of international reserves.

One can see from the above the advantages of intervening in EEC currencies - and in a non sterilizing way - rather than in dollars. It should be mentioned though that de Grauwe's results should be expected since the two cases here - EEC

currency intervention and dollar intervention - are not similar and in this sense they do not entail an equal sharing of the adjustment burden among members. When other members purchase DMs, Germany automatically participates in the adjustment process and will therefore accept part of the adjustment. Not so when they intervene in dollars while Germany follows a "benign neglect" intervention policy. Asymmetries arise since it is only these countries who act to correct a disturbance created by Germany and will therefore accept the burden implied by this intervention. It seems that asymmetries would not arise under dollar intervention and German participation in the process. Generally, dollar intervention would be equivalent to Snake currency intervention as far as its monetary effects are concerned assuming that all dollars sold (bought) by a country are bought (sold) by the other country. In that case, monetary contraction (expansion) in the former, is exactly offset by expansion (contraction) in the latter. Asymmetries will develop under dollar intervention, if one country follows a "benign neglect" policy as far as its dollar exchange rate is concerned.

One could perhaps consider certain cases where authorities allowed or did not allow the monetary effects of their imbalances to make themselves felt in the money market and what they gained from such policies. In Italy substantial liquidity was largely caused by money creation for the government in the form of direct credits from the central bank. This policy forced Italy to leave the Snake as early as 1973. Substantial money creation continued unabated averaging 20 percent annually, contributing largely to the 50 percent effective Lira depreciation since 1971 and effects on prices and wages. Authorities spent $7.5 b., between 1973

and 1976, to avoid undesirable depreciation effects. Annual liquidity outflow averaged 3 percent of money supply in the period 1971-76. Despite such outflows, money supply increased strongly, implying that monetary effects of outflows were compensated. France, before leaving the Snake in 1976, spent $4.0 b in intervention. Here too, authorities did not allow monetary effects to make themselves felt on monetary conditions. In 1976 I, a period of large reserve losses, money supply rose by 15 percent per annum, after an even larger rise in the previous year. Reserve losses would continue indefinitely unless France were to leave the Snake, which it did. Authorities also announced that they would keep FrFr close to the Snake. By 1978 I it dropped effectively by 19 percent, preventing inflation control. Sweden spent $1.5 b in 1977 to remain in the Snake. Interest rates hardly rose at all during this period indicating that monetary effects were compensated. So departure from the Snake was the only possibility left to stop reserve losses. By 1978 its effective rate fell by 12 percent. The Netherlands kept for most of the period easy monetary conditions to discourage inflows. During 1976 II-III intervention reached $1.0 b. to prevent depreciation in DG. The Bank compensated the monetary effects of this intervention. In August when developments began to assume crisis proportions the Bank put an end on commercial banks to further augment their recourse to them and finance purchases of foreign exchange. Interest rates rose considerably, while the call rate rallied for a short while at 50 percent high on an annual basis. The Bank gave precedent to maintaining the exchange rate which it considered appropriate over its concern for orderly markets and depreciation effects. The DG did not finally avoid the 2 percent devaluation in the Frankfurt

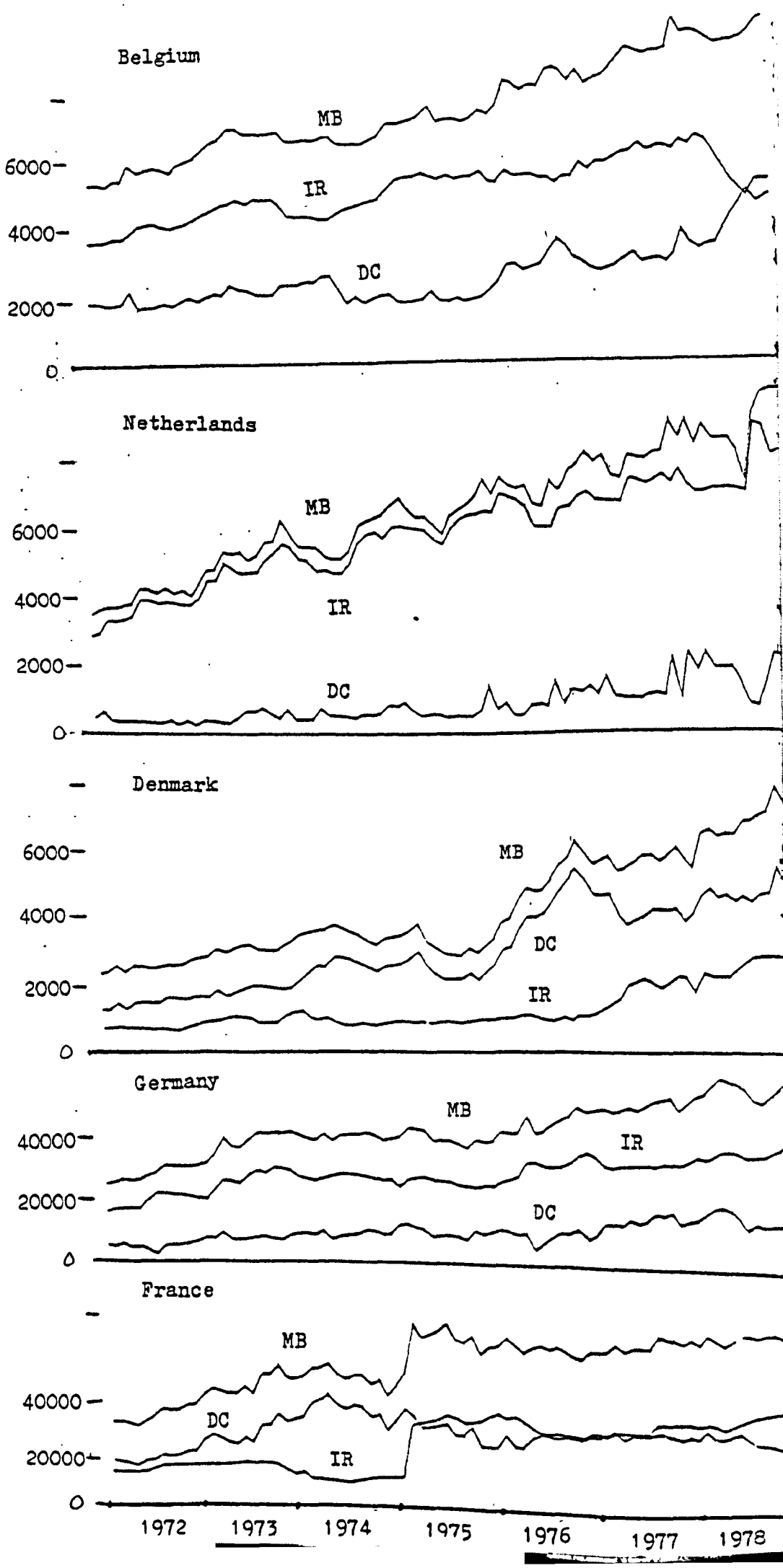
realignment. The DKr was also devalued by 6 percent. Denmark's DCE rose by about 20 percent over the year to October 1976. German authorities have - since 1975 - allowed inflows to push the growth rate of the MB target above its predetermined level. The 8 percent annual growth target was overshot by 2 percent in 1975, 1.2 percent in 1976, 2 percent in 1977 and 3.5 percent in 1978. Intervention in 1978 obliged the Bundesbank to review in 1979 MB target, see Emminger (1979, p 19).

For the small Snake countries it is suggested, see Szász (1978), that they should adhere to the non-sterilization rule, especially in crisis periods, and repel speculative attacks on their currencies, given that they have a vital interest on stable exchange rates with their main trade partners. However chart 5.4 seems to suggest that on a number of occasions - some of which coincided with crisis periods - capital flows did not seem to offset domestic monetary policy measures. This happened to a lesser extent for the Netherlands although the frequency and duration of the incidents increased after 1976. For Belgium this happened more frequently, while for Denmark it covered more than half of the Snake period. The diagram for France indicates such operations, especially until the end of 1976, II, although to a lesser extent later and especially after 1978, I. For Germany it indicates long periods of MB control by the Bundesbank. The change in the second half of 1978 is evident. It should also be kept in mind that Germany on certain occasions appreciated its currency and avoided large intervention amounts.

Further, this evidence is far from convincing. A strong negative relation between changes in domestic and foreign assets is open to two precisely opposite interpretations. It is evidence that monetary policies are offset by changes in

Chart 5.4 The Monetary Base. Monthly Changes in Domestic and Foreing Components.

MB=Monetary Base
IR=International Reserves
DC=Domesic Component
Million European Units of Account.



foreign assets and also evidence of sterilization operations and hence some control on money supply. That seems to be a serious problem. A reduction, say, in domestic assets is offset by a rise in foreign assets, but also it could be that a rise in foreign assets is offset by a reduction in domestic assets. Since money supply changes tend to be negatively related to changes in foreign assets, if an excessive expansion of central bank credit tends to reflect in part a reduction in foreign assets and in part an expansion in money supply, changes in money supply - to the extent that sterilization is incomplete - tend to be positively related to changes in foreign assets. This simultaneity problem exists also in econometric analysis making regression coefficients ambiguous, as it will be seen below, together with other difficulties on testing for sterilization.

5.C.d. Econometric Analysis on Sterilization

A review on the kind of econometric analysis undertaken on international capital flows is attempted in Appendix II. It was necessary to help us draw conclusions on the form to be used in our analysis, in order to check for members' ability to sterilize during the Snake period. Our analysis concentrates on two forms. The first refers to the macroeconomic model of the financial sector developed by Kouri and Porter (1974). It provides the basis for an empirical analysis of capital flows. It is a portfolio model for an SOE, in which capital movements occur through adjustments in the financial sector. The latter is specified in terms of the domestic demand function for base money and for domestic and foreign assets. The supply of base money is a function of the flow of the central bank's foreign assets and its control over the domestic MB component. The real sector of the economy is exogenous to the model so that

changes in income, prices and current account of the XB are exogeneously given as are wealth at home and abroad, which serve as a portfolio constraint. Kouri and Porter assume perfect capital mobility as the limiting case. A simple monetary model of an open economy is then obtained. The model is reduced to the following equations:

$$Md = M(If, Yd, Wd, \Pi^e - \Pi) \qquad (1)$$

$$Ms = NDA + NFA \qquad (2)$$

$$\Delta NFA = C + CA \qquad (3)$$

$$Md = MS \qquad (4)$$

where Md is the demand for money, If is the foreign interest rate, Yd is the gross national product, Wd is the domestic wealth, Π^e and Π are the expected and current exchange rate, Ms is the money supply, NDA and NFA are net domestic and foreign assets, C is the net capital flow and CA is the net current account.

In equation (1), since the model considers the case of an SOE under perfect capital mobility, yields on assets at home and abroad are equalised at all times. Kouri and Porter translate this equality as between domestic and foreign interest rates. Md, Ms, NFA and C are endogenous variables in the model. NDA - determined by the central bank - CA, Y, W, Π^e and Π are assumed to be exogeneously determined. By using first difference transformation of (1), (2) and (4) and substituting into (3) and solving the system for C, the result is a reduced form that can serve as a basis for regression analysis. The wealth variable is dropped from the regression equation due to lack of quarterly data and the fact that in a regression equation of a first difference form, a constant can serve as a scale variable. The difficulty in deriving a testable hypothesis that could satisfactorily describe the

behaviour of speculators has resulted in using a set of dummy variables - DSP - for speculation against the peg, while speculation within the band is unexplained, which partly substitute for the divergence between expected and actual exchange rates. From the transformation we obtain:

$$\Delta Md = M(\Delta If, \Delta y, \Delta Wd, \Delta(\Pi^e - \Pi)) \qquad (1')$$

$$\Delta Ms = \Delta NDA + \Delta NFA \qquad (2')$$

$$\Delta Md = \Delta Ms \qquad (4')$$

$$\Delta NFA = \Delta Ms - \Delta NDA$$

$$= C + CA \qquad (3')$$

so:

$$C = \Delta Ms - \Delta NDA - CA \qquad (5)$$

Now let $\Delta Md = a_0 + a_1 \Delta If + a_2 \Delta y + a_5 DSP \qquad (1'')$

Then we can write the reduced form equation

$$C = a_0' + a_1 \Delta If + a_2 \Delta y - \Delta NDA - CA + a_5 DSP \qquad (5')$$

For regression purposes we have

$$C = a_0 + a_1 \Delta If + a_2 \Delta y + a_3 \Delta NDA + a_4 CA + a_5 DSP + u \qquad (5'')$$

where the expected signs are: $a_{1<0}$, $a_{2>0}$, $0 > a_3$, $a_{4>-1}$, $a_{5>0}$ in the case of speculative capital inflows and $a_{5<0}$ in the case of speculative outflows, providing a base for one tail test, u is the error term.

ΔIf and Δy variables indicate the response of C to changes in the demand for money. a_1 measures the effect of a one percentage change of the world interest rate on C, when the domestic interest rate is allowed to adjust completely. A rough measure of the effect of a one percentage change in If on the capital account, when the domestic interest rate is fixed by sterilization, is given by $a_1/(1+a_3)$, see Kouri (1975, p 26). CA and ΔNDA indicate the response of C to current account imbalances and to monetary instruments affecting money supply. These two variables are important in this analysis since their

coefficients should reflect the degree to which, other things being equal, addition or subtraction from the domestic component of the money base are offset by capital outflows and inflows. Under perfect capital mobility Kouri and Porter assume complete offsetting in which case ΔNDA and CA would have a coefficient of -1. No lag in the adjustment of capital flows to independent variables is implied. When capital mobility is zero, they are equal to zero. They should also be equal to each other.

ΔNDA is the monetary policy instrument. Empirically, other refinements are necessary allowing for such factors as changes in reserve requirements - ΔRR - intensively used in Germany.

The coefficient on CA indicates also the extent to which private capital flows finance fluctuations on the CA. Implications on the direct inflationary effects out of the CA follow. The possibility of lagged adjustment of capital flows to independent variables can also be tested. A one period lag is entered in the ΔIf, Δy, ΔNDA, and CA variables.

One should expect a non-zero interest rate coefficient as long as the demand for money is interest sensitive, see Kouri (1975, p 25), Kouri and Porter (1974, p 460). Its significance though is likely to be reduced, the probable reason being the fact that the behaviour of the forward premium - FP - is not incorporated in the equation. Since it often moves in a direction which is opposite to that of If, its exclusion is likely to suppress the If coefficient. In our analysis we also include ΔFP as an explanatory variable.

In addition a seasonal dummy variable - DS - is included to capture the pronounced end of year inflow and subsequent outflow.

Statistical estimation of the modified equation (5") is beset with difficulties, which have been analysed in appendix II.

These refer to mis-specification of the reaction function, thereby not eliminating the simultaneity between a change in domestic money supply and the change in foreign assets as dependent variables. Little confidence is then attached to some of the key coefficients in the regression equation (5") based on the reduced form equation, which may be biased while the direction of the bias is not clear. Argy and Kouri (1974) attempt to isolate the offsetting and sterilization effects by a two stage procedure. They incorporate a reaction function into the equations estimating capital flows. They suggest a simultaneous system in which both ΔNDA and ΔNFA are determined, see Argy and Kouri (1974, pp 209-22). So, apart from the capital flow equation above, sterilization policies lead to the second relationship among ΔNDA, C, and CA.

$$\Delta NDA = f(C, CA, Z) \qquad (6)$$

where Z stands for all other variables explaining ΔNDA. The resulting regression equation for sterilization is the following:

$$\Delta NDA = b_0 + b_1 C + b_2 CA + b_3 RCU, + b_4 T + b_5 DS + v \qquad (6')$$

where RCU is the rate of capacity utilization taken as a proxy for the domestic target of monetary variables, T is a trend variable included to capture the secular increase in domestic money supply. Such an increase is given by $b_0' + b_4 T$. Since quarterly data are used, seasonal dummies are also included for the first, second and third quarter. v is the error term.

Coefficients b_1 and b_2 measure the extent to which the effect of capital movements and CA fluctuations on the MB are sterilized by monetary policies. When b_1 and b_2 are equal to -1 the balance of payments has no effect on the MB.

Equation (6') is used in conjunction with (5") in a two-stage least squares estimation of capital movements and ΔNDA as dependent variables.

Both forms of analysis are used, so that the results obtained can be compared. In the second form, in contrast to other analyses, we are going to include discount borrowing in the monetary policy variable, so that a certain degree of bias of the coefficient is excluded. Both total and short-term private capital flows are considered with a modification in the monetary policy variable for Germany as it will be seen below. Prior empirical work has concentrated in the sixties and early seventies. Our analysis refers to the full Snake period. We check for sterilization operations for Belgium, Netherlands, Denmark, France and Germany, using quarterly data. We can also give answers to other questions such as to what extent current account fluctuations are financed by private capital flows, what are the effects of changes in the world interest rate, to what extent capital flows accommodate cyclical and secular movements in income and how much of capital flows is due to speculation. Answering these questions one could perhaps have an idea of the feasibility of independent monetary policy, by means of sterilization operations in open economies which permit capital flow freedom.

With respect to expectations on exchange rate adjustment they should be reflected in FP and international interest rate differentials, rather than in large capital flows. However, if the expected exchange rate change is even moderately large, experience shows that the system breaks down because negative interest rates would be needed to eliminate speculative profit. Interest rates do not fall below zero - in case of inflows - at least in the absence of exchange controls. Speculative flows based not on interest rate considerations but on revaluation expectations would still continue. The speculative dummies attempt to capture the most important speculative

episodes, avoiding losing many degrees of freedom and the impairing of the explanatory power of the equations.

Finally, according to Kouri (1975, p 27) OLS estimates of the capital flow equation, compared to those of the 2SLS model, are not likely to be seriously biased in the case where in central bank policy, discretionary changes in policy tend to dominate regular response patterns.

On the proposed scheme for econometric analysis on capital flows in the EEC members, while there are many questions requiring structural models to be satisfactorily analysed, the reduced form approach seems to provide the critical information needed for our analysis, although it should be received with caution in view of the comment made above and in appendix II. The proposed empirical analysis to check for sterilization operations will make use of both the single equation regression analysis and the analysis based on the 2SLS macroeconomic approach. Both total private capital flows (TPC) and short term private capital flows (STPC) are analysed. In the second case CA refers to the basic balance. Equations will take the form:

A. Capital flow equation, macroeconomic approach. OLS.

A1. Belgium, Netherlands, Denmark, France.

$$C = a_0+a_1\Delta If+a_2\Delta y+a_3\Delta NDA+a_4 CA+a_5 DSP+a_6 DS+a_7\Delta FP+u$$

A2. Germany

$$C = a_0+a_1\Delta If+a_2\Delta y+a_3\Delta NDA+a_4 CA+a_5 DSP+a_6 DS+a_7\Delta FP+a_8\Delta RR+u$$

In an alternative specification ΔNDA and ΔRR variables are replaced by the $(\Delta NDA-\Delta RR)$ variable which is equal to the domestic component of the extended MB.

For all five countries regressions will also be run without the ΔFP variable.

B. Two-Stage Least Squares Regression Analysis, Macro-economic approach.

B1. Belgium, Netherlands, Denmark, France.

$$C = a_0+a_1\Delta If+a_2\Delta y+a_3\Delta NDA+a_4 CA+a_5 DSP+a_6 DS+a_7\Delta FP+u$$

$$\Delta NDA = b_0+b_1 C+b_2 CA+b_3 RCU+b_4 T+b_5 DS1+b_6 DS2+b_7 DS3+v$$

B2. Germany

$$C = a_0+a_1\Delta If+a_2\Delta y+a_3\Delta NDA^*+a_4 CA+a_5 DSP+a_6 DS+a_7\Delta FP+u$$

$$\Delta NDA^* = b_0+b_1 C+b_2 CA+b_3 RCU+b_4 T+b_5 DS1+b_6 DS2+b_7 DS3+v$$

where $\Delta NDA^* = \Delta NDA-\Delta RR$ and $\Delta RR_t = (r_t-r_{t-1})L_{t-1}$

ΔRR represents the policy induced changes in reserve requirements, r_t stands for the average reserve requirements ratio, and L_t is the stock of liabilities subject to reserve requirements at the end of the period.

Equations are also run by incorporating a one period lag in ΔIf, Δy, ΔNDA and CA RCU variables. For other technical issues see Appendix III.

5.C.e. Empirical Analysis

From a detailed consideration on the Snake period based on available information we can suggest a set of dummy variables designed to capture pronounced capital inflows and outflows during a number of speculative episodes in the period 1972 II to 1978 IV. They approximate the expectations variable on exchange rate changes. The dummy variables that are included on a priori grounds for our analysis are presented in Table 5.10.

Table 5.10 Speculation Dummy Variables

Belgium: D1 = +1 in 1972 IV, +1 in 1973 I, -1 in 1973 II;

D2 = 0.5 in 1973 IV, +1 in 1974 I;

D3 = -1 in 1975 IV, -1 in 1976 I, +1 in 1976 II, +1 in 1976 III;

D4 = 0.5 in 1977 II, 0.5 in 1977 III, -1 in 1977 IV, +1 in 1978 I, 0 in 1978 II, -1 in 1978 III.

Netherlands: D1 = -1 in 1972 IV, +1 in 1973 I, -1 in 1973 II;
D2 = -1 in 1976 II, +1 in 1976 III, +1 in 1976 IV;
D3 = +1 in 1978 II, -1 in 1978 IV.

Denmark: D1 = -1 in 1973 III, +1 in 1973 IV;
D2 = +1 in 1975 IV, -1 in 1976 I;
D3 = +1 in 1977 III, -1 in 1977 IV, +1 in 1978 I.

France: D1 = +1 in 1973 I, 0 in 1973 II, -1 in 1973 III;
D2 = +1 in 1974 I, +1 in 1974 II, +1 in 1974 III;
D3 = +1 in 1975 III, +1 in 1975 IV, -1 in 1976 I;
D4 = +1 in 1976 III, +1 in 1976 IV, +1 in 1977 I;
D5 = +1 in 1977 IV, 0 in 1978 I, -1 in 1978 II.

Germany: D1 = +1 in 1972 II
D2 = +1 in 1973 I, 0 in 1973 II, +1 in 1973 III,
-1 in 1973 IV, -1 in 1974 I, 0 in 1974 II,
-1 in 1974 III, -1 in 1974 IV;
D3 = -1 in 1975 II, -1 in 1975 III, -1 in 1975 IV,
+1 in 1976 I, -1 in 1976 II;
D4 = +1 in 1977 IV, +1 in 1978 I, -1 in 1978 II,
+1 in 1978 III, 0.5 in 1978 IV.

Results for the capital flow equation are presented in tables 5.11, 5.12, 5.13 and 5.14. They seem to be disappointing in the cases of Belgium and France. No conclusions can be drawn on the authorities' ability to sterilize the liquidity effects of capital flows. This approach does not seem to be useful for these two countries where the response of capital movements to changes in monetary policy was not established. In the case of Belgium, one has to take into account the dual exchange market operating which differed from those that assume perfect market dichotomy. According to Boll (1978), the quantitative implications of the exceptions to market

Table 5.11 Estimates of the Capital Flow Equation for Belgium, Netherlands, Denmark and France[1] OLS

Ind / Dep	Country	Constant	ΔIf	Δy	ΔNDA	CA	DSP1	DSP2	DSP3	DSP4	DSP5	DS	ΔFP	$\bar{R}^2$	F	SE	DW
TPC1	BLEU	0.270 (0.25)*	1.132 (0.90)*	-0.153 (-1.69)*	0.275 (2.28)	0.186 (0.95)*	9.470 (2.20)	23.86 (3.25)	25.63 (7.42)	23.75 (6.75)	-	-0.638 (-0.14)*	-34.22 (-1.04)*	0.872	18.66	34.43	2.170
	N	1.074 (4.40)	-0.281 (-3.06)	0.046 (4.07)	-0.575 (-7.41)	-1.367 (-7.70)	2.587 (4.67)	0.438 (2.40)	1.777 (3.05)	-	-	-1.940 (-3.15)	-1.358 (-2.95)	0.871	20.47	0.32	1.500
	D	0.704 (2.52)	0.150 (1.04)*	0.125 (0.82)*	-0.5 (-4.39)	0.378 (0.19)*	1.584 (2.58)	4.060 (6.09)	1.918 (2.45)	-	-	0.350 (0.54)*	-	0.811	14.95	0.92	0.970
	F	1.251 (1.87)*	-0.694 (-1.92)	0.007 (2.15)	-0.012 (-0.42)*	-0.105 (-1.15)*	7.165 (4.14)	7.474 (5.05)	5.504 (4.06)	8.968 (6.26)	7.275 (4.53)	-4.253 (-2.32)	47.95 (2.11)	0.834	12.89	4.86	2.310
TPC2	BLEU	-0.420 (-0.02)*	1.777 (1.63)*	-0.015 (-1.70)*	0.283 (2.35)	0.242 (1.28)*	7.98 (1.95)	19.87 (3.17)	26.80 (8.19)	25.16 (7.74)	-	0.257 (0.06)*	-	0.871	20.51	34.59	2.081
	N	1.042 (3.57)	-0.250 (-2.30)	0.047 (3.44)	-0.558 (-6.04)	-1.311 (-6.22)	3.542 (6.61)	1.256 (2.80)	1.260 (1.90)	-	-	-2.150 (2.94)	-	0.816	15.38	15.38	1.690
	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1.121 (1.53)*	-0.805 (-2.04)	0.007 (1.99)	-0.013 (-0.04)*	-0.821 (-0.82)*	6.272 (3.39)	7.88 (4.87)	5.116 (3.42)	9.077 (5.98)	7.742 (4.41)	-4.920 (-2.09)	-	0.798	11.29	5.91	2.490
STPC1	BLEU	2.940 (1.32)*	-0.005 (-0.44)*	-0.222 (-0.97)*	-0.35 (-0.23)*	0.100 (0.66)*	5.476 (1.05)*	-21.98 (-2.32)	20.28 (4.87)	19.45 (4.35)	-	-8.891 (-1.51)*	-54.14 (-1.29)*	0.774	9.92	55.94	2.470
	N	1.171 (4.06)	-0.393 (-2.34)	0.037 (1.98)	-0.182 (-1.32)*	-4.180 (-0.49)*	3.234 (3.22)	0.339 (0.49)*	-0.273 (-0.28)*	-	-	-2.160 (-1.96)	-2.840 (-1.94)	0.368	2.68	1.07	1.290
	D	0.013 (0.06)*	0.169 (1.25)*	0.163 (1.12)*	-0.412 (-3.18)	-0.297 (-1.71)*	1.857 (2.54)	2.907 (5.46)	1.739 (2.91)	-	-	0.619 (1.0)*	-	0.779	12.46	0.80	1.240
	F	2.704 (3.68)	-0.457 (-1.10)*	-0.001 (-0.07)*	-0.000 (0.0)*	22.27 (0.86)*	5.001 (2.56)	5.360 (3.22)	5.533 (3.52)	7.582 (4.78)	4.683 (2.59)	-1.661 (-0.65)*	0.002 (0.02)*	0.661	5.62	6.33	2.240
STPC2	BLEU	2.502 (1.12)*	-0.005 (-0.41)*	-0.138 (-0.62)*	0.629 (0.47)*	0.111 (0.72)*	3.378 (0.67)*	-28.40 (-3.47)	21.48 (5.19)	21.44 (5.02)	-	-7.679 (-1.30)*	-	0.766	10.44	58.08	2.210
	N	1.749 (4.16)	-0.382 (-2.32)	0.037 (2.04)	-0.177 (-1.32)*	-0.271 (-1.93)	3.526 (4.46)	0.441 (0.68)*	-0.397 (-0.43)*	-	-	-2.22 (-2.07)	-	0.395	3.12	1.02	1.260
	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	2.734 (3.64)	-0.571 (-1.25)*	-0.001 (-0.08)*	-0.001 (-0.02)*	0.152 (0.14)*	4.620 (2.45)	5.543 (3.39)	5.317 (3.46)	7.660 (4.98)	4.858 (2.73)	-1.589 (-0.63)*	-	0.667	6.21	6.22	2.350

1. Period 1972 II to 1978 IV. Figures in parentheses are the t statistics. Starred numbers indicate insignificance of coefficients at the 5 percent significance level. The DS variable equals to 1 in the fourth quarter, zero otherwise.

Table 5.12 Estimates of the Capital Flow Equation for Belgium, Netherlands, Denmark and France[1] OLS

Dep \ Ind	Country	Constant	ΔIf	Δy	ΔNDA	CA	DSP1	DSP2	DSP3	DSP4	DSP5	DS	ΔFP	ΔIf-1	Δy-1	ΔNDA-1	CA-1	ΔFP-1	$\bar{R}^2$	F	SE	DW
TPC	B	2.094 (0.78)*	-0.273 (-0.20)*	-0.015 (-0.99)*	-0.123 (-0.81)*	0.019 (0.99)*	5.851 (3.24)	32.61 (4.32)	24.65 (7.16)	24.35 (6.52)	-	-4.991 (-0.88)*	-61.81 (-1.83)	1.932 (1.64)*	-0.013 (0.82)*	-0.006 (-0.06)*	0.196 (1.03)*	-43.77 (-1.53)*	1.901	16.22	27.45	2.851
	N	1.575 (8.95)	-0.145 (-2.49)	0.090 (4.55)	-0.683 (-1.63)*	-1.382 (-12.7)	2.223 (6.42)	0.84 (2.97)	1.734 (5.19)	-	-	-3.862 (-5.58)	-9.365 (-3.21)	0.043 (0.71)*	0.034 (2.92)	-0.222 (-3.67)	-0.471 (-4.86)	6.644 (2.79)	0.964	48.98	0.92	1.680
	D	0.823 (2.24)	0.076 (0.46)*	-0.006 (-0.26)*	-0.483 (-3.76)	0.021 (0.08)*	1.947 (2.32)	3.644 (4.34)	1.372 (1.82)*	-	-	0.762 (0.93)*	-	-0.032 (-0.21)*	-0.012 (-0.53)*	-0.199 (-1.52)*	-0.022 (-0.09)*	-	0.799	9.33	0.99	0.932
	F	0.854 (0.82)*	-0.741 (-1.03)*	-0.002 (-0.16)*	-0.020 (-0.47)*	-0.052 (0.48)*	6.910 (3.39)	7.260 (4.20)	5.773 (3.31)	8.957 (4.54)	7.425 (3.66)	-0.934 (-0.16)*	44.53 (0.99)*	0.243 (0.52)*	-0.006 (-0.71)*	0.012 (0.24)*	-0.723 (-0.59)*	4.676 (1.06)	0.803	7.37	6.01	1.801
STPC	B	3.050 (0.77)*	0.250 (0.12)*	-0.030 (-1.08)*	0.210 (0.96)*	-0.015 (-0.05)*	6.811 (0.96)*	-15.07 (-1.31)*	18.71 (3.65)	21.71 (3.79)	-	-6.391 (-0.74)*	-86.22 (-1.64)*	-0.027 (-0.99)*	-1.431 (-0.72)*	0.101 (0.152)*	0.034 (0.12)*	-66.89 (-1.22)*	0.741	5.77	66.53	2.572
	N	1.537 (4.27)	-0.556 (-2.91)	-0.036 (-0.61)*	-0.126 (-0.31)*	-0.249 (-1.27)*	3.910 (3.41)	0.629 (0.66)*	-0.626 (-0.60)*	-	-	-0.383 (-0.18)*	-5.183 (0.53)*	-0.021 (-0.10)*	-0.052 (-1.44)*	-0.032 (-0.16)*	-0.213 (1.13)*	-6.141 (-0.68)*	0.406	2.22	1.03	1.393
	D	0.338 (0.98)*	0.141 (0.90)*	-0.005 (-0.21)*	-0.439 (-3.08)	-0.327 (-1.72)*	2.001 (2.54)	2.773 (4.50)	1.649 (2.12)*	-	-	0.774 (0.99)*	-	0.001 (0.01)*	-0.028 (-1.33)*	-0.007 (-0.05)*	-0.049 (-0.171)	-	0.756	7.48	0.89	1.162
	F	2.584 (1.84)	-0.708 (-0.89)*	-0.013 (-0.87)*	-0.001 (0.18)*	0.094 (0.75)*	4.741 (2.23)	5.008 (2.75)	5.810 (3.95)	7.661 (3.68)	4.979 (2.40)	3.655 (0.54)*	13.51 (46.16)	0.151 (0.29)*	-0.008 (-0.99)*	0.023 (0.49)*	-0.037 (-0.24)*	74.52 (1.61)*	0.654	3.95	6.72	2.011

1 See Footnote of Table 5.11

Table 5.13 Estimates of the Capital Flow Equation for Germany[1] OLS

Ind / Dep	Constant	ΔIf	Δy	ΔNDA	CA	DSP1	DSP2	DSP3	DSP4	SD	ΔFP	ΔRR	ΔNDA*	$\bar{R}^2$	F	SE	DW
TPC1	0.781 (0.75)*	0.289 (0.47)*	-0.009 (-0.12)*	-0.167 (-1.57)*	-0.009 (-0.38)*	7.121 (1.69)*	5.741 (2.45)	5.289 (3.46)	3.995 (2.27)	0.328 (0.13)*	7.612 (0.23)*	0.427 (2.49)	-	0.811	11.16	8.801	2.082
TPC2	0.205 (0.22)*	0.449 (0.91)*	-0.056 (-0.67)*	-	-0.037 (-0.16)*	9.295 (2.31)	6.649 (3.45)	5.341 (3.59)	5.879 (3.36)	2.439 (1.15)*	-0.348 (-0.01)*	-	-0.225 (-2.56)	0.825	13.24	8.174	2.271
TPC3	0.751 (0.75)*	0.361 (0.71)*	-0.053 (-0.17)*	-0.161 (-1.66)*	-0.088 (-0.38)*	7.411 (1.92)*	6.121 (3.63)	5.287 (3.56)	4.013 (2.35)	0.526 (0.22)*	-	0.425 (2.56)	-	0.823	13.05	8.279	2.093
TPC4	0.241 (0.27)*	0.464 (1.0)*	-0.544 (-0.76)*	-	-0.032 (-0.15)*	9.229 (2.61)	6.682 (4.21)	5.383 (3.82)	5.681 (3.59)	9.386 (1.19)*	-	-	-0.223 (-2.61)	0.835	15.63	7.691	2.281
STPC1	2.801 (1.96)*	-0.336 (-0.49)*	0.013 (0.14)*	-0.121 (-1.03)*	-0.388 (-1.91)	0.633 (0.14)*	4.071 (1.60)*	4.341 (2.42)	2.981 (1.54)*	0.385 (0.13)*	37.51 (0.99)*	0.344 (1.71)*	-	0.627	4.97	10.78	2.031
STPC2	1.649 (1.80)*	-0.312 (-0.48)*	-0.018 (-0.23)*	-	-0.341 (-1.90)	1.615 (0.39)*	4.457 (1.85)	4.507 (2.74)	4.267 (2.39)	1.004 (0.4)*	40.57 (1.15)*	-	-0.167 (-1.67)*	0.666	6.18	9.651	2.162
STPC3	1.921 (2.06)*	-0.105 (0.20)*	-0.009 (-0.11)*	-0.087 (-0.82)*	-0.471 (-2.55)	2.702 (0.70)*	5.802 (3.27)	5.232 (3.15)	1.362 (2.5)	0.698 (0.28)*	-	0.374 (2.0)*	-	0.679	6.49	9.281	2.173
STPC4	-1.535 (1.67)*	0.109 (0.21)*	-0.035 (-0.44)*	-	-0.373 (-2.13)	3.363 (0.86)*	6.332 (3.54)	4.638 (2.80)	4.415 (2.46)	2.235 (0.98)*	-	-	-0.147 (-1.47)*	0.659	6.59	9.834	2.313

1 See Footnote of Table 5.11

Table 5.14 Estimates of the Capital Flow Equation for Germany[1] OLS

Ind / Dep	Constant	ΔIf	Δy	ΔNDA	CA	DSP2	DSP3	DSP4	SD	ΔFP	ΔRR	ΔNDA*	ΔIf-1	Δy-1	ΔNDA-1	CA-1
TPC1	3.845 (1.57)*	-0.398 (-0.45)*	0.167 (1.42)*	-0.402 (-2.02)	-0.133 (-0.43)*	0.406 (0.10)*	5.068 (3.15)	3.335 (1.70)*	-7.431 (-1.78)*	55.88 (0.92)*	0.555 (2.94)	-	-0.004 (-0.01)*	0.043 (0.55)*	0.471 (-0.93)*	-1.109 (-2.20)
TPC2	4.059 (1.77)*	0.238 (0.32)*	0.973 (0.91)*	-	-0.233 (-0.87)*	2.251 (0.76)*	5.612 (3.68)	4.528 (2.63)	-4.159 (-1.18)*	7.221 (0.16)*	-	-0.437 (-3.00)	-0.486 (-0.68)*	0.010 (0.01)*	-	-1.067 (-2.35)
STPC1	1.399 (1.60)*	0.373 (0.55)*	0.279 (3.00)	-0.018 (-0.13)*	-0.074 (-0.39)*	4.560 (1.74)*	6.296 (4.60)	-2.801 (-1.39)*	-7.862 (-2.61)	-9.952 (-0.22)*	0.514 (3.08)	-	0.144 (0.27)*	0.162 (2.57)	0.026 (0.28)*	-0.964 (-4.38)
STPC2	1.531 (1.03)*	0.542 (0.73)*	.0.131 (1.41)*	-	-0.565 (-0.26)*	4.429 (1.71)*	5.258 (3.53)	0.643 (0.31)*	-2.648 (-0.94)*	0.177 (0.00)*	-	-0.206 (-1.53)*	-0.495 (-0.84)*	0.072 (1.02)*	-	-0.712 (-3.09)

ΔFP-1	ΔRR-1	ΔNDA*-1	$\bar{R}^2$	F	SE	DW
-33.87 (-1.19)*	0.312 (1.28)*	-	0.834	8.841	7.632	1.611
-29.18 (-1.09)*	-	-0.071 (0.71)*	0.843	10.59	7.205	1.552
-18.19 (-0.79)	0.501 (1.02)*	-	0.833	8.821	5.002	0.911
-6.931 (-0.27)*	-	-0.261 (-0.25)*	0.769	6.932	6.939	1.693

1. See Footnote of Table 5.11

dichotomy are considerable. The important implication for our analysis is that the test of the hypothesis of offsetting capital flows on the basis of published current and capital account data might be misleading as a result of the lack of a hard and fast rule by means of which XB can be split up into an official and a free market part.

However, there seemed to be a strong effect of exchange rate expectations in generating speculative capital flows in both countries.

More optimistic results are obtained for the Netherlands and Denmark. In the former's case the inclusion of the ΔFP variable is significant and enhances the significance of the ΔIf variable, while under lagged adjustment both ΔNDA and CA coefficients are significant and have the right sign, indicating that current capital flows do not significantly offset domestic monetary policy measures of the previous quarter. Last quarter's current account seems to be moderately financed by current capital flows. Both current and lagged Δy variables seem to be significant in accordance with previous evidence. The ΔNDA coefficient seems to be significant, taking values between -0.56 to -0.68, and is significantly different from -1. On the other hand the CA coefficient, while having the right sign and being significant, takes inconsistent values. Taking into account the standard error, it could be within the accepted limits. Further the D.W. test here is inconclusive. If autocorrelation exists, there will be a bias in the estimates. However, it seems that the two coefficients are not very similar. Such findings conform with previous research during the sixties. Our calculations indicate that private capital flows counterbalanced almost 65 percent of current account fluctuation during that period. If such flows finance, to a large extent, current account

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fluctuations in a country highly integrated into world credit markets it could imply that the need for market intervention, and hence the need for official reserve accumulation, does not arise so much from the need to finance trade imbalances as from the pursuit of independent monetary policy or from the need to offset disturbances on the capital account.

One could perhaps suggest, although with caution, given the difference in size between the two coefficients, that authorities seem to have some ability to sterilize, at least in the short-run if the central bank is willing to accumulate or lose reserves. Further, in the Netherlands, while authorities left the impact of speculative attacks to be felt in the money market, there were long periods where they compensated the monetary effects of their interventions. Also they insisted on keeping substantial liquidity in the economy in order to discourage inflows. That might imply sterilization in case of capital outflows which occurred on frequent occasions. On the other hand, sterilization could be expensive for a small country in the short-run and much more so in the long-run, since a larger proportion of additions to wealth could be allocated to domestic securities - no result can be obtained on that by our analysis. Further, it is likely that speculators will soon react to reserve accumulation by the central bank and make the pursuit of independent monetary policy difficult even in the short-run. Other difficulties may exist too. For example, results above suggest that in order to reduce the MB by DG100 m the Bank would have to reduce the domestic component by DG312 m to offset a reserve accumulation of DG 212m. Authorities then, despite having the ability, may have reasons not to follow such policy in most cases.

With respect to the CA coefficient, its high value seems

to suggest that the direct link between inflation and the current account through the liquidity effect seems to be broken.

Finally, this approach does not seem appropriate when analysing short-term capital flows. One cannot say to what extent short-run adjustment takes place through short-run capital flows and compare the results between TPC and STPC.

In the case of Denmark the ΔNDA coefficient is significant and has the right sign taking values between -0.40 and -0.51 significantly different from -1. However, no definite conclusions can be drawn on sterilization, given the insignificance of the CA coefficient. One could say that in their attempt to preserve orderly markets, Danish authorities followed non-sterilization policies. However, it seems that there were periods in which authorities sterilized their external imbalances, as in the 75/76 period where high monetary expansion was experienced and the DKr was under significant pressure. It has been suggested by Thygesen (1979, pp 95-6) that, despite Denmark's persistent current account deficits, authorities kept real demand and employment at high levels and did not put adequate emphasis on adjustment throughout the Snake period. All this means a greater scope for independent monetary policy. Such pattern of policy contributed to exchange rate instability.

Further, no definite conclusions can be reached in STPC on sterilization, given the insignificance of the CA variable.

Finally, the importance of exchange rate expectations in generating capital flows should also be stressed for these two countries. Some of the speculation variables though, especially under STPC, do not seem to be statistically significant. One should keep in mind that the magnitude of a dummy can be different from that expected either because an inflow,

say, can be extended over a longer time period than an outflow that follows an upward exchange rate movement or because an inflow could induce an outflow so that it will offset partially the XB effect of the speculative inflow. The coefficient of each dummy captures these two factors.

Coming now to the case of Germany, it should not be ignored that it is a country whose tight monetary policies, low inflation levels and expectations on DM revaluations, coupled with frequent crises of other major currencies, resulted in substantial inflows to Germany. Outflows also took place on certain occasions. Their relative quantitative significance was higher compared to that of other members and took place in more frequent time periods.

On the domestic monetary policy and its relation to capital flows, it is only under the ΔNDA^* variable that we have both a correct sign and significant coefficients ranging from -0.25 to -0.44. The strong suggestion of sterilization cannot be definitely supported given the insignificance of the CA coefficient. The lagged CA coefficient is both significant and has the right sign, indicating that capital flows fully finance the last period's current account imbalance. Our calculations also indicate that current capital flows finance only 11.3 percent of the current imbalance. Implications follow with respect to the relationship between the current account and domestic inflation, see Kouri (1975). However, the existence of lags does not seem to completely offset the conventional view of imported inflation, given the one quarter lag of capital flows to offset the current account liquidity effects.

Speculation dummies seem to be statistically significant although with some exceptions on certain equations. The comments on their size made for the case of the Netherlands

apply here too. So for DSP2 subsequent outflows took place after the substantial inflows in 1973. The size of DSP4 appears small compared with the magnitude of inflows that took place since 1977 II. Despite the fact that interest rates were at low levels, inflows kept coming. The whole period was dominated by such inflows. Expectations about exchange rate changes were largely reflected in large capital movements. Adjustment took place by capital inflows, given the high capital mobility and the exogenous world interest rate. The extent to which such speculative disturbances were due to currency weakness or strength, indicates the integration of capital markets which rapidly transmit disturbances whenever they occur. With respect to STPC no definite conclusions can be drawn on sterilization either. However, CA coefficients ranging from -0.34 to -0.47 indicate a moderate finance of the basic balance by short-term private capital flows. A somewhat surprising result seems to be the insignificance of the DSP, which refers to the massive inflow that prompted the sterling crisis. Turning now to the important question on the ability of German authorities to sterilize the effect of their external imbalances on the MB, the following comments can be made: firstly, as in the case of the Netherlands, current account finance in a country highly integrated into world credit markets could indicate a scope for independent monetary policy. The econometric analysis does not give a complete picture on current account finance. However, our calculations indicate that capital flows financed only about 11 percent of these fluctuations during the 1972-78 period, while the figure rose to 42.5 percent for the 1974-1978 period and 53 percent for the 1976-78 period. All these would in turn suggest that the pursuit of independent monetary policy in Germany was not

perhaps as rigorous as it might be expected. On the other hand, during the 1972-78 period, there was a dramatic change on the amount required to control the MB. Kouri and Porter (1974) and Kouri (1975) suggest that for the 1960-70 and 1961-72 periods Germany would have to reduce the domestic MB component by DM ((435 m), (333 m)) to offset a reserve accumulation of DM ((335 m),(233 m)) if it wanted to reduce the MB by DM 100 m. Our estimates indicate that for the period 1972-78 the domestic component has to be reduced by only 166 m to offset reserve accumulation of 66 m[(6)].

Further, there are certain indications on the carrying of sterilization policies. Since early 1973, and for most of the period of this year, substantial inflows took place. Non-sterilization behaviour would suggest an easing of interest rates. However, on the contrary, interest rates were rising and were kept at high levels. Later in 1974 and 1975 and parts of 1976 when capital outflows were taking place, interest rates were falling and were kept at very low levels. Further, the Bundesbank in its monthly report (1976, pp 28-9) commenting on the Snake arrangements, admitted the undertaking of sterilization policies and that its monetary policy was not significantly impeded. Generally Germany was not prevented, despite the capital flows, from maintaining a strict control over its monetary conditions, giving most of its weight in protecting domestic objectives continuously. Authorities did not adjust the external imbalance, since they would have to give up sterilization and accept inflationary pressures. On the other hand one could perhaps detect an easing in monetary conditions since 1976 which became more evident in 1978. While inflows dominated the final period, interest rates were kept at very low levels. However, the use of exchange rate

appreciation as an instrument to control inflation - see Emminger (1979, p 19) - seemed to have contributed to such behaviour. The DM appreciated significantly and contributed to inflation control at home, although it created tensions frequently among the Snake currencies. Germany, one way or the other, paid paramount importance to its domestic objectives, creating on certain occasions instability in the Snake. Finally, the rising DM status as a reserve currency must have contributed to monetary policy independence, ensuring sterilization of the effects of private capital flows on the German MB. To the extent that it was desirable by the German authorities, the liquidity effects of conversion of DM balances in primary reserves by foreign banks could be offset by the Bundesbank by adjusting the domestic component of the MB.

Generally the capital flow equation failed to give results for Belgium and France while no definite conclusions can be obtained for the Netherlands, Denmark and Germany. The Eurodollar rate was not the relevant rate except for France and the Netherlands while the forward premium enhanced the results only for the Netherlands. Exchange rate expectations and speculative flows proved significant for the period under review. Changes in income were significant for the Netherlands, France (TPC) and Germany under STPC, implying that capital flow behaviour reflects divergent growth rates and cyclical phases between countries, with capital flows accommodating the resultant fluctuations in money demand. Fluctuations in money demand are important with income fluctuations explaining demand shifts.

The incorporation of lagged variables, while it provides additional information, does not change the conclusions above with respect to the important questions. TPC results in general seem to be more satisfactory compared to STPC ones.

Table 5.15 Two Stage Least Squares Regression Analysis[1,2] Macroeconomic Approach. Belgium, Netherlands, Denmark, France

Ind / Dep		Constant	ΔIf	Δy	ΔNDA	PC	DS1	DS2	DS3	DS4	DS5	DS	ΔPC	$\bar{R}^2$	F	SE	DW
TPC	B	0.603 (0.29)*	0.003 (0.00)*	-0.018 (-1.52)*	0.443 (1.87)	0.151 (0.69)*	25.96 (5.22)	33.46 (5.81)	35.52 (3.09)	11.85 (2.62)	-	-2.641 (-0.51)*	-33.29 (-0.79)*	0.859	15.72	40.35	2.371
	N	0.836 (2.42)	-0.198 (-1.47)*	0.029 (1.92)	-0.618 (-4.23)	-1.296 (-5.35)	1.421 (1.84)*	0.661 (1.18)*	2.001 (1.83)*	-	-	-1.114 (-1.32)*	-11.71 (-1.90)	0.781	10.48	0.58	2.172
	D	0.441 (1.80)	0.134 (1.16)*	0.029 (2.13)	-0.855 (-6.25)	-0.245 (-1.40)*	1.285 (2.65)	3.129 (5.41)	0.818 (1.57)*	-	-	0.576 (1.09)*	-	0.877	24.20	0.60	1.632
	F	1.133 (1.46)*	-0.615 (-1.29)*	0.007 (1.89)	-0.022 (-0.58)*	-0.101 (-0.97)*	7.188 (3.73)	7.463 (4.76)	5.496 (3.40)	8.784 (5.96)	7.131 (4.12)	-4.685 (-1.91)	49.32 (1.35)	0.818	10.69	5.52	2.151
STPC	B	4.072 (1.62)*	-0.441 (-0.28)	0.007 (0.43)*	-0.177 (-0.55)*	-0.322 (-1.19)*	20.46 (4.19)	22.59 (4.89)	-19.62 (-1.93)*	6.442 (1.19)*	-	-11.69 (-1.78)	46.05 (-0.85)*	0.766	8.90	62.35	2.283
	N	1.321 (4.76)	-0.494 (-3.05)	0.051 (2.78)	-0.284 (-1.55)*	-0.203 (-1.30)*	3.177 (3.45)	0.109 (0.15)*	0.993 (0.866)*	-	-	-3.091 (-2.91)	-6.205 (-0.77)*	0.514	3.82	0.87	1.354
	D	-0.103 (-0.217)	-0.230 (1.89)	0.024 (1.74)*	-0.613 (-3.95)	-0.477 (-2.62)	1.861 (2.87)	2.447 (4.80)	1.465 (2.61)	-	-	0.747 (1.32)	-	0.815	15.53	0.67	1.291
	F	2.876 (3.31)	-0.614 (-1.16)*	-0.001 (-0.20)*	0.014 (0.33)*	-0.015 (-0.12)*	5.422 (2.51)	5.289 (3.02)	5.949 (3.23)	7.511 (4.42)	4.752 (2.44)	-2.008 (-0.69)*	35.91 (0.88)	0.628	4.69	7.15	2.112
		Constant	$\hat{PC}$	CA	RCU	T	DS1	DS2	DS3	DM							
ΔNDA_1	B	-78.73 (-1.08)*	0.253 (1.57)*	0.086 (0.16)*	0.864 (1.19)*	0.798 (1.12)*	-16.91 (-2.45)	6.684 (0.81)*	13.50 (-1.58)*	-				0.377	3.16	140.40	2.123
	N	3.767 (0.33)*	-0.611 (-2.73)	1.194 (-3.34)	-0.027 (-0.24)*	-0.217 (-0.22)*	-0.160 (-0.20)*	1.065 (1.27)*	-1.823 (-2.31)	-				0.623	6.68	1.70	3.051
	D	4.007 (3.34)	-0.695 (-4.65)	-0.855 (-3.46)	-0.463 (-1.66)*	-0.025 (-0.76)*	-4.611 (-5.23)	-1.496 (-2.08)	-2.833 (-3.22)	-				0.606	6.72	1.63	2.541
	F	-169.0 (-1.97)	-0.501 (-0.82)*	0.835 (1.44)*	1.802 (2.02)	0.872 (1.21)*	-3.552 (-0.36)*	1.689 (-0.19)*	1.888 (0.22)*	36.32 (3.04)				0.372	2.85	222.40	1.573
ΔNDA_2	B	1.074 (-1.48)*	0.061 (0.30)*	-0.118 (-0.27)*	1.216 (1.62)*	0.814 (1.37)*	-15.97 (-2.12)	5.275 (0.56)*	-15.16 (-1.68)*	-				0.295	2.49	158.90	2.163
	N	13.32 (0.88)*	-0.204 (-0.57)*	-0.583 (-1.83)	-0.127 (-0.83)*	-0.174 (-1.21)*	0.527 (0.55)*	2.309 (2.36)	-2.192 (-2.26)	-				0.406	3.34	269.50	2.312
	D	2.691 (2.91)	-0.566 (-4.13)	-1.051 (-6.04)	-0.324 (1.52)*	-0.927 (-5.82)	-3.069 (-5.82)	-0.623 (-1.02)*	-1.925 (-2.73)	-				0.726	11.33	1.09	2.371
	F	-155.9 (1.77)	-0.580 (-0.70)*	0.799 (1.25)*	1.666 (1.82)	0.842 (1.14)*	-0.421 (-0.04)*	-1.894 (-0.21)*	-2.397 (-0.27)*	38.52 (3.12)				0.334	2.57	235.60	1.342

1. See Footnotes of Table 5.11. 2. Circumflex indicates computed values. ΔNDA_1 refers to TPC, ΔNDA_2 refers to STPC. DM is a dummy variable for France, 1974 IV = +1, 1975 I = -1, zero otherwise. It refers to unusual changes in money supply.

Table 5.16 Two Stage Least Squares Regression Analysis[1]. Macroeconomic Approach. Belgium, Netherlands, Denmark, France.

Ind / Dep	Country	Constant	ΔIf	Δy	ΔNDA	CA	DSP1	DSP2	DSP3	DSP4	DSP5	DS	ΔFP	ΔIt-1	Δy-1	ΔNDA-1		CA-1	ΔFP-1	$\bar{R}^2$	F	SE	DW
TPC	B	0.535 (0.16)*	-0.441 (-0.39)*	-0.018 (-1.09)*	0.387 (1.46)*	0.06 (0.28)*	21.31 (4.91)	23.08 (5.36)	34.86 (4.27)	16.04 (3.64)	-	-3.32 (-0.58)*	-76.49 (-1.71)*	1.296 (1.02)*	-0.006 (-0.34)*	-0.002 (-0.01)	*	0.132 (0.62)*	73.54 (-1.72)*	0.905	15.56	28.54	2.623
	N	1.341 (2.25)	-0.034 (0.23)*	0.108 (2.34)	-0.821 (-3.42)	-13.75 (-5.64)	0.507 (0.61)*	-0.185 (-0.31)*	1.272 (1.89)*	-	-	-3.188 (-1.97)	-12.01 (-1.68)*	0.021 (0.15)*	0.061 (2.10)	0.070 (0.25)	*	-0.601 (-2.56)	-1.101 (-0.16)*	0.859	11.03	0.38	1.974
	D	0.504 (1.75)*	0.113 (0.94)*	0.006 (0.31)*	-0.899 (-6.17)	-0.307 (-1.53)*	1.491 (2.33)	2.586 (3.74)	0.643 (1.09)*	-	-	1.219 (1.80)	-	0.089 (0.75)*	-0.013 (-0.76)*	-0.219 (-1.63)	*	0.088 (0.50)*	-	0.888	17.50	0.55	1.562
	F	0.122 (0.13)*	-0.375 (-0.54)*	-0.002 (-0.15)*	-0.055 (-1.11)*	0.04 (-0.36)*	6.989 (3.56)	7.315 (4.97)	5.504 (3.07)	9.218 (4.96)	7.015 (3.75)	-0.545 (-0.01)*	62.03 (1.21)*	0.533 (1.12)*	-0.005 (-0.53)*	-0.016 (-0.39)	*	-0.115 (-0.99)*	51.63 (1.32)*	0.831	8.02	5.32	1.671
STPC	B	4.952 (1.07)*	-1.036 (-0.66)*	-0.013 (-0.39)*	0.394 (-0.82)*	-0.221 (-0.65)*	25.11 (4.10)	7.931 (3.19)	-18.91 (-1.33)*	10.84 (1.72)*	-	-13.78 (-1.69)*	-79.50 (-1.06)*	0.011 (0.01)*	-0.056 (-1.62)*	0.622 (1.74)	*	0.473 (1.17)*	25.81 (0.31)*	0.774	6.25	63.07	2.071
	N	1.641 (3.25)	-0.562 (-2.4)	-0.028 (-0.41)*	-0.236 (-0.64)*	-0.176 (-0.83)*	3.7 (2.89)	0.286 (0.24)*	0.274 (0.19)*	-	-	-1.186 (-0.46)*	-4.82 (-0.42)*	0.001 (0.01)*	-0.051 (-1.26)*	-0.161 (-0.43)	*	-0.971 (-0.85)*	-2.408 (-0.21)*	0.391	2.06	1.14	1.432
	D	0.322 (0.15)*	0.176 (1.58)*	0.002 (1.14)*	-0.787 (-5.03)	-0.625 (-3.58)	1.821 (2.99)	1.907 (3.12)	0.931 (1.45)*	-	-	0.761 (1.17)*	-	0.138 (1.17)*	-0.441 (-2.63)	0.814 (0.53)	*	0.117 (0.53)*	-	0.857	13.53	0.52	1.024
	F	2.009 (1.34)*	0.853 (-0.89)*	-0.021 (-1.20)*	0.016 (0.25)*	0.053 (0.38)*	5.679 (2.35)	5.198 (2.56)	6.254 (2.87)	8.205 (3.48)	4.588 (2.02)*	6.563 (0.88)*	33.81 (0.56)*	0.285 (0.45)*	-0.012 (-1.10)*	-0.003 (-0.05)	*	-0.079 (-0.47)*	68.13 (1.41)*	0.590	3.07	8.22	1.921
		Constant	$\widehat{PC}$	CA	RCU	T	DS1	DS2	DS3	DM	$\widehat{PC}$-1	CA-1	RCU-1										
ΔNDA1	B	-88.37 (-0.92)*	0.251 (1.24)*	-0.065 (-0.16)*	1.408 (0.99)*	0.781 (0.66)*	-18.41 (-1.87)	5.685 (0.55)*	14.36 (-1.41)*	-	-0.126 (-0.59)*	-0.031 (-0.04)*	-0.398 (-0.31)*							0.250	1.83	173.10	2.271
	N	3.025 (0.23)*	-0.648 (-2.41)	-1.163 (-3.97)	-0.05 (-0.25)*	0.342 (0.03)*	-0.436 (-0.44)*	0.813 (0.81)*	-2.581 (-2.38)*	-	-0.302 (-1.14)*	-0.007 (-0.01)*	0.026 (0.14)*							0.575	4.11	1.98	3.163
	D	3.077 (2.43)	-0.756 (-4.84)	-0.823 (-3.32)	-0.447 (-1.66)*	-0.010 (-0.29)*	-4.961 (-5.15)	-1.398 (-1.99)	-3.356 (-3.76)	-	-0.108 (-0.73)*	0.292 (0.96)*	0.475 (1.76)							0.652	5.68	1.45	2.042
	F	-77.94 (-0.99)*	0.540 (-0.99)*	0.350 (0.58)*	5.333 (3.72)	0.310 (0.46)*	-8.492 (-0.96)*	-0.531 (-0.07)*	-1.064 (-0.14)*	44.51 (3.94)	-0.179 (-0.26)*	0.307 (0.59)*	-4.427 (-3.01)							0.564	3.82	16.02	2.531
ΔNDA2	B	-88.74 (-1.04)*	0.061 (0.24)*	-0.077 (-0.15)*	0.641 (1.09)*	0.949 (1.26)*	-20.81 (-2.04)	2.947 (0.27)*	-13.52 (-1.29)*	-	-0.223 (-0.94)*	0.159 (0.30)*	-0.638 (-0.45)*							0.191	1.56	188.40	2.471
	N	3.618 (0.18)*	-0.295 (-0.68)*	-0.468 (-1.24)*	-0.09 (-0.36)	-0.041 (-0.2)*	0.381 (0.33)*	2.156 (1.98)	-2.581 (-2.21)	-	-0.324 (-0.62)*	0.312 (0.78)*	0.672 (0.29)*							0.332	2.14	3.11	2.333
	D	1.883 (2.03)*	-0.643 (4.03)	-1.031 (-6.39)	-0.327 (-1.49)*	-0.013 (-0.43)*	-4.354 (-5.61)	-0.541 (0.92)*	-2.472 (-3.35)	-	-0.129 (-0.97)*	0.189 (0.79)*	0.439 (2.13)							0.777	9.71	0.92	2.281
	F	-61.31 (-0.81)*	0.644 (0.92)*	0.722 (1.25)*	5.662 (4.19)	0.278 (0.43)*	-6.421 (-0.75)*	-1.027 (-0.13)*	-1.572 (1.02)*	47.23 (4.49)*	-0.279 (-0.315)*	0.241 (0.45)*	-4.908 (-3.62)							0.594	4.19	149.20	2.482

1. See Footnotes of Table 5.15

5.17 Two Stage Least Squares Regression Analysis[1], Econometric Approach, Germany

Dep \ Ind	Constant	ΔIf	Δy	$\Delta\widehat{NDA}^*$	CA	DSP2	DSP3	DSP4	SD	ΔFP	ΔIf-1	Δy-1	$\Delta\widehat{NDA}$-1*	CA-1	ΔFP-1	$\bar{R}^2$	F	SE	DW
TPC1	0.417 (0.38)*	0.475 (0.79)*	-0.080 (-0.96)*	-0.260 (1.84)	-0.002 (-0.01)*	7.198 (3.35)	4.295 (2.36)	5.361 (2.74)	2.567 (1.07)*	15.69 (0.60)*						0.783	11.18	9.68	2.404
STPC1	0.599 (0.55)*	-0.038 (-0.07)*	0.082 (0.79)*	-0.376 (-1.95)	-0.451 (-2.65)	3.888 (1.66)*	3.221 (1.82)*	2.864 (1.49)*	1.326 (0.61)*	-18.15 (-0.79)*						0.718	7.78	8.44	2.521
TPC2	4.281 (4.76)	0.505 (1.38)*	0.241 (2.84)	-0.196 (-5.84)	0.095 (0.51)	-1.467 (0.65)*	2.443 (2.17)	0.032 (0.02)*	-6.158 (-2.26)	-16.27 (-0.73)*	-0.344 (-0.89)*	-0.061 (-1.15)*	-0.0276 (-0.31)*	-1.555 (-4.11)	-13.95 (-0.78)*	0.931	23.01	3.27	1.933
STPC2	1.502 (1.74)*	0.396 (1.14)*	0.279 (3.95)	-0.517 (-3.22)	0.032 (0.23)*	1.424 (0.73)*	3.702 (3.51)	-2.661 (-1.79)*	-5.155 (-2.99)	-14.25 (-0.69)	-0.408 (-1.45)*	-0.004 (-0.08)*	0.044 (0.49)*	-0.893 (-5.71)	-21.28 (-1.38)*	0.911	17.71	2.77	1.892
	Constant	$\widehat{PC}$	CA	RCU	T	DS1	DS2	DS3	$\widehat{PC}$-1	CA-1	RCU-1					R^2	F	SE	DW
NDA1*	-22.62 (-0.57)*	-0.814 (-3.61)	0.022 (0.03)*	0.280 (0.69)*	0.260 (1.02)*	-11.57 (-3.13)	-1.912 (-0.58)*	-8.093 (-1.88)								0.655	7.77	32.67	3.021
NDA2*	-7.212 (-0.15)*	-0.783 (-2.93)	-0.509 (-1.12)*	0.146 (0.29)*	0.207 (0.74)*	-12.41 (-3.13)	-2.673 (-0.76)*	-10.82 (-2.73)								0.583	5.99	39.45	3.059
NDA3*	-43.64 (-0.96)*	-0.977 (-3.63)	-0.355 (-0.04)*	0.238 (0.22)*	0.396 (1.33)*	-6.942 (-1.30)*	1.469 (0.28)*	-5.312 (-0.83)*	-0.172 (-0.67)*	-0.982 (-1.35)*	0.257 (0.23)*					0.643	5.32	35.16	3.018
NDA4*	-39.91 (-0.66)*	-0.810 (-2.01)	-0.625 (-1.14)*	-0.463 (-0.43)*	0.341 (0.97)*	-12.91 (-2.45)	-5.361 (-1.0)*	-10.98 (-1.93)	0.103 (0.28)*	-0.173 (-0.32)*	-0.972 (-0.84)*					0.511	3.51	48.16	3.011

1. See Footnotes of Tables 5.11 and 5.15. $\Delta NDA1^*$ refers to TPC1, $\Delta NDA2^*$ refers to STPC1, $\Delta NDA3^*$ refers to TPC2 and $\Delta NDA4^*$ refers to STPC2.

Turning now to the two stage least squares analysis, here too, no meaningful results can be reached in the cases of Belgium and France. Results for the Netherlands, in the capital flow equation, reinforce those of the OLS(7).

Turning to the sterilization equation we obtain significant TPC coefficients. CA coefficients are significant also and looking at the standard error, they could be as small as -0.8 and -0.7. Both TPC and CA coefficients indicate that the Dutch authorities systematically pursued a policy of sterilization, in accordance with evidence in the sixties.

This approach, like the previous one, fails to give satisfactory answers under STPC. With respect to Denmark, the capital flow equation corresponds to that of the OLS approach, although - as for the Netherlands - coefficients are higher. From the sterilization equation one can derive a systematic policy of sterilization. This indication is provided by the TPC and CA coefficients which range from -0.69 to -0.76 and -0.82 to -0.85 respectively. It was explained above why authorities have probably embarked on such policies. The proxy for the domestic target of monetary policy - the rate of inflation in the absence of data on the rate of capacity utilisation (RCU) - was found significant in its lagged form, but with the wrong sign. Results improve under STPC. CA fluctuations seem to be offset by capital flows whose range varies between 47.7 to 62.5 percent. On the sterilization question, we cannot draw definite conclusions given the significant difference between STPC and CA. Eurodollar interest rates seem to be significant under this approach. There seems to be a clear trend in ΔNDA.

Results for Germany do not seem to differ significantly from the OLS ones, although Δy seems to be significant here with the right sign in the equation that incorporated lagged

adjustment.

With respect to the sterilization equation, given that the CA coefficient is either insignificant or has the wrong sign, no definite conclusions can be drawn. We referred above to the possibility of sterilization policies in Germany. A surprising result seems to be the insignificance of the RCU variable at a moment where authorities tried primarily to protect their domestic aims and especially income and inflation fluctuations. However, one has to analyse the RCU. Rises in RCU in excess of its equilibrium value lead to monetary policy tightening, that would in turn lead to capital inflows and the authorities would perhaps sterilize to avoid liquidity effects, with further implications on reserve stability. It seems questionable though, if this is the proper variable to be used for Germany(8). During the period under review, RCU was at low levels and falling. Theory would suggest the opposite sequence of events from those described above. However, authorities were more determined to fight inflation than unemployment. Huge capital inflows resulted out of revaluation expectations. Inflation control led to interest rate rises and avoidance of reflation to eliminate XB surpluses. Better results are obtained for STPC under the 2SLS approach. Significant and right sign ΔNDA^* and CA coefficients range from -0.37 to -0.52. The insignificance of the speculation dummies comes as a surprise. With respect to the sterilization equation the same comments apply as under TPC.

Generally, with respect to the econometric analysis employed, while the two forms produced in certain cases different results on the importance of certain variables, they do not seem to produce different answers on the key question of sterilization. The 2SLS approach though, reinforces the OLS findings and comes

up with more definite results. It also improves results under STPC.

Similarity which by and large exists between the results of the two forms, would indicate the importance of discretionary changes in central bank policies.

Indications of systematic sterilization policies come as a surprise for the SSC at a moment where it has been frequently claimed that they tried to preserve orderly markets. Even if, as it has been asserted, they behaved properly during crisis periods, the carrying out of such operations must have contributed to the build up of exchange rate crises. Results above suggest that more analysis is required to establish widely acceptable conclusions. More proper explanatory variables are required to enhance the fit of most of the equations. The behaviour of each central bank has to be analysed in more depth. The econometric estimation of a complete model would certainly be more revealing although it entails difficulties, see appendix II. Such models would also have to be constructed in a multicountry framework, so that more correct offset coefficients will be obtained.

Our results above indicate that sterilization has been carried out by more than one country. It is not that just one member sterilizes and others accept the adjustment consequences. Instability in reserve flows follows when the adjustment burden cannot be shifted to non-sterilizing members, and policy conflicts arise. The fixed exchange rate system becomes unstable, although, as evidence suggests, sterilization operations initiated by SSC - while they could have considerable effects for the country itself - have rather smaller effects on its partners, creating problems only if such policy continues for a longer time period.

Further, it does not mean that when one country - especially a major one - sterilizes and others accept the adjustment implications, much exchange rate instability can be avoided and that such a system could continue. It could be that other members do not want to adjust further, after a certain point, due to IB consequences. A country cannot maintain indefinitely free and unencumbered transactions with its neighbours at a fixed exchange rate, while at the same time pursuing domestic objectives differing from those of its neighbours. If German policy makers had chosen to adjust to the external imbalance while maintaining fixed exchange rates, it would have been necessary to submit to the external inflationary pressures and give up sterilization policy and the domestic objectives that they protected. Instead, when confronted with the enormous speculative flows which were the ultimate consequences of this contradiction between internal goals and external pressures for adjustment, Germany chose to give up fixed exchange rates rather than abandon its domestic objectives. The price paid was in terms of mounting external imbalances accompanied by an increasing instability of its foreign reserves and consequent strain in its relations with other countries.

5.C.f. General Conclusions from Policy Coordination

We analysed above the evolution of the objectives and policies of the EEC members. These countries did not follow a common path. Economic divergence meant divergence in the evolution of their currencies, accentuated by third-currency crises and other shocks, most of which resulted in exchange rate adjustment expectations and substantial capital movements flowing, unfortunately, disproportionately within the EEC members. This divergence continued in the absence of corrective action. The Snake was a one to one relationship and led, under

the circumstances, to three major currencies leaving it since they could not bring their economies into the German path, while Germany refused to reflate. Small, very open economies, depending heavily on Germany, stayed in it. Their economic performance though was not as good as that of Germany. While the exchange rate evolution would seem to reflect the economic situation of each EEC member, a larger fluctuation would be expected for the currencies of the SSC. For example, prices in Belgium rose by 36 percent between mid-1974 to February 1978 whereas in Germany by only 17 percent. Yet during that period the DM had been revalued by only 2 percent against the BFr. SSC tried to avoid undesirable currency depreciation effects. Some of them though did not avoid frequent and on certain occasions large devaluations against the DM. For various reasons, see p 124, they managed to stay in the Snake. However, although their divergences were not as great as those of major independently floating members, they nevertheless built up slowly and finally created more problems, see chapter six.

Further, sterilization policies within the Snake contributed to exchange rate instability. Under the coordination strategy, an MU comes out of policy coordination among members. No such conclusion could perhaps be justified here even with respect to the members that remained within the Snake.

Given the necessity of coordination, it also became evident that a considerable amount of analytical work had to be undertaken in the Community for exchange rate fixity to come about. No significant progress has been achieved in this field.

5.D.a. Financial Market Integration

Further progress on capital mobility became slow. Decisions taken, see C. Johnson (1979, p 3), would take rather a long time to implement in detail. In some areas capital flow

controls have been increased, see McKenzie (1976, pp115-7), slowing down the pace towards capital liberalisation, starting with the considerable exchange rate instability during the 1970-73 period, and intensified by the EEC enlargement. Also, forms of dual exchange markets were operating in six of the members - BLEU since 1955, France since 1971, Italy since January 1973, the UK since 1947, Holland since 1971. This system means mainly that all current account transactions are put in the "official" market and those of capital account on the "free" market. The official rate can be pegged or floating, while the free rate is floating. The purpose is to maintain stable exchange rates for commercial transactions and also relieve authorities from speculative pressure and uncertainty imposed on monetary policy by capital flows under fixed exchange rates. The main precondition for this qualitative control system to operate, is that the links between the two markets and the possibility of foreign exchange holders to move from one market to the other, are brought down to a minimum. The advantages and the degree of effectiveness of such system have been analysed, see Fleming (1973, pp 143-4), Magnifico (1973, pp 155-6). In the BLEU the pre-1971 DEM was one of imperfect market dichotomy. A major reseparation occurred in May 1971 when the BFr became a strong currency and the DEM apart from preventing a reserve drain was charged now with preventing a reserve rising out of capital flows. An analysis of the Belgian DEM is provided by Boll (1977a), (1978). He concludes that the effectiveness of this system at a moment where there were not serious problems of evasions, uncontrollability and authenticity of transactions was higher in stemming outflows than inflows. There still existed links between the two rates and additional links via direct and indirect intervention in

both the free and official spot market. At the time of heavy speculation in favour of BFr there existed small free premia and hence the DEM was ineffective in stemming capital inflows and reserve accumulation. In practice the difference between the official and the free rate was almost always very small.

France and Italy introduced similar versions, while the Netherlands introduced a system to discourage inflows. Italy accepted them at a moment of rising interest rates in Europe, when arbitrage outflows were added to speculative ones putting unsustainable reserve strains. It had few choices, since it desperately needed to restimulate economic activity. In all three countries these measures were not effective and were abolished before long, see Tsoukalis (1977, pp 133-6). In the UK controls initially aimed at restricting portfolio investment outflows. By 1974 all direct investment was made conditional on finance by foreign borrowing. While the argument for putting on controls was to ease XB problems, experience shows that controls changed little from one crisis to the other, see Cairncross (1973). Authorities were looking to secure capital for domestic investment. Such controls were effective only on limiting portfolio investment overseas. In so far as they were used to permit or encourage foreign borrowing they were reinforcing economic incentives, although the more expensive it became to borrow the greater was the likelihood of a larger reflection on the XB.

From the MU point, these controls during these turbulent years, implied that capital transactions between EEC members were either prohibited or subject to a strict control system. The Commission proposed a common external controls policy in order to secure intra EEC capital freedom. Instead, each member chose its own system, applying controls to both EEC members

and third countries. Even under this system exchange rate stability was not achieved within the EEC. Controls were tending towards reinforcement rather than dismantling, meaning failure of convertibility. The process towards an MU was negative.

Fixed exchange rates led to control intensification, see Morsberger (1977, p 31), within the European currency bloc, throwing a significant light on the assertion that parity fixing in the Snake acted as a stabiliser and thus encouraged European integration. Capital controls are not usually regarded as measures to encourage integration. When Germany lifted its controls in January 1974, pressure was put on the FrFr and France finally left the Snake.

New restrictions were imposed by Italy in May 1976 and by the UK in August 1976. In December 1977 Germany also imposed new measures on inflows. Even at the end of 1978 the prospects of removing such controls were remote. Five members - UK, Ireland, France, Italy, Denmark - had controls on limiting capital outflows. Those were countries in external deficits. Members had not decided yet on a ring fence of controls in the EEC in the way a common external tariff exists. Some of them had no controls on third countries and would be reluctant to impose such measures, at a moment where other members could not do without them. Permitting free flows to other members would mean permitting free flows to non-EEC countries as well.

The Eurocurrency market, as it was analysed in chapter two, was a retarding factor on control dismantling. Members had no particular incentive to press for greater freedom of national currency flows. Further, such market by enhancing US monetary policy effects in Europe, given the different performance of European currencies, further contributed to the prevalence and

control intensification among members.

Currency convertibility, a necessary MU ingredient, comes after exchange rate stability has been achieved inside Europe. Countries do not need controls to defend their exchange rates which would be unlikely to come under pressure with respect to their fixed relations. Policy coordination has then to be achieved to make intra-EEC parities durable. Speculative flows among members will be reduced and controls among members will be relaxed with equinimity. Unfortunately coordination did not come in Europe, exchange rate crises took place and members tried to preserve stability by abandonning convertibility, in their fear of undesirable IB and XB effects. To the extent that exchange rate instability was stemming from XB problems, imposition of controls to stop exchange rate fluctuations had the undesirable effect of delaying exchange rate adjustment.

Capital controls remained for various reasons and countries varied them according to their XB, economic activity and structural problem requirements rather than as a structural shift towards a more permanent MU. They slowed down the process towards MU. Countries, by using them, and to the extent that they were effective, avoided corrective measures in their economies. The coordination process was impaired. Like the first, the second EEC enlargement could make free capital mobility more difficult given the problems of the new participants.

Coming now to measure financial market integration C. Johnson (1979) uses non-monetary flows, as measured by the intra-EEC flows as a percentage of worldwide flows - for each country. Our estimates - see Table 2.7, p 39 - indicate that small countries score highly, while for large ones there

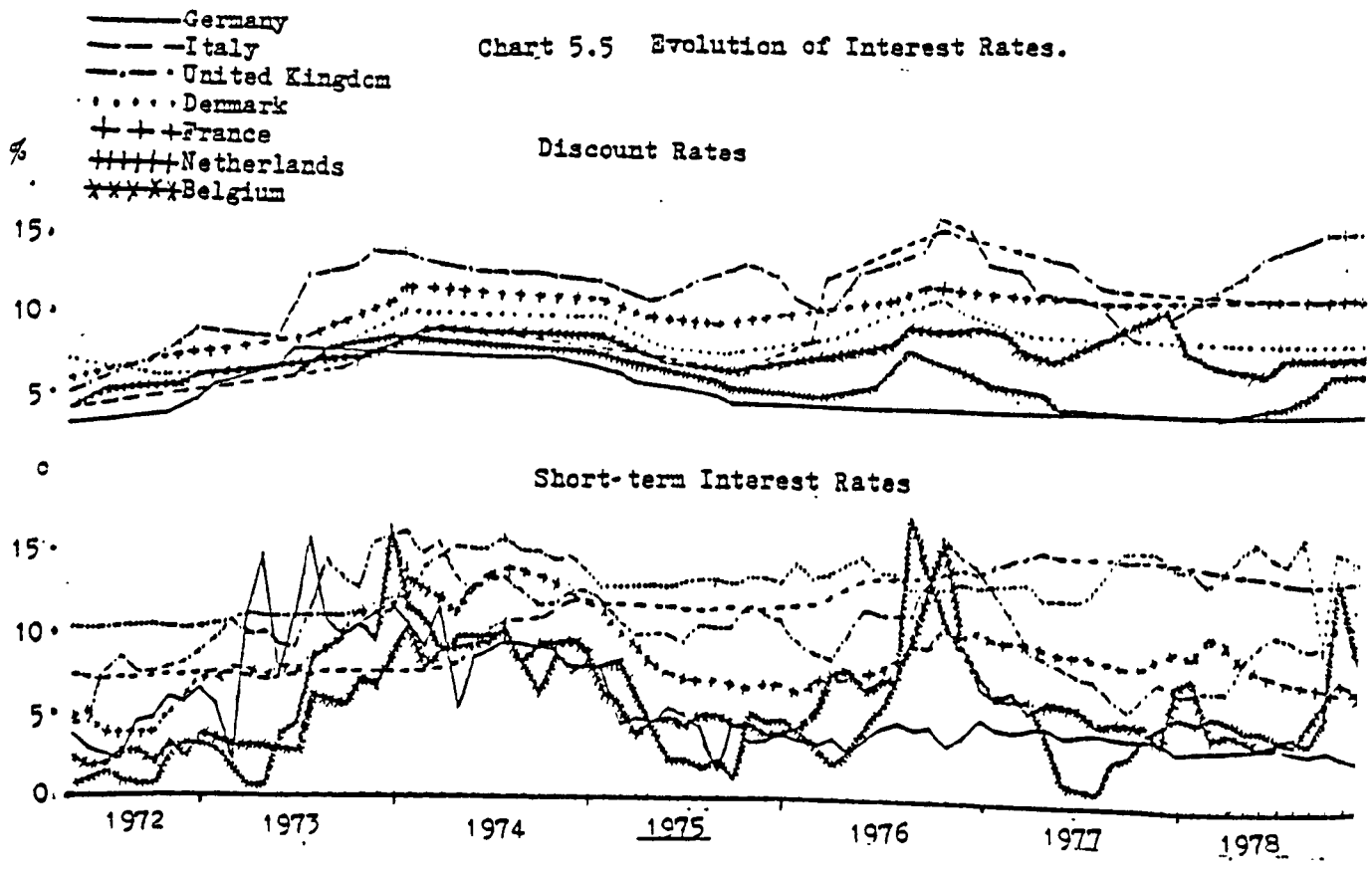
appears to be an inverse relation between trade and financial market integration. However, this may not be sufficient to prove a trend towards more perfect integration of financial markets at this period of enormous capital movements growth. Growth in the sixties was largely an adaptation of US controls which sought, although with limited success, to separate national capital markets. Although the US abolished controls in 1974, many EEC countries erected new ones continuing even to the present day.

Logue, Salant and Sweeney (1976) among the alternative concepts of financial market integration which they analyse, suggest one which focuses on the relationship between interest rates in various countries. Studies on this alternative focus into two broad categories. Firstly, those which examine levels of interest rates in groups of countries - the less the divergence among them, the greater will be the degree of integration - and secondly, those concerned with the testing of the interest parity theory.

The question is whether there has been a trend towards closer financial market integration among the EEC members. Kenen (1976) suggests that although national interest rate differences should not be used to measure the degree of integration at a point in time, they can be used to trace out short-term changes in the degree of integration. They should be used with caution however because the dispersion of national interest rates has many causes. A number of studies have been undertaken for the sixties and early seventies. Argy and Hodjera (1973) find no evidence of a continuing decline in the dispersion of interest rate movements, while Hawkins (1972) concludes that the tendency for differentials to narrow between members' interest rates was not strong, irreversible or even

sustained over the integration period. Cooper (1971) draws similar conclusions. Despite the growth of capital movements and the development of large non-national markets, the integration process slowed down. Our analysis below, for the 1972-78 period, see chart 5.5, indicates that initially money call rates evolved more or less similarly for all members. The similar trend and the closing in dispersion seems to break after 1975:2. If one is to exclude Italy and Denmark[9] where government bond rates are used, the situation improved for the rest of the members after 1977 I, although a divergence has occurred since the end of 1978 I. There are similarities between certain subgroups - Benelux rates, Benelux and German rates, French and British rates, although French rates are closer to the Benelux and German ones. Markets moved towards closer financial market integration during the 1973:5 to 1975:2 period and, when Italy and Denmark are excluded, during the 1977:4 to 1978:4 period. A sustained irreversibility of the integration process did not seem to have been established even during the seventies.

Chart 5.5 Evolution of Interest Rates.



Marston (1976) has analysed the interest arbitrage on the Eurocurrency markets, suggesting that the interest parity holds quite well for short-term maturities, in a market generally free of official restrictions on short-term capital flows, largely unaffected by the risks involved in shifting funds between markets. Each non-dollar Eurocurrency rate is linked to the rate of the dominant Eurodollar market through arbitrage operations undertaken by the Eurocurrency banks.

However, when considering national markets things do not seem equally satisfactory. Looking at chart 5.3, the interest parity does not seem to perform as well when tested against domestic interest rates. Deviations between the covered domestic rate and the Eurodollar rate increase dramatically for certain periods, mostly during speculative episodes. Certain deviations remained for long periods, more marked in the case of some currencies. Further, the fact that there was no close adherence to the interest parity for the 1972-78 period is also verified by the estimations of the equations for the money call rates, table 5.18, based on the form:

$$i_x = a_0 + a_1 i_e - a_2 FP_x + u$$

where i_x is the money call rate of country x, i_e is the Eurodollar rate, FP is the forward premium of currency x and u is the error term.

The money call rate of a country is related to the Eurodollar rate and the forward premium of that currency by the relationship[10].

$$i_x = i_e - FP_x$$

If arbitrage dominates the determination of money call rates, then the interest parity relation will hold and the coefficients a_1, a_2 will equal unity and the intercept a_0 will be zero. From theory we know that when interest parity holds

Table 5.18 Money Call Rate Equations: Monthly Estimations

Germany							
Year	Constant	i_e	FP	$\bar{R}^2$	F	SE	DW
1972 (4-12)	-11.08 (-2.90)	3.041 (4.49)	-0.486 (-2.56)	0.772	14.520	0.575	2.372
1973	-0.437 (-0.61)*	1.172 (1.63)*	-0.084 (-0.23)*	0.123	1.771	12.17	1.993
1974	3.161 (0.48)*	0.568 (0.90)*	0.517 (-1.15)*	-0.051	0.721	2.497	2.271
1975	-2.531 (-0.78)*	1.126 (2.41)	-0.510 (-3.37)	0.533	7.279	0.913	2.912
1976	3.467 (0.89)*	0.835 (0.12)*	-0.056 (-0.34)*	-0.207	0.059	0.467	1.132
1977	4.386 (8.21)	0.519 (0.48)*	-0.278 (-4.35)	0.889	45.14	0.015	2.364
1978	3.652 (5.56)	0.053 (0.31)*	-0.134 (-0.81)*	0.128	1.809	0.059	2.321

Netherlands							
Year	Constant	i_e	FP	$\bar{R}^2$	F	SE	DW
1972 (4-12)	-7.052 (-1.20)*	1.785 (1.60)*	-0.281 (-1.57)*	0.146	1.692	1.209	1.202
1973	-1.803 (-0.46)*	1.141 (2.91)	-1.096 (-5.50)	0.887	44.43	2.761	2.259
1974	10.28 (4.16)	-0.040 (-0.18)*	-0.532 (-2.90)	0.450	5.501	1.275	1.768
1975	0.807 (0.23)*	0.758 (1.56)*	-1.209 (-6.20)	0.815	25.19	0.939	2.441
1976	23.71 (3.13)	-3.320 (-2.44)	-1.201 (-10.82)*	0.913	58.70	1.916	2.652
1977	3.356 (0.66)*	0.139 (0.16)*	-0.442 (-1.08)*	-0.071	0.641	4.551	0.612
1978	-4.831 (-0.92)*	1.350 (2.79)	-0.327 (-0.42)*	0.429	5.142	5.491	2.071

France							
Year	Constant	i_e	FP	$\bar{R}^2$	F	SE	DW
1972 (4-12)	-2.351 (-0.48)*	1.274 (1.44)*	-0.405 (-2.01)	0.411	3.791	0.951	1.762
1973	1.088 (0.76)*	0.855 (5.57)	-0.481 (-4.07)	0.782	20.74	0.638	1.693
1974	6.862 (7.01)	0.461 (6.10)	-0.377 (-4.19)	0.769	19.32	0.125	1.941
1975	-1.556 (-0.44)*	1.428 (2.87)	0.644 (2.04)	0.538	7.412	1.041	0.659
1976	5.892 (2.59)	-0.214 (-0.06)*	-0.858 (-12.12)	0.945	97.18	0.121	2.457
1977	12.11 (11.52)	-0.535 (-2.88)	-0.079 (-0.98)*	0.371	4.251	0.198	0.851
1978	13.44 (6.55)	-0.626 (-2.67)	0.016 (0.17)*	0.558	7.942	0.611	0.809

Belgium							
Year	Constant	i_e	FP	$\bar{R}^2$	F	SE	DW
1972 (4-12)	-4.598 (-1.93)*	1.304 (3.08)	-0.075 (-0.51)*	0.534	5.581	0.213	2.831
1973	-3.061 (-1.60)*	0.947 (4.56)	-0.254 (-1.88)*	0.646	11.03	1.159	1.109
1974	5.442 (6.34)	0.339 (4.83)	-0.221 (-0.51)*	0.712	14.61	0.105	2.001
1975	-1.094 (-0.56)*	0.805 (2.83)	-0.166 (-1.31)*	0.578	0.239	0.272	1.248
1976	6.033 (0.37)*	0.482 (0.20)*	0.314 (2.99)	0.397	4.621	5.821	1.667
1977	8.409 (4.21)	-0.526 (-1.60)*	-0.234 (-1.86)*	0.268	3.011	0.799	2.171
1978	1.322 (0.57)*	0.494 (1.95)	-0.244 (-1.32)*	0.275	3.091	1.739	2.141

UK							
Year	Constant	i_e	FP	$\bar{R}^2$	F	SE	DW
1972 (4-12)	-1.996 (-1.71)*	1.256 (5.55)	-0.986 (-13.6)	0.982	196.30	0.481	3.321
1973	1.781 (1.47)*	0.556 (3.79)	-1.314 (-8.52)	0.931	75.690	0.462	2.792
1974	6.252 (1.10)*	0.391 (0.94)*	-0.535 (-2.42)	0.515	6.852	0.996	0.664
1975	5.269 (2.82)	0.762 (2.97)	-0.050 (-0.03)*	0.392	4.541	0.277	0.643
1976	7.881 (0.52)*	-0.374 (-0.14)*	-0.828 (-3.47)	0.504	6.583	6.931	2.921
1977	7.362 (1.70)*	-0.145 (-0.22)*	-0.566 (-3.51)	0.816	25.390	0.856	1.292
1978	-0.806 (-0.79)*	1.077 (9.23)	-0.487 (-3.37)	0.907	54.610	0.361	2.091

Data used from: IFS, Bank of England Quarterly Bulletin, Bundesbank Monthly Report, OECD Main Economic Indicators.

between two countries, that is in equilibrium, the yields to investors in both countries from holding assets in either currency are the same after adjustment for the forward cover. Uncovered interest rate differentials will approximate the forward premium or discount between the two exchange rates avoiding profitable arbitrage operations.(11) Interest parity holding indicates market integration. Arbitrage would result in unifying the European money markets so that supply and demand pressures in any member market are spread throughout other national markets. Fund transfers that will take place from one national financial centre to the other will in due time establish interest parity. Domestic arbitrageurs, by responding to profit opportunities, bring equilibrium. On frequent occasions though, that does not seem to have occurred among members. Interest parity did not hold, meaning profit opportunities, and domestic arbitrageurs were prevented from responding to such opportunities. The ability or willingness of wealth holders to acquire and deal in claims on foreigners can be influenced by a number of factors ranging from restrictions found in any list of capital controls, and government powers to tax to the costs of buying knowledge and from the risks of acting with incomplete knowledge. Arbitrage among national money markets is not as free as it is within the Euro-currency system. We have already elaborated on the existing controls, as well as on the risks of the period under concern. There is also the risk of controls being imposed on the centre where funds are invested. It is generally acknowledged that exchange controls in the UK, Italy and the Belgian DEM prevented domestic arbitrageurs from responding to apparent profit opportunities. In this sense, controls have contributed to slowing down the financial market integration process

among the member countries(12).

5.E.a. Regional Policy

We have already referred to the cases where an effective regional policy is required within the MI process, see chapter one, p 13, and chapter two, p 51. Countries like Italy, the UK and Ireland relied a great deal on such policies. All of them, including France when it left the Snake in 1974, used the lack of effectiveness on these policies as an important reason for their early departure from the Snake. The Council of Ministers created the European Development Fund in March 1975 after recommendations of the Thomson report (1973) on the need to ease regional disparities. It was alloted UA1.3b for a three year trial period. The question is how effective such a policy was up to the end of 1978. It moved slowly. There was hardly any indication that the economic gap between poor and rich regions had narrowed. The Commission rates as a success that subsidies and infrastructure projects preserved 185000 jobs. It admits however, that the EEC has hardly changed any of its regional imbalances. The overall EEC growth should be taken into account since it eliminated hope pinned on the EDF. Only an above average growth rate in the problem areas would have narrowed the gap. There was a lack of a policy oriented by European yardsticks and criteria. The EDF finances only projects selected by member governments, subsidised within the framework of fixed national quotas. Priorities assigned in various capitals are based on criteria other than European. No government allows the Commission to interfere in its domestic policy. There were no strings attached in practice. It is not certain that these subsidies contribute towards the development of regions and supplement national efforts. At present members' budgets do not even itemise Fund contributions.

An encouraging evolution towards a more genuine policy was the agreement, after Italian pressure, that 5 percent of the EDF - UA80.0b by 1980 - would be assigned without regard to national quotas. Although it is in the right direction it is far too little to be sufficiently effective in view of enormous regional problems. Moreover the amount of the EDF is too small to permit more than moderate success in fighting unemployment. Its main disadvantages with respect to redistribution among regions are the lack of resources, constraints imposed by national quotas and a prejudice against poor nations by those who have to pay, see Dosser (1978), (1979). Changes are needed such as arrangements analysing and assessing all regional economies and detailed information on changes in important parameters, facilitating diagnosis on regional problems. Indeed in June, 26-7, 1978 the Council of Ministers approved the Commission's proposal on such a comprehensive system of analysis and also on the assessment of the regional impact of other Community policies and the coordination of national regional policies.

The EDF could create ventures to restrain redundant workers in depressed regions financed from schemes such as pay roll taxes on firms of prosperous sectors. They met opposition by objecting to higher VAT rates, while at a time where higher business investment is the objective, higher business taxation does not seem likely. The alternative of EEC schemes replacing regional and unemployment benefits runs into equally difficult obstacles of surrender of member state sovereignty. Members during the period concerned were on frequent occasions outbidding each other to attract investment. The Commission tried to ensure similar aid to similar regions and create new profitable industries. It had a certain degree of success in

making members adjust their policies on EEC rules[13]. However, such rules to coordinate for an efficient resource use can do little because the Commission has very little leeway from national authorities. It still has to foster the adjustment process, without which uncompetitive industries would be kept artificially alive. A retreat to protectionism and re-emergence of barriers would then be unavoidable. Industrial workers should be re-absorbed in the economic system. Investment credits will be needed to finance the creation of new jobs where structural change is taking place.

The McDougal report (1977) argued for substantial budgetary transfers to reduce income differences and make up for trade deficits in weaker regions, reducing deflationary impacts. Several criticisms have been raised with respect to the proposals in the MU concept - see chapter two, p 51, also Dosser (1979). The Forté report (1979) was set up to examine some aspects of the McDougal report. While it shares many of the same criticisms, a good aspect is its insistence on using funds to promote convergence.

The Community budget is, among other things, to help ease these inequalities. But its current size means it is regarded as no more than a book-keeping operation. Any substantial expansion of the budget, allowing the development of non-agricultural policies like those of growth and progressive redistribution, would appear to be formidable - at least for the next few years. Various programs are all difficult to implement and a fundamental political shift would be needed, if it is to redistribute wealth successfully and assist in the achievement of macroeconomic goals for the EEC and its constituent parts. Member states are insisting on a "juste-retour" receiving as much from it as they pay in. Given the current impossibility

of increasing its size, substantial budget restructuring is needed. Its largest part - above 70 percent - is spent on the CAP. High support prices have been established creating surpluses on certain products. The CAP leaves only a small amount for regional policies while as the CAP support finance is continuously rising, this amount is getting progressively less. No doubt, if the current CAP continues the EEC will exhaust its resources, under the given budget arrangement and will not be able to fulfil even its CAP obligations, let alone those of other policies. Given that the circumstances that led to CAP creation in mid-sixties have now changed, it does seem that a reform is required based on supporting, at least from the EEC part, efficient farmers and reducing high support prices which are currently above world levels.

Further, not even "juste-retour" has been fulfilled since there are less prosperous members which have been net contributors for a long time. For a proper budget, functioning countries like the UK, Italy and Ireland should be net receivers for at least a number of years. The UK's large contribution is also greatly a result of historical trade links with the majority of imports coming from third countries and are subject to tariffs handed to the EEC. By raising its trade with the EEC its net contribution would decline. But money has to flow in for redistributive purposes. Also under the MCA system due to sterling depreciation it had to pay large amounts to the EEC. The situation was reversed in 1979 with the sterling appreciation, although due to its small agricultural sector UK's contribution remained high. One should also keep in mind that MCAs were invented to maintain the CAP and insulate the agricultural sector from the consequences of exchange rate adjustments. It is however, overlooked that this puts the burden of adjustment

resulting from exchange rate changes on industry and that at the same time it reduces the effectiveness of exchange rate changes to equilibrate the XB.

5.F.a. National Interests versus Social Unity

Convergence rather than identity of reasons among members meant that the possibility of conflicts existed, risking EMU in the absence of solutions or compromises. Prior to 1972, national attitudes had been shown. Members faced the 1971 crisis disunited.

The Snake started functioning while coordination was absent. Members took measures suiting their national interests ignoring repercussions on EMU. Germany adopted deflationary policies and high interest rates aggravating outflows from Italy, which led to the imposition of a DEM in Italy to defend the Lira. Central banks complained that they had been forced to adjust to German interest levels in order to avoid outflows. When the Lira took a dramatic fall in the next six months, Italy was accused of trying to raise competitiveness through exchange rate changes, instead of domestic measures, a policy detrimental to EMU. Protectionism took place. Such measures were taken in Italy in 1974 and 1976, in France in 1975. France and the UK also took measures to protect their steel and textile industries. There was a lack of social unity prior to joint floating. Not all members were consulted on the choice between DEMs and joint floating. As a result the Dutch revalued consulting Belgium only. On certain occasions, members made unacceptable proposals to their partners in order to avoid participating in the joint float. There was opposition to Commission proposals for an increase in the monetary support mechanism, reserve pooling and the plan suggested to include all currencies after the second dollar devaluation. Italy and

the UK blocked decisions, being dis-satisfied with progress on regional policy. Members reacted and combined various issues together in a way serving their own interests instead of the Community ones. Germany and France demanded that the UK and Italy join the Snake so that they would agree on regional policy. Not even they themselves believed that this could be done given the problems of the two economies. Attitudes were an excuse for blocking issues. Germany asked for a common energy policy before agreeing on reserve pooling. France opposed it in the absence of solution on the gold problem.

Lack of coordination remained since members kept pursuing their own objectives. A turbulent world environment discouraged the Commission proposals. Large reserve holders did not want to give up something while taking nothing in return. Members were disunited under the energy crisis. Mistrust among members developed. When Italy asked to borrow $2.0 b from Germany for five years in 1974, Germany insisted on gold transfers as a collateral of the deal.

The UK disagreed over supporting the new account unit to reflect collective weakness or strength of the EEC currencies in August 1974, maintaining that it would be against UK interests when used for EEC budget calculations, since the old one over-valued Sterling.

The terrible lack of cohesion was emphasised by the Marjolin report (1975). It derived no progress in EMU. Monetary policies had never been more discordant and divergent in the last 25 years. The CAP was affected. Capital liberalisation was less than in the sixties. Considerable external imbalances made fixed exchange rates impossible, with protectionist threats. No progress on "European will" was generated but instead a display of a series of nationalist wills more or

less unaware of those of others, each one doing its best to make its own way out of trouble. National governments repeatedly blocked all proposals that did not suit their interests precisely. The economic situation was deteriorating. 1976 was a dramatic year for all EEC currencies. Countries controlling inflation wanted to avoid commitments with those fighting double-digit inflation rates, before the latter reduced them. Germany would not lend unless the borrower presented a series of deflationary policies at home. Aid, it was maintained, would raise imports and hence Germany's exports leading to inflation rises in Europe. They rejected the Commission's plan for a new EUA1.0 b loan facility to boost investment, in July 1977. They refused to reflate and were isolated by both their partners and the US, at a moment where EEC achieved a lower, instead of 4 percent planned, real income growth in 1977, and where trade continued declining during the 1976-77 period. Weak members did not want to bring price stability quickly, fearing an elimination of their chances to catch up economically with other countries. The world crisis also made each member try and recover by any means, not all of them compatible with EMU.

The EEC control body had not yet proved effective with their policies being blocked or vetoed. Measures against the EMU concept were taking place and the EMU plans were shelved.

More analysis on the Snake period follows in chapter six. Then general conclusions will be drawn.

CHAPTER SIX OTHER WEAKNESSES OF THE SNAKE AND GENERAL CONCLUSIONS

6.A.a. The Burden of Adjustment

Thygesen (1979) maintains that participation in the Snake resulted, for Germany, in more expansion and inflation due to delayed upward DM adjustment, real depreciation and intervention. One may doubt though whether Germany fulfilled its Snake obligations adequately. A country's currency appreciates continuously because its inflation rate is lower than elsewhere. Intervention would imply an upward inflation adjustment although much depends on intervention undertaken by other members. However, its inflation rate was declining faster than that of its partners, in a period of highly restrictive German policies. Further, the DM, being a major antipode to the dollar, underwent real appreciations since 1977 which could reduce Germany's surplus. However, it exerted deflationary effects, which helped to maintain the surplus, in the absence of adequate expansive policies. Also joint floating was based on German policy which reflected the view of more independent floating and less intervention. Its insistence on DM appreciation created strains among Germany's partners. Both Snake and non-Snake members and the Commission asked Germany to reflate, although in vain.

For small Snake countries having to keep up with the DM and appreciate with it meant a deflationary bias for them. There is evidence of real appreciation[1], see Table 6.1, for most of the period that members were inside the Snake, although not very large for the great part of time due to members' considerable economic openness. While this deflationary impact added to the problems of reconciling more satisfactory employment and XB, it is believed that the pressure for XB adjustment

Table 6.1 Effective Real Exchange Rate changes, percentage change from previous year

Currency / Year	BFr	DKr	DM	DG	NKr	SKr
1973	+5.2	+10.6	+8.9	+1.7	+5.8	+2.8
1974	+1.7	-1.6	-0.5	-2.2	+8.2	+4.2
1975	-4.7	+1.3	-3.1	+0.8	-1.4	+3.2
1976	+1.9	+2.1	+1.6	+1.8	+1.4	+2.2
1977	+0.5	-2.1	+2.1	+3.7	-1.8	-3.8
1978	-2.4	-0.1	+1.4	-0.5	-7.9	-8.9

Relative wholesale prices used as deflator. (+ indicates real appreciation; - indicates real depreciation). Source: IFS.

has diminished. Further, exchange market nervousness was avoided through adequate intervention funds, avoiding also a deterioration in credit worthiness for certain members given their external deficits. At the same time authorities had the freedom to expand real demand higher than would otherwise have been feasible. Loss of output appeared unlikely due to Snake participation. The Snake also imposed precise and credible inflation targets. By having to set a target similar to that of the hegemonial country, given also the desire to reduce inflation and that Germany's inflation was the lowest, it benefited the SSC.

Firstly, one does not observe similar price discipline. It is not reinforced everywhere, judging from declining wages in Holland and, although to a lesser extent, in Belgium and rising wages in Denmark. Secondly, our main objection is on the long-run validity of the view that no deflationary bias existed in the SSC. Their task was to adjust and keep XE and exchange rate stability. Snake appreciation meant avoidance of deficits, implying deflationary effects. SSC incurred deficits. Their XB situation has been deteriorating since 1975. They did not

deflate though. Does it mean that they avoided XB adjustment? The XB situation of the Netherlands deteriorated dramatically since 1976. Nominal exchange rate appreciation was believed to have beneficial inflation and trade effects. However the economy was facing structural problems. By 1976 the surplus was falling and unemployment was rising dramatically. Growing fiscal expenditure and budget deficits were increasing consumption shares at the expense of productive investment. Gas revenues were diminishing. These factors reduced foreign confidence on the economy and led to capital outflows in recent years. The high PSD and the XB deficit would suggest the need for adjustment if Snake pressure was to be avoided. These weaknesses became apparent in 1978 III where the DG was devalued by 2 percent against the DM. Given the insistence of the authorities on avoiding devaluations, the seriousness of the situation can be detected.

The same comments apply for Belgium, except that its problems are even more intensive. Its industries could not attract fresh risk capital, while when in the absence of equity capital they were foced into debt financing, they met severe state competition and were squeezed. State spending was rising alarmingly. Borrowing resulted in significant interest rate increases affecting investment. Drastic deflation was needed to keep the franc in the Snake, avoided through substantial intervention. Continuous market pressure led to large outflows and devaluation which - like in the Netherlands - was too small to change things significantly. Falling franc confidence would have pushed the deficit higher, had the government not decided on borrowing from abroad for the first time in ten years. Such borrowing continued into the eighties. Intervention had not sufficient deflationary effects to stop the currency

pressure. A simultaneous wage increase and currency appreciation could squeeze profits in the traded sector, depending on what happens to domestic costs. Increases in the latter lead also to higher output prices in the non-traded sector. Relative price changes will re-allocate factors from the traded to the non-traded sector. The overvalued currency affects also the demand pattern, increasing the demand for tradeables and causing the current account to deteriorate. However, deflationary effects out of appreciation and external deficits and productivity rises out of rationalisation schemes work as a form of correction mechanism. The latter could be retarded or made impossible. An expansive fiscal policy for example, may prevent demand from declining thereby preventing the deficit from disappearing. Evidence from the Belgian case, see de Grauwe (1980), suggests that the relative price shock from rising wages and the appreciating currency had important implications. The strong decline in the relative price of tradeables contributed to the sharp decline of the rates of return in the industrial sector. Employment in industry declined significantly - the phenomenon of de-industrialisation. Despite significant productivity effects, franc overvaluation contributed to a continuing XB deterioration due mainly to rising state spending. It contributed directly to the external deficit and indirectly by maintaining inflationary conditions in the non-traded sector while the franc was appreciating. Budgetary policies prevented automatic XB adjustment triggered from an overvalued currency. Also price discipline out of appreciation was far from exemplary. While industrial prices were reduced much less was done to reduce domestic costs. Budgetary policies added to domestic cost increases. Currency appreciation combined with government policies helped to create

a deflationary bias in Belgium. Further, the necessity to reduce the PSD,points to additional deflation required to stop currency pressure. Denmark was in an even more serious situation. It incurred dramatic external deficits. The foreign debt was tripled in two years, 1976-78. High interest payments were intolerable for such a small country. Its XB situation seems to be in accordance with the Krone's real appreciation or small depreciation, despite four devaluations since 1976 at a period where budget deficits, expansion and inflation were rising(2),(3).

All the above would lead to the question of how long could real adjustment required be avoided.. The view that no deflationary bias existed cannot be used as a dynamic argument for the future even for the SSC. The Snake period, especially since 1976 when the problems started, was too short to lead to conclusions on the absence of such bias given the size of SSC where they could afford more time before they adjust. It was doubted though if such policy could be continued under sustained pressure. Currency pressures continued in 1979 where the SSC devalued against the DM. Denmark, having the worst performance, undertook a 10 percent devaluation, despite significant discount rate rises. In November 1979 it announced an austerity package to cope with the rising external deficit. Its highly expansive fiscal policy had substantial inflationary pressures. The need to reduce PSD was recognised. Demand cuts in 1980 would reduce the GDP growth rate by 1.5 percent. Interest payments on foreign debt would reach half of the country's external deficit by 1980. Officials feared that the credit worthiness of the country was impaired. Finally, under the pressure of economic realities, Denmark curtailed this freedom.

Belgium's sustained lack of confidence continued in 1979 in

the absence of corrective adjustment. The franc remained almost always very weak. The external deficit continued. PSD cuts did not take place. The political environment did not assist in such changes.

SSC deviated from their policy of maintaining XE. However such policy does not lead to long-run stability. At some stage they have to apply real adjustment in order to stay inside the Snake. It is there that the problem of adjustment burden arises and the possibility of deflation even for the SSC, given Germany's insistence on restrictive policies.

Deflationary effects could also be due to interest rate increases. Some of these increases occurred because of the necessity of remaining inside the Snake. It could imply that the Snake exerted such a bias. Despite the debate on such effects, empirical studies confirm that they could have quite substantial effects upon investment, see Bain (1975, p 113). Monetary policy seems then to reinforce the effect of fiscal policy in shifting demand towards a composition unsustainable in the long-run. Growth is affected and an external deficit follows. Interest rate rises could also lead to currency appreciation and put another squeeze in industry. Or they could undermine the monetary restraint, create deficits, necessitate restrictive measures, due to a secondary crisis(4).

However, a general agreement exists that such an intervention policy could not continue if major currencies participated, especially after the relaxed attitude adopted where deficits persisted. Intervention would not be in such a modest form as it was with the SSC. They could also be reversible in view of realignments or following domestic measures. For major EEC members to participate they would have to achieve comparable XB situations, otherwise intervention could not save the Snake.

Deficits of the range of 4 percent of the GDP, as in Denmark, could not persist in the former. The key issue of symmetrical adjustment will reappear.

Advantages arising out of the Snake are the result of fundamental differences between a Snake anchored to the DM - although some of them might not be certain for the small size partners in the longer run - and those, far less positive, of the Snake as it functioned with major currencies. In the latter case instability has been important. The FrFr case indicated that France was not able to apply the necessary deflation for participation in the Snake. The Bundesbank acted analogously. Interventions inside the Snake were minor to those of third currencies or when the FrFr participated, except for the period prior to the October 1978 realignment. These forced Germany to change its attitude towards the Snake and EMU.

Spaventa (1979, pp 112-3) also suggests that Snake countries are far more homogeneous than they are with respect to other EEC members so that the ranking of policy objectives is more or less similar, avoiding tensions in the system.

6.A.b. Timely Parity Realignments

Early realignments were a result of considerable dollar instability. Then followed a period of almost three years without any realignment. It was an eventful period. Members diverged considerably, while market pressure was relatively low mainly due to DM weakness against the dollar. However the deterioration in competitiveness of certain members would suggest parity realignments. The situation was not the same though in 1976. Record intervention took place delaying realignments. At the end it was a futile effort, under the considerable national economic divergences. It was then decided that future realignments would be timely to avoid provoking speculative

pressure. It was doubtful if that would be the case, see Scharrer (1979), given that realignments require consent of all participants[5],[6]. The first three realignments avoided speculative pressure. That was not the case for the last one. The belief of timely realignment was not strongly established among members. The behaviour of the hegemonial country, imposing policies based on its national interests can be detected. The arguments on why realignments are delayed should be modified. A great deal depends on the highly independent policy of Germany.

It is believed that these realignments were small and devalued currencies appreciated against the DM after they took place. Speculative gains were not offered. Non-sterilization policies further decreased such gains. Realignments have been followed by a period of calm, reflows took place and intervention credits were reversed. Flexible intervention techniques have added to stability.

However certain realignments have not been small, see Appendix I. Speculative build ups have not been avoided. Confidence in certain currencies was not brought about, either because their size was small or because additional corrective action was absent. The case of the BFr and the DKr demonstrate that. Further, non-sterilization at the peak of a crisis does not mean that the absence of continuity in such rule does not contribute to market pressure. When the situation becomes dramatic members behave properly because they cannot consider any other alternative. Germany observed such rule in 1977/78 in its attempt to avoid reductions in its competitiveness. It would be beneficial for the MU if it was to be continued. Given Germany's paramount importance on inflation control though, it is doubted whether it would have allowed substantial

deviations had the exchange rate instrument not proved effective in checking inflation. Further non-sterilization may prove less effective under speculative inflows when interest rates, in the absence of controls, cannot fall below zero. Flows will continue on revaluation expectations. Flexible intervention techniques could create instability inside the Snake, see chapter five pp 148-50. Lastly, it was not the case where one currency appreciates (depreciates) against another. Most cases were more complex and, despite the consultation procedure, undisciplined intervention took place.

There is a debate on whether objective criteria are needed for a smooth adjustable peg functioning(7). They may be useful but they could reduce the credibility of the system if coordination is not coming. Realignments become frequent, although it would not seem to affect much the credibility of the Snake since 1976. Under the Snake envisaged in 1972 such criteria would seem to be needed with a strong commitment on coordination to make realignment less frequent, given the final objective of MU creation. Criteria were needed even when EMU plans were shelved, given the economic realities in Europe, the capital flows and the need for timely realignments. There was also the danger of avoiding realignments by imposing controls. The Netherlands' case demonstrates that. More flexibility in monetary policies would seem to be needed in order to avoid such movements.

Given the economic realities, more emphasis should be put on adjustment rather than on pegging, to avoid any presumption that a change will be associated with a discrete change in the market rate. A related question is whether realignments would be easier if they involved all EEC currencies. The n^{th} currency issue is involved here and dominant currency issues as

well as arguments about the efficient way for the adjustable peg to function, see Vaubel (1979, pp 16-7). The hegemonial currency in the Snake was the DM. Experience indicates though that no major country can adopt a policy unacceptable to other major members and still expect them not to leave the Snake. After 1975 the UK and France refused to join mainly due to the restrictive policies of Germany. When major countries are involved purely national policies must be avoided for a smooth adjustable peg functioning. Otherwise instability will be greater, as well as intervention and realignments. Heavy pressure would develop much earlier after each realignment. In chapter four we expressed preference for a crawling peg with a diminishing rate of crawl. Of course, under strong divergences, when all EEC members are included, even in this system large realignments are unavoidable.

6.A.c. Exchange Rate Policy towards Third Currencies

The Snake was criticised for focusing on a limited range of currencies. Stable exchange rates in it can be consistent with rapidly changing and different effective rates for the participants. Members subjected 50 percent or less of their exchange rate relationship to the adjustable peg leaving the rest to floating. If the Snake comprised of all EEC members it would raise the peg's relative importance, see Commission's figures (1976).

EEC exchange rate arrangements fell short of assuring participants effective exchange rate control. The danger was that if they conformed to the average price performance in the EEC and did not change their EEC parities, their global competitiveness would not develop parallel to those of other members, due to varying importance of the individually floating currencies and notably the dollar. It was used as a strong

argument for the UK, see Richardson (1979).

The Commission's general guidelines offered no safe solution. Failure to agree on a dollar policy has been considered as an important weakness of the Snake at a time where an effort on both sides of the Atlantic was required to restore stability. Absence of dollar policy could increase tensions inside the Snake. How the dollar should be managed was important to Europe because of the way the IMS developed. The Lira crisis in 1973 provides one of the many examples. Recurrent dollar crises undermined Snake stability. Erratic dollar movements contributed to overshooting among European currencies. Lamfalussi (1979) explains why financial markets are more important in determining the dollar rate, affecting other reserve currencies. In the DM case, volatility is implied among the Snake currencies, with undesirable implications. The Commission blamed the dollar decline which impaired economic activity in Europe particularly in 1977, impeding recovery and jeopardising EMU(8). Inflationary pressures arising out of capital flows led members to abandon non-sterilization rules. Dollar intervention and the national mixtures of motives about the exchange rate further aggravated instability under an unstable dollar.

Joint attempts were undertaken only twice throughout the period, when dollar pressure resulted in dramatic currency fluctuations in July 1973, see Solomon (1977, pp 276-9) and in 1975 after a further severe dollar drop. Record swap arrangements were agreed in the first case, while in the second case members agreed to limit the daily dollar movements of all currencies to 0.75-1 percent except in cases of underlying market trend. The latter never became operational. Nothing was done during the 1976 EEC currency crisis which had a

strong impact on their effective rates as well as during the 1977 dollar crisis. No action was taken despite the prevailing view of excessive currency fluctuations.

Inability for a joint policy vis-a-vis third currencies was the main factor behind new proposals for a more broadly based exchange rate system in the EEC. Those were the Fourcade plan and the Duisenberg plan, see Thygesen (1979) and Oort (1977), and the Commission's plan in 1977 based on a modified version of the Duisenberg plan. They were given little attention. Weak members with accelerating inflation refused to undertake even a modified commitment to their exchange rate behaviour. Strong ones feared conflicts with the Snake rules and price instability. They were accused by weak members of creating a two-tier Europe. European countries were not politically prepared while the dollar trouble started again.(9) World inflation in recent years should have strengthened members' willingness to undertake stability actions. It was only in mid-1978 when dollar fluctuations contributed to sizable exchange rate changes and the EEC seemed to be pushed into a more inward looking behaviour, that new attempts to link all EEC currencies, politically backed, were agreed.(10)

It seems that given the 1976 crisis, Europe needed the target zones solution proposed in the Duisenberg plan. Wide swings on cross rates were threatening EEC cohesion. Countries would be able to determine their effective rate evolution within a target zone with no positive obligation to defend this zone, but they should not take action to move away from it. However, after the initial stages, they should try to remove the causes of economic divergence more firmly. The target zones proposal has this dynamic potential in the direction of coordination. Members would still control their effective

rates within the zone.

Conflicts with the adherence to nominal bilateral limits could be created though. The political commitment was still on Snake survival which was necessary to break the vicious circle. Members then should, after a certain stage, assume stricter coordination commitments which would lead them to join the Snake. While things did not develop in this way the nominal fixity commitment remained. The possibility to lose competitiveness control remained although a difficult task, the evolution of the currency bloc was important. Complete symmetry may not be achieved given the different preferences on dollar evolution of each participant. Attention should be paid to the empirical findings of the OPTICA Report (1975). It derives a strong link of a PPP rule based on effective rates. It could achieve symmetry although it could create problems on bilateral fixing. However, inflation rate reduction could do a lot to make members' competitiveness evolve in a similar way. At the same time, while the bilateral exchange rates are in operation it should be made sure that the weighted average of the currencies in the bloc conform to the PPP rule. Stronger pressure for policy coordination will be induced too. Significant fluctuations of the bloc against the dollar should be avoided for all members to participate. Certain members use appreciations to check inflation. New members are added to this policy. It will be seen below why such a policy does not promote world stability. Further, the rise in intra-EEC trade relations could greatly assist in making the joint policy successful.

A successfully functioning EEC bloc suggests that a framework is built up within which monetary turbulence can be effectively contained. It would seem though that despite

such stability it may be difficult for Europe to be successfully insulated on certain occasions. Experience demonstrates that EEC exchange rate stability may not be achieved or be long lasting in the absence of world wide stability. It would seem that global action is required to bring with it a stable IMS. By the end of 1978 there were some encouraging signs as will be seen from the analysis that follows.

6.B.a. The International Monetary System during the Snake Period

The switch to floating is explained by the need to restore (a) short-run effectiveness of monetary stabilisation policy and, (b) mitigate the impact of external disturbances at home. Peeters (1977) explains why high capital mobility makes domestic interest rates equal world rates augmented by exchange rate expectations. With respect to insulation Cooper (1976, pp 159-60) suggests that it all depends on the nature of the disturbance. Further, there are reasons which make difficult the use of econometric models to check for the degree of effectiveness of floating, see Lamfalussi (1979, p 45), Swoboda (1979, pp 80-1), Machlup (1979, p 71). Floating rates seem nevertheless to provide an incomplete insulation for real external disturbances. An open economy is open, no matter what the exchange regime is. But flexible rates do permit different long-term inflation rates. The IMF reports (1976) (1977) stated that it is real exchange rates that matter for XB adjustment. Exchange rate effectiveness was impaired by the lack of appropriate accompanying domestic policies. The 1979 report stated that economic and financial conditions in recent years contributed to a remarked exchange rate variation which contributed to adjustment stressing also the importance of supporting domestic policies. Lamfalussi's study (1979)

points to such adjustment for deficit countries. No such adjustment occurred though in surplus countries where appreciation went hand in hand with surpluses. The deflationary effects of appreciation, which in the absence of domestic expansive policies keep the surpluses, should be kept in mind. The situation moved more toward equilibrium in 1979. However, domestic economic policy has not been liberated by the external constraint. Surplus countries though used such an instrument to combat inflation and faced more monetary freedom. Flexibility also brought benefits while major dangers did not materialise, see Emminger (1979).

Concentrating now on the post 1977 period, the dollar decline, while it may reduce inflation of other major countries, could also have undesirable growth effects especially at a time when sizable PSD rises are avoided. XB adjustment is also delayed.

A continuous dollar decline was experienced since 1977 II. Growth was the important US objective, recording current account deficits to which neither the capital balance nor official finance were adjusted in time. The US task to provide the key currency proved too onerous under the economic realities. The dollar's burden was not lessened by artificial units and the lack of willingness of other currencies to enhance the reserves status of their currencies. Exchange rate fluctuations went beyond compensation of inflation differentials. The dollar embarked on a self-propelling decline magnified by capital flows. All this contributed to a changing mood: deficit countries realised the need for domestic adjustment, otherwise exchange rate depreciations would only affect prices. Surplus ones realised that rapidly appreciating currencies without a corresponding slow down in

prices threatened growth. They intervened to reduce appreciations - Germany depicting now the signs of an open economy with less monetary autonomy compared with the period since floating started. Further world economic activity was threatened by overshooting. The gravity of the situation was recognised on both sides of the Atlantic. The USA was originally the foremost supporter of pure floating which, by itself, would restore XE. This opinion did not last. Floating did not give full autonomy over the dollar rate. It has now become a more open economy and the impact on domestic prices will not be negligible, despite being less pronounced. The weakness of the transmission mechanism is offset by the scale of overshooting. Acceleration in domestic inflation coincided with dollar depreciation with the one feeding on the other. There was now little conflict between stabilising the dollar and the primary objective, namely inflation control. Anti-inflation and dollar stabilisation packages followed in October 24, and November 1, 1978, accepting also that domestic policies are needed together with exchange rate changes to avoid disorderly markets, see Midland Bank Review (Autumn, 1979, pp 14-9).

Recognition of the costs floating imposes implies that countries should look for a system to reduce exchange rate fluctuations so that they are in line with stable long-term economic trends. The degree of stability is debated. Some argue for an urgent restoration to fixity. One has to look though at experience, the reasons for which the BWS broke down, and the similarity between the early and late seventies. Any premature movement is doomed to failure. However, given that instability was produced out of economic divergence, a closer approximation to reasonable price stability and a strong commitment not to depart from it are needed. Neither

of the two groups could afford its currencies to continue in the same direction. Further, currency appreciation as a counter-inflationary force does not seem to contribute to exchange rate stability. At least one currency has to fall or at best not increase in value, over a sustained period. Absence of cooperation adds to the instability problem. With respect to exchange rate dynamics the problem is with their implications and that, given their short-run real effects, it becomes a concern of government policy. It can be used as a policy instrument with the possibility of policy conflicts. International exchange rate surveillance and intervention rules are said to be necessary. Models of exchange rate dynamics though point out that what matters for the exchange rate is the total money supply in relation to its demand. No external depreciation can continue without additional support of money creation. Overshooting without over-expansion will stop or reverse itself. Long-run exchange rate stability and absence of overshooting are matters of coordination of money supply policies. Countries have to specify clearly their policies and prove to the world that they fulfil them. A movement towards exchange rate fixity has to be completely justified by underlying economic conditions. Of such a commitment for the world we are rather sceptical at least for the foreseeable future given the frequency of shocks and the fact that they have proved to unsettle the markets. More stability also means that countries that profited by fighting inflation through appreciations will now have to count on domestic measures. Encouraging signs of exchange rate stability can be detected. Firstly, price and monetary stability now enjoy a higher priority everywhere. Secondly, in mid-1978 surplus countries recognised the need to expand. Thirdly, the decision

to implement the EMS in Europe and undertake proper measures to make the arrangements viable. Fourthly, the change in the economic stance of the USA which is now geared to external objectives no less than to internal ones. Such measures continued in 1979 and 1980.

The November 1, 1978 package included measures to reduce the amount of dollars outstanding. The SDR though did not play the expected role. Apart from its traditional disadvantages it was hit by the lack of confidence in paper currency. Gold-backed SDRs did not receive the expected support by major members, trying to raise the reserve status of their currencies in order to finance their external deficits. Such a move though was important in enhancing stability given that the previous crisis could be reduced if such policy was implemented at that time. Germany now contradicted itself since a major reason behind the EMS creation was to avoid raising the DM reserve status.

Two alternative solutions seem to exist: (a) a multi-currency system and (b) a single standard based on the SDR, reinforced by the April 1978 IMF Articles, as the centre of the IMS. At the same time one is faced with a movement to enhance the gold's importance in the IMS, compared with its passive role in recent years. Firstly, the explosion in its market price since 1978. Gold purchases were different from previous crises. Gold was frequently rising in relation to all currencies, to some noticeably more than others, with no direct pressure of crisis proportions to be exerted directly on anyone so that authorities as a result do not have an imperative spur to action, as in the Smithsonian Agreement. There was a general lack in paper currency due to rising inflation, doubts on government ability to reduce the money supply

required, oil price and exchange rate uncertainty. Secondly, its role was enhanced in the EMS agreement. Thirdly, the attempt to provide gold-backed SDRs against exchange risks. Fourthly, the growing number of countries to bring their valuation procedures more in line with the market for various reasons. Fifthly, US authorities came to accept in the late seventies a more pragmatic view that despite decisions on gold's use, it remained a significant part of central banks' reserves available at times of need.

Rumours of gold remonetisation took place, establishing a link between currencies and a commodity of intrinsic value with genuine convertibility to establish confidence in world money rather than any number of domestic monetary targets, indispensable though the latter are. A number of serious problems and implications arise. The first is at what level or range to peg the gold price. Secondly it could be an unsuitable standard for the IMS given the volatility of its price and the fact that it is concentrated in industrialised countries with production mainly in South Africa and the Soviet Union. Political considerations exist too. Further, European central banks fear an accumulation of depreciating dollars as when they tried to keep its price at US$35.0 p.o, which collapsed in 1968.

A multicurrency system seems to be rather what we will experience in the near future, which reinforces all recommendations earlier in this section. Further, the US seem now more sympathetic to floating - with the modifications analysed above - implying that it is no longer willing to undertake the n^{th} currency status. No other country seems to replace it. An important characteristic of a fixed exchange rate system will be absent. The impossibility of countries floating

independently would lead to the creation of currency blocs, the European bloc being one of them, floating against each other. Monetary cooperation among the members of each bloc and among the blocs is reinforced.

6.C.a. Conclusions Stemming from the Snake Period

EMU had as an ultimate objective to secure a steady growth path and full employment, if it was to safeguard the EEC achievements in the long-run. It started functioning under a major world monetary crisis. Unemployment was adding new problems with no economic synchronisation and no EEC exchange rate system to ensure cohesion. At the end convergence was not achieved. Snake countries did not avoid realignments. Being inside the limits helped them achieve certain goals. Closer convergence occurred between Germany and the Benelux. The Community's efforts though, did not stop major members from using policies almost exclusively for their own national interests. However by the end of 1978, it was the determination of all members to restore stability. Despite a reduction though in inflation in 1977/78 doubts remained. By mid-1978 inflation rates were rising by the picking up in growth and raw material price rises were aggravating an already deteriorating trend. The EEC had yet to return to the path of price stability and growth. Uncertainty existed on how quickly that could be achieved. Strong members feared inflation rises while weak ones did not want to damage their growth prospects and chances to catch up with the strong members(11). The kind of policies to be undertaken is important. Problems facing the industrial world came mainly from internal difficulties in industrial countries and lack of any clear agreement on how to tackle them. Inflation and unemployment kept co-existing. Subordination of investment management policies to

demand management policies has not worked in the present inflationary climate. A more direct role should be given to the former in conjunction with cautious demand management. Progress towards the MU will not be hampered. By avoiding inflationary pressures they would also break the arguments of rich members on fund transfers for productive purposes. The Commission has an important role to play by pursuing an effective investment policy, and creating the conditions for the structural transformations to be carried out(12). An effective budget restructuring is needed. Enthusiasm is currently lacking among members, although rich ones will benefit from this transitory phase. Less prosperous ones should not be allowed to have, at this stage, the uncertainty of a gain under this group of benefits while, at the same time, they lose even in the form of cash receipts and payments. Currency convertibility is a basic MU ingredient and brings forth benefits. However, failure to bring EEC economies into line halted this process.

The IMS reforms in early seventies, the dollar evolution and other EEC reasons suggested that members must develop a common dollar policy. Its absence greatly assisted the breakdown of EMU. European monetary policy was limited to technical aspects. There was absence of binding commitments on coordination. Ultimately there was lack of political will to abandon sovereignty. The concept of exchange rate stability changed. Lack of credibility in EMU took place. Small EEC members have long recognised the limitations interdependence imposes on their actions. They align their policies to Germany's. Germany sets its targets independently. SSC have declined to set monetary targets recognising that their monetary policies must be geared to exchange market requirements and their

commitment to the Snake. This asymmetry reflects the true nature of the Snake, a DM zone strongly dominated by the strong economy held together by the need of SSC to keep a close tie with Germany at the expense of losing monetary autonomy. However, in a Snake comprising all EEC members this asymmetry would seem impossible to continue and the maintenance of balance among near equals has to take place with all the difficulties it implies. With respect to the Snake members one could distinguish some positive aspects although not equally shared. Further for the SSC the effect on growth was questionable in the longer-run. By trying to avoid deflationary policies in 1974-76 they ran into heavy unemployment in the traded sector and current account deficits in the latter part of 1974-78. They were forced to devalue between 1976 and 1978. Some of them left the Snake. Further deflation through domestic policies was still needed. On the other hand one cannot perhaps say that Germany did not benefit. It pursued highly independent policies and kept its economy more competitive. Both domestic and exchange rate measures encouraged investment in contrast to the SSC where long periods of declining competitiveness were the result of Snake participation.

By the end of 1978 the EMU goal was not fulfilled, even within the Snake problems remained. Exchange rate flexibility is still needed in the possibly less disruptive way. Complete fixity is an eventual long-run goal and requires the proper short-run actions.

The effectiveness of the Commission should be mentioned. It failed to impose its opinion, initiate policies, make consultation effective and mediate in disputes. It lacked the power, which national governments refused to transfer. Its authority has been declining since the mid-sixties. The power

has shifted to the Council of Ministers although this is not totally the Commission's fault. Governments have moved into new areas of policy cooperation, beyond those specified in the Rome Treaty, in which the Commission's role was more clearly defined. Nationalism of certain members has militated against central institutions. The Commission itself however is not without blame. Its members have to an increasing degree become representatives of their national governments and interests rather than the defenders of EEC interests as the founding fathers intended. Rather than trying to lead governments, the Commission acts as a forum for pre-negotiations between competing national interests. When it takes an independent stand, it climbs down only too readily when it runs into opposition.

Of course the whole strategy adopted was based on transferring national power gradually. Even under this approach though, there comes a stage when transfer of power has to take place to lead to a complete MU. Otherwise EMU will not succeed and will finally proceed in the opposite direction. A directly elected parliament was expected to enhance such transfer. Unfortunately it was not created during the Snake period and that was a barrier to EMU given the functions it was expected to undertake.

Finally, it has been suggested that the coordination approach cannot lead to an MU in view of what is described to be its inherent weakness of lack of automaticity manifesting itself in many ways. An approach based on reform has been proposed instead. We turn to analyse and compare the two strategies and possibly suggest the most appropriate one for the creation of an MU.

PART THREE

CHAPTER SEVEN MONETARY POLICY COORDINATION AND THE MANIFESTO PROPOSAL

7.A. Monetary Policy Coordination

7.A.a. Criticisms

Monetary policy coordination aims at stabilising exchange rates without market intervention. The implications of such a policy were analysed in chapter four as well as how one is led to the intermediate solution until coordination policies become fully effective. Doubts have been expressed even with this approach. The problems of annual potentially lengthy, painful and unproductive money supply negotiations, political friction due to national preferences hindering compromise, have been emphasised. Estimates on the appropriate set of expansion rates may not be publicly reliable. There could be errors in real GNP growth projections and high stability of income elasticity may be absent. Research on these matters is limited in Europe although there is evidence to suggest structural differences among members. Elasticities differ and depend crucially on the money definition, observation period and the use of quarterly or annual data on the observation equation. Important implications exist for the perspective durability of any money supply agreement that might, despite these difficulties, be concluded. It may imply undesirable IB situations for certain members and they may withdraw and disappoint the expectations it has nurtured, or resort to restrictions, which is even more harmful for integration. The coordination strategy, critics say, has crucial weaknesses which do not lead to a complete MU. It relies on discretion instead of automaticity which manifests itself in the following ways: (a) there is no way of ensuring automatic ex ante consistency of exchange rate

and money supply targets, (b) since members retain their power of discretion and instruments to exercise it there is no automatic mechanism to prevent them from violating the coordination agreement, (c) there is no way of ensuring that the coordination agreement will be automatically renewed, and (d), there is no automatic process by which discretion, possibility of opting out, is reduced over time.

7.A.b. The Importance of a Fund

Criticisms have a great deal to do with past experience and especially the way coordination de facto took place in Europe. It was not implemented properly. Once certain decisions, filling the gaps, are undertaken a substantial degree of automaticity builds into the system which could lead to a complete MU.

It seems that the key factor to move towards an MU is the establishment of a Fund to develop eventually into a European central bank. We argued for such a Fund in chapter four in the concept of Snake support operations, by pooling reserves to enhance effectiveness. However, its functions should not be predominantly technical in character, leaving almost intact the operational autonomy of members with respect to foreign exchange policies, given that each country retains title of its quota reserves paid to the Fund(1). The major advance that has to take place, bringing automaticity in the coordination approach is that the Fund should not be limited to the roles of an agent, keeping in practice the existing situation or even enforcing greater divergence. It should be given its own resources, also achieving in this way true multilateralisation. Reserve pooling would give Community institutions the power to make coordination effective by gaining control over assets of national central banks. The assignment of

supervising the EEC exchange rates, including interventions, would greatly contribute to exchange rate stability. The Fund would be responsible for the intra-EEC exchange rate arrangements and for the coordination of the intra-EEC exchange market intervention. It would also control the exchange rate policy towards third countries. Furthermore, reserve pooling would give the Fund the means to grant credits to members. The Fund could promote economic convergence by enforcing conditionality on these credits. Monetary spillovers from the Fund, through these policies, would tend to diminish gradually national monetary independence. National monetary policies would be increasingly determined by the policy pursued by the Fund. Therefore, a major weakness, namely the retaining of national discretionary power, would be gradually reduced. The irreversibility of the venture would be secured and the credibility gap would be closed.

Attempts to create such a Fund failed in the past mainly because national authorities did not want to give up control of their assets. It is doubted though whether an exchange rate agreement making it easy for members to violate the coordination process and opt out is a useful solution. Labour groups assume that the government will yield to their pressure, as compared to a solution where governments are commited to fixity. The vicious circle cannot be broken unless they renounce their policy of discretion.

However another major problem, namely that of fixing consistent monetary targets avoiding errors and uncertainty, would still remain despite the ease with which results would be implemented. No systematic studies have been provided by Community institutions. A limited number of studies would indicate the need for the Community to undertake substantial analytical work and

develop a credible and solid basis for ex ante evaluation of the compatibility of announced monetary targets to secure long-term exchange rate stability. All these would imply a long-term process. Authorities would have to predict future real GNP growth rates with greater accuracy. The period of observation and the estimation equation would have to be chosen. They could affect crucially the real income elasticity of the demand for real balances. Depending on the combination, different results could be obtained. A firm decision though on the above problems would lead to the establishment of the value to be chosen, coming closer to the proper target levels. The creation of the Fund, assuming powers and putting emphasis on the irreversibility of the venture, would provide a strong incentive to reach and establish successful policies. The main question would be whether complete consistency can be ensured. While recognising the difficulties, and keeping in mind the need of inflation similarity to bring exchange rate stability, one could not exclude the possibility of a country achieving low inflation rates through an effective monetary policy(2). Moreover, experience indicates that high inflation periods are also periods with substantial inflation differentials among members. Given the Fund's power it could force low inflation policies. An almost permanent move such as this, would further reduce exchange rate fluctuation margins among members, reducing further the effectiveness of independent national monetary policies. At the same time, the formulation anouncement and more successful implementation of monetary targets would enhance the predictive power of the elasticities. This process would be continued, suppressing margins further. What one achieves is a movement towards centralisation of EEC monetary policy. However, while exchange rate stability may be enhanced in this way, complete fixity may not come. Despite the rise in the effectiveness of

monetary policy, the question would remain, given the difficulties, of the ability to determine the rates of money supply growth which would produce exchange rate constancy. While exchange rate stability may be enhanced, permanent exchange rate fixity may not be ensured.

7.A.c. Monetary Policy Coordination and the Common Parallel Currency (CPC)

Within this strategy the common parallel currency approach has been proposed, that is the creation of a new currency to circulate in parallel with national ones. Initially its use would be restricted to official transactions and later it would gradually be extended to replace the national currencies as a result of greater convenience of a currency, which would come to be freely accepted throughout the EEC(3). It is proposed because of the economies of scale it would provide on the MI process. The Fund would also be responsible for launching and encouraging CPC adoption in international transactions. Members, by depositing reserves and a quota of domestic currency to the Fund, would receive in return CPC deposits. These arrangements would be within a preliminary stage where restriction of EEC exchange rate movements and intervention arrangements would take place. The CPC use, defined as the EUA, at the official level would be paralleled by its acclimatisation in private credit markets fostering financial integration. When it is sufficiently widely held privately to allow it to replace the dollar as an intervention currency, transition to the intermediate stage would be made. Central banks should intervene, if the need be, to defend the rate between their currencies and CPC while the Fund would defend the CPC/dollar rate. Maintenance of the intra-EEC band would require coordination among members. The CPC would

make the exchange rate between the dollar and EEC currencies vary in any direction and there would be a greater ability of the whole EEC area to absorb "hot money" without being overwhelmed, as compared to the case where the whole or most of the weight, frequently in the transitory stage, falls on certain member currencies. Transition to the final stage would be contingent on satisfactorily completing the coordination process(4).

The CPC is a central feature of the proposed strategy and the Fund is assigned the key role of fostering MI. The implications from the dollar role were analysed earlier. The use of a members' currency instead could have hegemonial implications, while SDRs were designed as an official money at a moment where the need is for a private one. The way the Fund would develop the CPC has been described, see Magnifico-Williamson (1973), Magnifico (1978b, pp 70-4), as well as the importance of the private markets in accepting it. It is also suggested that it is neither necessary nor desirable to define the CPC in a way that would make absolutely sure it would be stronger than the strongest national currency, implying insoluble problems for the system in which the CPC would initially coexist with EEC currencies. It would be sufficient and desirable to make it a tendentially strong currency. Semi-indexation clauses should be introduced to provide partial inflation cover. The proposed clause is that if price rises exceed a threshold figure, there would be a cross-the-board CPC revaluation to offset price rises exceeding the threshold. The CPC use as a private asset would insulate intra-EEC relationships from instability emanating abroad. By taking the place of the dollar role in the EEC it would enable the EEC to exercise some measure of control over this effective EEC money supply component and flexibility against the world, without disrupting the stability of intra-EEC

exchange rates. It would generally give the EEC the power to implement systematically and more effectively an EEC money supply policy, bringing closer to control all money creation in EEC which is the crucial factor to bring exchange rate stability.

In the preliminary stage the CPC would not be yet an intervention currency. National currencies would be used instead. It is interesting to comment firstly on some technical aspects of this proposal: the CPC would be linked to an agreement on nominal exchange rate evolution of the EEC currencies in terms of the CPC itself. It would play a central role in the exchange rate management system, used as a numeraire in it with respect to the central rate definition. The official CPC price in terms of currency i, is the weighted sum of official exchange rates of currency i. The share of a currency in the basket increases (decreases), when it appreciates (depreciates) in terms of the CPC. A strong appreciating currency, having a large share, could dominate the CPC. Depending upon the period in which the system is supposed to function, it may therefore be necessary to agree on rules for periodic share review. Looking at the methods of changing CPC parities we can compare the two kinds of intervention mechanisms, compatible with the existence of the CPC. When the operational intervention targets are the bilateral exchange rates between national currencies, if one currency changes its bilateral rates then other currencies will have to adjust their CPC parities too(5). This would reduce the CPC use as an account unit. Furthermore, predictability problems and costs involved could hamper the CPC use as an exchange medium for private transactions. When the CPC is the operational target, a consistent structure of CPC rates is determined to be maintained. They imply a given bilateral rate

structure. Banks intervene to keep these bilateral rates. If a currency's parity is now changed, it implies a change to some or all CPC parities. The most appealing way would be to change them so that bilateral rates between currencies which did not initiate the change, remain unchanged. This method would then make this kind of intervention similar to the previous one. In both systems however all CPC parities are affected by a country's decision to alter its own parity(6).

The argument on CPC use is to turn it to an intervention currency. Extra-economic arguments also exist. It is based on political decisions emphasising European approaches to creating monetary stability and the CPC could be the precursor of a future European currency. The important conclusion is that the danger exists that the CPC will not succeed as an instrument and symbol of MI, because it will remain less attractive than existing alternatives, due to the standard basket formula used for the CPC. For the present situation to change, either this definition should be abandoned or alternatively, its use should be subsidized by using a purchasing power guarantee. Indeed such a solution has been foreseen by those who proposed it, also suggesting indexation although not complete in order to avoid other disadvantages.

Other technical questions concern the ex ante intervention process. When operational targets are defined in terms of cross rates, margins around the bilateral rate are identical for all countries. These determine in turn CPC margins different for all currencies, given that basket weights are different. The higher a currency's weight in the basket, the lower will be the maximum deviation of its CPC market rate from the CPC parity. If the CPC becomes the operational target, fluctuation margins around parities would be also expressed in CPC

terms. Many intervention policies exist to maintain CPC rates within the chosen fluctuation band. Currency 1 can be at one of its limits requiring intervention to avoid any further deviation, while there is no other currency at the other end of its band against CPC. No automatic mechanism exists to indicate to country 1 in which currency to intervene and maintain its currency within the CPC band. This indeterminancy could result in the need for continuing consultation and could be a serious disadvantage resulting in speculative runs, difficult to reconcile with the exchange rate stability aim. Automatic rules would be needed such as translation of CPC margins to bilateral rate margins. Intervention rules would become identical to the Snake system with a few minor differences. The potential asymmetry problem in adjustment could also be solved. Further, a large intervention to keep a currency within the CPC limits could modify the CPC rate in terms of all member currencies. But the impact of a change in the CPC rate of a currency on other CPC rates would depend on the currency's share in the basket. A large share currency could, say, drag CPC upwards, forcing other central banks to intervene and take their currencies up in step. For the major currency country the burden would be reduced. Such a burden would remain primarily in the small currency country. Weak members oppose the Snake intervention system arguing that adjustment would fall on them, while according to the second scheme a currency can reach its upper limit against CPC without other currencies reaching their lower limit. The appreciating currency country alone would have to intervene. De Grauwe and Peeters (1979, pp 42-3) suggest that such a proposal could realise in the Snake too. Also, in a pure CPC system, the possibility exists that a currency reaches its lower limit without any other currency reaching its upper limit. The

burden would then lie entirely on the weak currency country.

However, the important conclusion would be that while these technical questions have to be settled, it is not just such arrangements that will bring EEC stability. What matters most is to make the coordination process effective. Intervention and parity adjustment would also be needed in the transitory stage. Inflation rate evolution would be the major guide on correctness of a given exchange rate structure.

Supporters of this proposal aim to avoid the dominant currency problem. At the same time they maintain that the CPC should not be stronger than the strongest national currency. It seems though that this version implies a CPC with characteristics similar to the strongest EEC currency. CPC definition might in practice become a complicated way for EEC to move to a DM standard. That could have efficiency advantages but also potential drawbacks in the absence of assurances as to the course of the monetary policy of the hegemonial country. One would be sceptical on the materialisation of such agreement. However, the encouraging point is that we accept the CPC proposal under a strategy which includes also a powerful Fund able to impose European policies on members.

This kind of coordination-cum-centralisation strategy would enforce limitations and binding commitments with respect to members' internal policies and would gradually reduce their discretionary power. The CPC would become an international private money and would greatly facilitate the MI process. It would enhance the EEC monetary control. Furthermore, together with the rise in coordination, active measures would be taken by the Fund to enhance the CPC private role. It would gradually replace the national currencies. The EEC monetary policy would then be fully determined by the Fund.

7.B.a. Monetary Reform. The All Saints' Day Manifesto Proposal

Some of the coordination strategy critics provide all arguments analysed earlier, which led them to conclude that the coordination approach will fail because it involves exchange rate locking without monetary reform. They propose a radically different proposal, achieving an MU through monetary reform based on the free interplay of market forces(7). They analyse the advantages derived from a single stable purchasing power currency, but they also recognise the difficulties posed by the transition to reduce inflation and especially high inflation levels. Since in the long-run the need to reduce high inflation rates seems inescapable and the consequences of reducing it have to be borne whether a country joins an MU or not, transitional costs would be minimised if the inflating national currencies, instead of being stabilised, are replaced by this new currency subject to value guarantees and issued by an independent institution. Reform will become more urgent the longer the inflationary situation lasts, offering a unique opportunity of carrying it out through a CPC, setting the pace for MI at the same time. Given the need for gradualism and automaticity the inflation-proof CPC will be circulating together with existing national currencies. Manifesto signatories explain why such money simplifies the problems to be tackled when it could prove difficult under national monies. Monetary reform will prevent inflation, and it is also the reason for linking EMU with it. Also during the transitional period it is easier to achieve a constant purchasing power of CPC than of national currencies. The mechanism of the inflation-proof CPC, defined as the EUA, has been described by Peeters, de Grauwe and Vaubel (1978). The rate between the CPC and each

of the national currencies will be adjusted according to a crawling peg formula, based on a weighted average of inflation rates of consumer prices expressed in national monies. When the CPC ultimately replaces national monies, its supply should be subject to a monetary rule, guaranteeing its purchasing power stability. An institution will eventually replace national monetary authorities once CPC reaches some predetermined proportion of each member's national money. At this time monetary authorities would have passed to a European central bank. The Manifesto participants realised also the possible necessity of policies to cope with regional imbalances, which may be created when wages of peripheral regions rise to levels of high productivity regions. Its supporters suggest that this approach, apart from gradualist advantages, is superior to a coordination process because market forces would be independent of political fluctuations, frictions and frustrations. It ensures that the CPC is used by those fearing most from inflation and exchange risk, where discretionary national monetary policies have lost their effect on employment. It avoids rivalries, hegemony, competitive inflation and stabilisation crises. It works without market intervention avoiding mutual interference and moral hazard or ex ante agreement on national rates of money supply growth. It avoids discretion and provides a common standard value, means of payments, store of value, facilitating market integration.

7.B.b. Critical Appraisal of the Manifesto Proposal

Under this approach, national authorities lose the ability to control inflation and achieve their desired macroeconomic targets, although they could not possibly claim that otherwise they could achieve better results. At the end, a stable purchasing power CPC circulating alone would continue eliminating

inflationary expectations and unjustified real wage rises which raise unemployment. Authorities may also be less enthusiastic about such a move due to loss of benefits out of national money supply control, unless they accept the full implications of MI. Such a loss refers to the use of inflation as a tax, or source of revenue, to finance part of public expenditure. Parkin (1976, pp 236-9) on the other hand, presents arguments to suggest that power to levy on inflation tax can hardly be regarded as a loss. Another benefit to be lost is the seigniorage out of issuing national money. However, governments could arrange sharing the CPC seigniorage which will more than replace that of the national currency issue. Laidler (1978) suggests that if national currencies are to be driven out of circulation members must stop issuing them. Even if the public hold the CPC, it does not mean that governments will stop issuing their currencies given the revenue they extract, even if they are held by the European Bank. For this loss to be made good, governments would have to go far beyond simply permitting their nationals holding the CPC. Manifesto signatories suggest that each national bank should compensate the European bank. However, there are reasons for national banks to cease issuing their currencies, see Salin (1978). Also, if a Bank is to pay for its currency depreciation, the inducement to create money would diminish. Klein (1978) challenges the Manifesto scheme, claiming that it greatly simplifies and thereby misunderstands the nature of the competitive process in the market for monies. It is incompletely analysed by ignoring or blurring various analytical distinctions. For Klein, historical evidence does not suggest perfect substitutability among alternative monies. Also consumer confidence in money takes time to be created and could be costly. Failure to consider explicitly these

costs results in misleading analysis and policy conclusions, when analysing the social saving out of such reform proposals. Analysing these factors, it may not be the case that the inflation proof CPC will drive currencies out of circulation, even if political will exists. Manifesto supporters suggest that the fact that the CPC will be associated with zero inflation and perfect predictability would further support substitution of CPC for national currencies, see O'Mahony (1978). Zis (1978) attempts an alternative historical analysis which suggests that Klein's interpretation may not be unambiguously well founded. They accept that there is not any analogous historical precedent to provide information that CPC will be accepted. This uncertainty though about the final outcome could have undesirable implications. If such a venture failed, it could be a drawback to MU plans, even raising the possibility for MU efforts to be halted permanently. On the other hand, we would rather not agree with Klein's kind of dominant currency proposal (1978, pp 84-6) given the potential implications of such a solution. A stable purchasing power CPC could enhance EEC monetary autonomy and reduce undesirable consequences created abroad. Vaubel (1978b) explains how the benefit of stability of value affects the money functions differently. He also analyses how the CPC will expand, as well as the factors that will determine which member currencies it will replace first. With respect to both real exchange rate risks and costs, the CPC will primarily spread in the most open and central members and regions, a pattern which is in accordance with the traditional OCA theory. One should keep in mind, though, why it might not prevail primarily in those areas due to factors, such as the domestic inflation risk and the variance of domestic inflation, which are at present relevant for currencies of the peripheral

member countries. In this case for the whole venture to have a "centralist" bias, it would be necessary that inflation is higher at the centre than at the periphery.

We can now examine the crucial question on reducing inflation with or without transitional unemployment. Parkin (1976, pp 232-6) analyses how deflationary effects will be avoided. Laidler (1978) challenges Parkin's views and also explains why, because of different conditions, historical evidence should not be used to apply in contemporary Europe. He argues also that deflationary effects could follow due to the rise of other taxes. Salin (1978) has questioned Laidler's views. Vaubel (1978) describes the way to ensure absence of inflationary expectations. A stable currency performing all main money functions permits the market to deal with a money which need not be stabilised. Inflationary national currencies need not be stabilised due to their gradual displacement as more contracts are determined in the new currency and provide payment for it. Price stability comes because of currency substitution rather than stabilisation, reform instead of monetary deceleration. No stabilisation crisis occurs due to lags in the adjustment of expectations and contracts because there would be no stabilisation. Since one currency displaces nine existing ones, reform coincides with monetary unification. All this would provide the strongest arguments to move towards MU since arguments against it are in the form of the costs of reducing high inflation rates, and that the surrender of the exchange rate instrument implies excessive unemployment in structuraly weak areas. The key element in the absence of such a crisis is that the CPC expected inflation is brought down to zero. The CPC will eliminate inflationary expectations because it has a value guarantee in the form of an exchange rate guarantee vis-a-vis currencies

circulating in the same area. This procedure though works only as CPC remains a parallel currency. For CPC to make sense its introduction has to be gradual. If existing currencies were to be driven quickly out of the market, the advantage of launching CPC over a once and for all reform, would be rather illusory. Expected inflation will not be brought down to zero. If such a case existed and the CPC was introduced, immediately replacing national currencies, a single currency prevails requiring a quantitative rule. It would then be doubted if such rule will guarantee its purchasing power stability in such a short time, when such a rule is missing from each member and the EEC. Remaining inflationary expectations could lead to excessive real wage rises and unemployment. Anti-inflationary policies could raise unemployment further. There are contrasting views on the speed of CPC substitution, see Vaubel (1978), Masera (1978).

As it is suggested above, another crucial problem lacking a clear answer arises from the different speed of the CPC spread over the EEC. This could mean that, the extent to which stabilisation-induced unemployment will be avoided, will differ throughout the EEC. It may not guarantee that a stabilisation crisis will be avoided where it is needed most, i.e. in countries with the highest and most unpredictable inflation rates, where the stabilisation threat is greater. The regional balance problem also exists out of factor payment equalisation. If a minimal degree of wage and exchange rate illusion still exists in these areas it could alleviate this regional problem. A rapid CPC spread there could increase structural problems. The CPC then has to penetrate initially these regions where inflation is most ineffective in reducing unemployment. However, from the point of avoiding a stabilisation crisis, CPC is needed

most in weak high inflation areas. There is no agreement on where CPC is going to prevail primarily. Further unemployment problems would not seem to be avoided in the periphery irrespective of this question. Assuming now that CPC prevails in both areas simultaneously, in each for different reasons, unemployment problems because of structural difficulties in weaker areas, may not be avoided.

Another major question refers to the final stage. In the intermediate stage CPC's value guarantee can be validated with certainty and precision. However, to the extent that it out-competes national currencies, it can no longer use them as points of reference for exchange rate adjustment. Like a national currency, it would require a supply guarantee instead of an exchange rate guarantee. While one cannot ignore the benefits of such an effective rule, the question is, if such stability can be guaranteed at the final stage. Is such currency going to be administered better than present national ones? If it is mis-managed it could have more serious consequences than the mis-management of any single national currency. European monetary authorities must be independent and the monetary rule to be embedded quite rigidly, not to give room for discretionary policies. While such a proposal may not require ex ante agreements on national money supply growth rates, it requires one at the EEC level. One cannot escape from such necessity and research required. Due to difficulties entailed in establishing the successful rule, research is required long before the new currency has out-competed national ones. We do not exclude the possibility that a successful rule may be achieved at the first trial. However, it may not and price stability, at least initially, may not be achieved. Are the public going to be compensated for such an eventuality? No clear answers are

provided. What is more, despite having a successful rule, one cannot exclude the occurrence of shocks. EEC in order to maintain zero inflation, may have to implement on certain occasions strong deflationary policies. Further, lags operating in the process, at a moment where the future cannot be completely foreseen, may imply inflation rises for certain time periods at least. Also circumstances may cause the new currency to depreciate. If no other measures are taken, should the public be compensated for depreciation losses? No agreement exists here either. Given the factors which, beyond the monetary rule, could influence the inflation rate, we are not fully convinced that EEC authorities are able to permanently guarantee a stable purchasing power currency at the final stage. A credibility gap would seem likely to be created and a failure to give permanent guidance to expectations would seem possible.

Manifesto signatories seem finally to fall into a contradiction. On one hand, they claim that in the coordination approach the monetary rule cannot achieve a given inflation level that would guarantee exchange rate stability among them, while on the other, they maintain that the monetary rule in their proposal at the final stage will guarantee a given inflation rate - zero in their case.

7.C.a. Conclusions

A comparison between the two approaches will be attempted here. Firstly, even in the coordination-cum-centralisation approach there is a certain degree of substitutability between the CPC and national currencies. Therefore, the implications analysed in the Manifesto approach, based on substitutability alone, would seem to apply in the former although they would rather be less marked. The fact that economies will progress on coordination and establish low inflation levels would suggest

that one would not envisage a complete switch from national currencies to the CPC. The low and predictable CPC inflation rate would make it attractive. It could be that both CPC and national currencies circulate together. That would not create problems in the coordination-cum-centralisation approach, since it is not substitution alone that will bring the MU, but also effective coordination. In fact the CPC is introduced to enhance it. The performance of the CPC though has to be more satisfactory or at least as satisfactory as that of the dollar in order to bring forth the expected benefits.

In the Manifesto approach the question that remains is how quickly, and in which areas, the CPC would firstly replace national currencies and the relation to stabilisation. Questions remain on the successful implementation of the monetary rule at the end. Unemployment in certain areas may not be avoided.

A less than fully indexed CPC seems to offer greater chances for gradualism. The CPC would gradually become an intervention currency. Supporters of this alternative, to be launched within the coordination approach, accept the possibility for transitional costs for certain members, apart from those created, due to structural factors and call for an effective regional policy. Further, under this approach one avoids the problem of where the CPC will primarily prevail and the implications for stabilisation. In the Manifesto approach a credibility gap could be created, having grave consequences, if countries believed that they would avoid deflation, while in fact they could not do so. The coordination-cum-centralisation approach though avoids it by explicitly asking for the proper measures to be implemented for countries that have to undertake considerable adjustment. Assuming that the CPC prevails primarily at the centre, it offers no advantages on the stabilisation question

compared with the coordination-cum-centralisation strategy. It seems to be inferior to the latter, since the unexpected crisis could have far more serious implications. Measures to ease problems would tend to come too late and the burden would remain for longer periods.

Both approaches take into account the regional problems created by nominal factor payment equalisation throughout the EEC. However, such an occurrence seems to take place at a faster rate, and with greater proportions, under a widespread CPC use in the periphery.

Coming to the final stage, there is the problem of an effective monetary rule. Both approaches share this problem. Members have to be convinced that the zero inflation rate will be agreed. The Manifesto approach could face a credibility gap. The problem seems less acute under the coordination-cum-CPC approach where it does not establish the zero inflation target but it instead refers to a threshold level. At the final stage the single currency has to be well administered. However, one should not refer to an explicit level given the danger that such a target might not be fulfilled. What is therefore needed is a firm commitment by Community authorities to the aim that inflation should be kept at the lowest possible level. Success of their policy will be judged on the inflation prevailing on other parts of the world as well as on past experience of members, especially the ones with the most successful record. It would seem that coordination offers more favourable chances of success primarily because until the final stage is reached successful coordination will have established low inflation levels and policies to guarantee success in the future. The Manifesto entails also the danger that monetary aggregate control would diminish temporarily during the intermediate stage

since it does not argue for strict discipline and does not call for target harmonisation among members. That could also make a successful policy at the end more difficult.

The Manifesto approach could bring forth the benefits claimed by its supporters. However, uncertainty about the possible outcome, indeterminances and contradictions, all manifested in various ways would rather lead us to be more sympathetic to the coordination-cum-centralisation approach. That of course does not mean that such an approach will not succeed if the dollar is stable and the chances of the CPC to become an intervention currency at the level required will be reduced. Although the CPC could spread even if it was as good as the dollar, one should realise that the CPC is launched to contribute to a better EEC money supply control, since that provided by some EEC governments and the USA, is not the one that would make coordination successful. Under a stabilising dollar policy which does not create monetary unrest in the EEC, coordination will be more effective in the EEC, uninterrupted by undesirable external factors in the intermediate coordination stages. The coordination-cum-centralisation process will reach its final stage successfully.

One should mention though a common weakness of both approaches and that is that they both seem to be inward looking. The potential international reserve role of the CPC should not be ignored. It could cause large upsets in the IMS. Nor is there any discussion on how the international CPC role would be restricted to acceptable proportions. Balassa (1977) suggests that this could be an attractive alternative for EEC countries, as well as those with strong links and corporations having the bulk of their activities with the EEC area. The CPC could spread further. Restrictions on its circulation could curtail the

economies of scale and efficiency gains of having it. Also rationing its supply could make impossible to control its value according to the indexed-basket formula. The problem remains to reconcile the need to make the new currency acceptable to European markets and not to upset a desired composition of world reserves, avoiding international conflicts. The need of cooperation between the two parts of the Atlantic is once more emphasised. Further problems may arise within the EEC due to the reserve CPC role - EEC authorities have to reconcile the policies needed for such a role with those for domestic monetary management(8).

From all above it is evident that for a complete MU, transfer of power to EEC bodies is required. Interdependence has already forced members to seek coordinated policies. However, the MU involves greater limitations to the ability of individual governments to determine their own economic policies. Political willingness to surrender more than the current degree of their sovereignty is a prerequisite for the changes, as suggested above, to come into force. Such willingness has not been shown so far by the members. As long as it is absent, the possibility of applying the proper policies is distant and the prospects for a complete MU are uncertain(9).

CHAPTER EIGHT THE EUROPEAN MONETARY SYSTEM AND FUTURE PROSPECTS FOR THE EUROPEAN MONETARY UNION

8.A.a. Aims, Decisions and Underlying Reasons

The move to create an EMS was aimed at establishing closer monetary cooperation leading to a zone of monetary stability in Europe. It was regarded as a fundamental aspect of a comprehensive strategy aimed at sustained inflation-free growth, progressive restoration of full employment and narrower disparities within the EEC. It would facilitate convergence and give impetus to the European union process. Rules revolved around the elaboration of the system itself and study of action needed to strengthen, under the system, the less prosperous members. The arrangements approved referred to the initial stage and within two years from the EMS introduction, they would be consolidated into their final form entailing the creation of a European Monetary Fund and full utilisation of the European Currency Unit as a reserve and settlement asset(1). They had four main aspects: the ECU, central to the system, to be the basis for a divergence indicator, denominator of claims and liabilities arising in the intervention and credit mechanisms and a means of settlement between central banks and the Commission. The exchange rate and intervention mechanism, which borrowed some of the Snake features, but also involved innovations - the divergence indicator calculated in ECU terms. The credit mechanisms to operate under the existing rules. Finally, the transfer mechanism to strengthen the less prosperous members and facilitate convergence.

The EMS was proposed when experience from the past two years had proved disappointing with respect to both European and world economic prospects, in order to prevent divergence and protectionism. It was considered as a means of strengthening

the EEC mechanisms in view of the second enlargement and as a self-defense against US policies. It aimed to minimise the impact of world economic problems in Europe and especially exposure to volatile currency movements which, it was believed, stunted trade and growth and aggravated inflation. Germany, one of its two main initiators, wanted to protect its competitiveness. However, it did not look more at the unsatisfactory pivotal dollar role and less on exchange rate fluctuations by reducing its role, since it wanted to hold the DM reserve status down. It preferred to avoid capital exports, achieving it by tying the DM to other EEC currencies. The Bundesbank still considered the USA as the natural reserve currency country and wanted also to avoid a loss of national monetary control. France was committed to a programme to reduce inflation and enhance industrial efficiency and believed it could be better achieved inside the EMS, although past experience was not encouraging. Richardson (1979, pp 50-4) also explains the reasons for which, since the mid-seventies, there was a convergence of ideas among monetary authorities in Europe which greatly contributed to a common solution(2).

8.A.b. Analysis of the Arrangements

The technical arrangements dominated most of the negotiating period, involving the question of who bears the adjustment burden. The basket formula and the parity grid were proposed for placing ECU at the centre of the system. Comments on both approaches were made in chapter seven. Additional problems could be created under the basket formula when a currency leaves the agreement, or when members do not favour involuntary debtor or creditor positions when their currencies have not reached their limits. However, when their turn comes they could bear the entire adjustment(3). According to the EMS

resolution ECU parities derive a grid of cross parities. ECU margins - compatible with the bilateral margin - different for each currency, were established. However, the intervention organisation was based on the grid. A set of bilateral rates is determined and each central bank intervenes to maintain these rates within the predetermined margins, making, essentially, bilateral rates as the operational targets and when it is necessary cross-rate realignments can take place. ECU parities also change. Therefore, de facto, ECU parities are derived from bilateral ones and not the other way around. This is reinforced by the fact that a currency could reach its bilateral limit without having firstly crossed its divergence threshold(4). Realignments can be forced, i.e. setting new bilateral rates which will in turn determine new ECU parities. The most preferable solution from the symmetry point, also minimising uncertainty on intervention decisions, would be the one based on bilateral rates coupled with EMS currency use in intervention. The grid was finally adopted in intervention. However, a policy more compatible with placing ECU at the centre of the system would be to use ECU rates to determine bilateral rates. The basket formula would be more compatible then, although if certain problems are not solved bilateral rates would be forced, bringing forth the problem of de facto ECU derivation. The "Belgian compromise" reconciling the operational simplicity of the grid with the advantages of an objective indicator does not alter the above analysis. One could propose arguments for using the ECU with the purpose of becoming an intervention currency. In fact this longer term objective was assigned to ECU. However, certain characteristics would be required, such as ECU being stable in terms of member currencies, official support, avoidance of a complex formula

and having a central bank to develop the ECU market. It was to be seen whether strong national resistance would subside. Other factors affecting its use were analysed in chapter seven. Opting out by a currency could hinder its use. It would not be a problem if ECU parities remained unchanged, as indeed it was decided. One should deduct from the premium or discount shown by the market ECU rate, the share of appreciation or depreciation attributable to overstepping the bilateral margin of currencies opting out. Furthermore, restrictions on ECU creation and utilisation(5) do not correspond to full ECU official use as the resolution proposed.

A discouraging sign on symmetry has to do with the absence of foreign exchange markets in European currencies. Dollar intervention could de facto become the rule.

While the grid would be the basis, ECU rates are to be used as an indicator of systematic deviation of one currency against the other. Using it, the presumption would be that the country should initiate adjustment measures, see EMS Resolution, Annex II (1978). Thygesen (1979) explains why this indicator presents, for the first time, an agreement to use an objective indicator to trigger coordination. However, the divergence threshold was an early warning signal rather than a fundamental disequilibrium signal. Although it could prove useful, it was not mandatory. This could reduce its practical significance creating also a credibility gap and speculation on realignments. There was also uncertainty as to whether the indicator or the bilateral limits would respond first. A lower threshold could avoid this problem although it may seriously diminish the indicator's operational significance. Also if diversified intervention is not accepted, dollar use could have undesirable implications. Korteweg (1979) asserts that it complicates, without improving,

the EMS functions and creates asymmetries due to its mechanics. However, symmetry could occur between the two parts under diversified intervention, implying also less contraction for weak members. On the other hand a member could opt for ECU realignment rather than adjustment. This would seem to be the case where ECU parities will determine bilateral parities(6).

There was also an extension in the amount and duration of credit facilities. Multilateralisation would seem more effective compared with the Snake period. However, the minimalist view on the Fund was accepted for at least the first two years. There were massive Fund assets to prevent short-term exchange rate instability and this could be a factor inspiring confidence and stability. Credit facilities rose substantially too. They consisted of borrowed funds so that the increase in liquidity could only be temporary. However, they could contribute to divergence. Severe conditions for borrowing could avoid such an eventuality(7). Others - Richardson (1979, p 54), Walter (1980), de Grauwe and Peeters (1979) - do not consider them as an inflationary danger while they would not be sufficient to prevent adjustment. The situation is different though on the ECU creation mechanism, which results in effective gold mobilisation, which was previously sterilized. Another major inflationary potential would be if the Fund started creating ECU against national currency deposits. Internal policy commitments, provision for potential parity realignments and other measures are important. A Fund with powers to ensure that undesirable conditions will not develop was needed.

EMS negotiations concentrated on technical issues. Crucial issues for its success were not sufficiently dealt with. One of them referred to effective coordination, acceptance of limitations and binding commitments. Analytical work was not

undertaken. There was no real understanding on what policies were to be adopted. Conditions for undertaking realignments were needed. Disagreements existed with the danger of delays. The dominant currency problem could arise even inside the EMS A policy towards third currencies was absent. Finally, disagreement emerged on the amount of resource transfers for the UK who decided to remain outside the EMS.

Members expressed determination to ensure EMS success by policies conducive to greater stability at home, price level stability, and abroad, exchange rate stability. Experience demonstrated the need for discipline. Risks in terms of unemployment and inflation could even be greater and more complex(8). If the EMS did not bring the economic and monetary impulses expected then a union would follow which proves untenable, causing disappointments and bringing setbacks with a resulting deterioration in objectives. Real decisions on the MU could be made difficult and the cost of restoring stability could be higher than otherwise. The whole strategy could change, involving policies directly aimed at reducing unemployment, with all the implications that such reversal may entail. Ability to force convergence was questionable. Different expectations though could make different people more or less optimistic. The EMS was beset with the problems of fixed but adjustable exchange rates in its internal relations. The causes that led to the BWS collapse were present in the EMS. Short-term stability followed by realignments would seem to be the major EMS feature. If it could bring greater short-term stability in the EEC something would have been achieved. It would be difficult to guarantee long-term fixity given its unresolved issues and the power of national discretion. However, it could be a much wider enterprise if genuine steps on

MU creation were taken. The crucial time will be in early 1981 when decisions on the Fund will be taken. It would seem then, that the first two years of the EMS appeared more like a precondition before starting the move towards MU. The extent to which it is successful will create a more favourable environment to take more important decisions later.

8.B.a. The Attitude of Members during the Negotiations

An analysis of the attitudes of members during the negotiations is important since the questions raised are directly relevant to the viability of the EMS.

Little can be said about the desire of the smaller members opting for the stability MU offered. Belgium also expected that the Lira and sterling would provide a cushion to the weak Franc. The Dutch were somehow worried, a larger EMS could become weaker and more likely to collapse than the Snake.

The UK, while supporting stability, justified the reasons for opting out. It put emphasis on the durability of the system, the basket formula, it argued for an external exchange rate policy and policies to avoid deflation out of coordination by asking for net budget receipts, see HMSO Green Paper (1978). However, the EMS was launched to tackle the economic problems. This takes time and so does durability. In the Snake, strong members did not expand sufficiently, while under the basket formula it could be that weak members undertake the entire burden. The UK though had an important point with regard to the lack of external policy. Finally, on the budget question, it seems that the UK linked something not directly involved to the MU implications. The Budget redistribution problem existed even if the EMS was not created, given the Rome Treaty objective. The UK was not benefiting under this source of revenue while one could not say that its gains from the other source -

expanded EEC market - were larger than those of Germany or France. In strict MU terms this argument should not be used for not joining. However, the EMS could create its own deflation and transfers should take place for that purpose. One can then see the residual validity of the UK argument in the sense that even transfers due to MU implications could be large enough to necessitate restructuring.

Some of the UK fears were also shared by France and Italy. Italy favoured moves to strengthen intra-EEC links. It viewed the EMS as a design made from three complementary elements: the exchange rate agreement, the EMF and measures to reduce divergences, see Sandini (1979). Italy's requests were partially met and she finally joined, receiving resource transfers, although with a higher margin - 6 percent - given that inflation was still higher even with respect to the EEC average and the gap was to remain wide for some time. It was planning to introduce a three-year plan in early 1979, to improve its objectives and remain an active EEC member, implying a return to the 2.25 margin.

Ireland, despite its strong links with the UK, joined. Arguments for joining are provided by McCarthy (1980). Authorities hoped that the Punt would also remain close to sterling. However, Ireland's independent exchange rate policy was curtailed. The Irish wanted to break the ten year inflationary period. Independent monetary control though cannot be achieved inside the EMS. Success would come only if the EMS inflation is lower to that of the UK.

In Germany there was a desire for exchange rate stability, although the Bundesbank and private institutions spoke with disquiet, emphasising two points: (a) expected benefits would not (fully) materialise as the conditions for smooth functioning

of fixed - though adjustable - rates are not met, and, (b) economic costs mainly in terms of inflation risk and consequently unemployment risks were too high. The system had a built-in inflationary bias, see Scharrer (1979) for an analysis of these points. The Bundesbank was not prepared to fully obey the rules and was not ready to accept symmetrical intervention, especially if realignments were delayed. Rather than having inflation rising to the EEC average, it seemed determined to bring it down. It wanted to avoid erosion of its autonomy and preserve its main objective. It was to be seen whether it would be successful.

Political decisions were reinforced. Decisions were taken when MI had been demoted from policy issues. The feasibility issue caused a divorce between expert opinion and political action. Delicate opinion on highly technical matters was left to decisions of final political meetings. All major members took their decision mostly on political grounds. Technical decisions were on political grounds too. Finally the French veto preventing EMS from starting on January 1 and the French Placet on March 12, seemed more like tactical moves, if one was to realise that many problems had been left unsolved well before the veto and remained so after March 12. Concessions were minor and complex due to the German and British attitude. Political reasons forced France to such a move and this affected the EMS credibility. State heads took a unanimous decision on what for them was of "historic importance" on December 5, and permitted discord among their farm ministers to undermine it on December 19.

8.C.a. Other Implications

The EMS was criticised by non-EEC officials; (a) as being further evidence of EEC isolationism. The EEC could impose

controls for the system to hold. Reform should be made on a world not a regional basis and Europeans could lose interest or act contrary to the IMF. (b) The EMS will not succeed and its inevitable collapse will be damaging to the IMS. Foreign exchange markets were unsettled by the plans to link currencies and the question was on the rates to be fixed at the beginning of the EMS implementation. It was feared that rates would be preserved expensively and too long having undesirable implications. (c) It threatens the dollar. The EEC would not try to fix a rate against the dollar. Its stability would be threatened by poorly coordinated dollar intervention.

Baquiast (1979) provides arguments to suggest that the EMS respects the IMF objectives and Articles. Emmerson (1980) also suggests that Europe would have a more coherent negotiation performance over world monetary questions(9). Nevertheless the ECU replaces the SDR at least in the EEC. It could also be used by countries with strong links with the EEC. Also, the final EMF form is crucial. If it was to be a credit creation institution it could turn the ECU into an intervention currency becoming an alternative to the dollar undermining also the SDR. Increases to EMF resources could be more important to Europeans than IMF quotas(10). Triffin (1979) maintains that ECU development may be beneficial to the USA in the long-run. The USA may have to restore XE and monetary stability whose excessive relaxation contributed to dollar overvaluation abroad and inflationary weakening of its purchasing power at home. The EEC decision had to do with the dollar although the Commission argued that it was not directed against it. It would retain its leading role, although in the future, responsibility might be more widely shared with the ECU and the yen. Even if the dollar stabilises, the MU move

should continue since the question was whether the dollar should continue performing as the only international exchange medium. The EEC insisted on a more constructive US attitude since the EMS could greatly contribute in solving the dollar problem, while a strong EMF could make joint intervention more effective. There was also a possibility of introducing a substitution account to exchange dollars for ECUs. One should not expect that, at least during the initial stages, the EMS is sufficient to stop the DM from appreciating. By itself, an ECU alternative to reserve holders could increase dollar pressure. Hence it would be beneficial for this account to be introduced.

The US attitude was closely linked to the dollar role as the world's single real reserve currency in the absence of a better alternative. The initial reaction was that the EMS would be a useful challenge and of potential assistance to the world's monetary order. However by 1978 III it was changing, emphasising global solutions and greater flexibility until more convergence comes forth(11), while it considered the Eurocurrency growth as a manifestation of rising financial integration and interdependence and it should not be blamed for tensions that go with it. Some take an offensive view on the US attitude, the only third party whose policies and reaction really matter for the future of the EMS. Strange (1979) presents arguments to show that US actions are on pure self-interest. However, the evidence for this case is not strong and certainly the last two years do not suggest a "benign neglect" towards the dollar. Stability between certain key currencies will contribute a lot to world monetary stability in general and to EEC stability in particular.

In the long-run no contradiction exists between the idea of IMR and the creation of a specifically EMS. The need for global

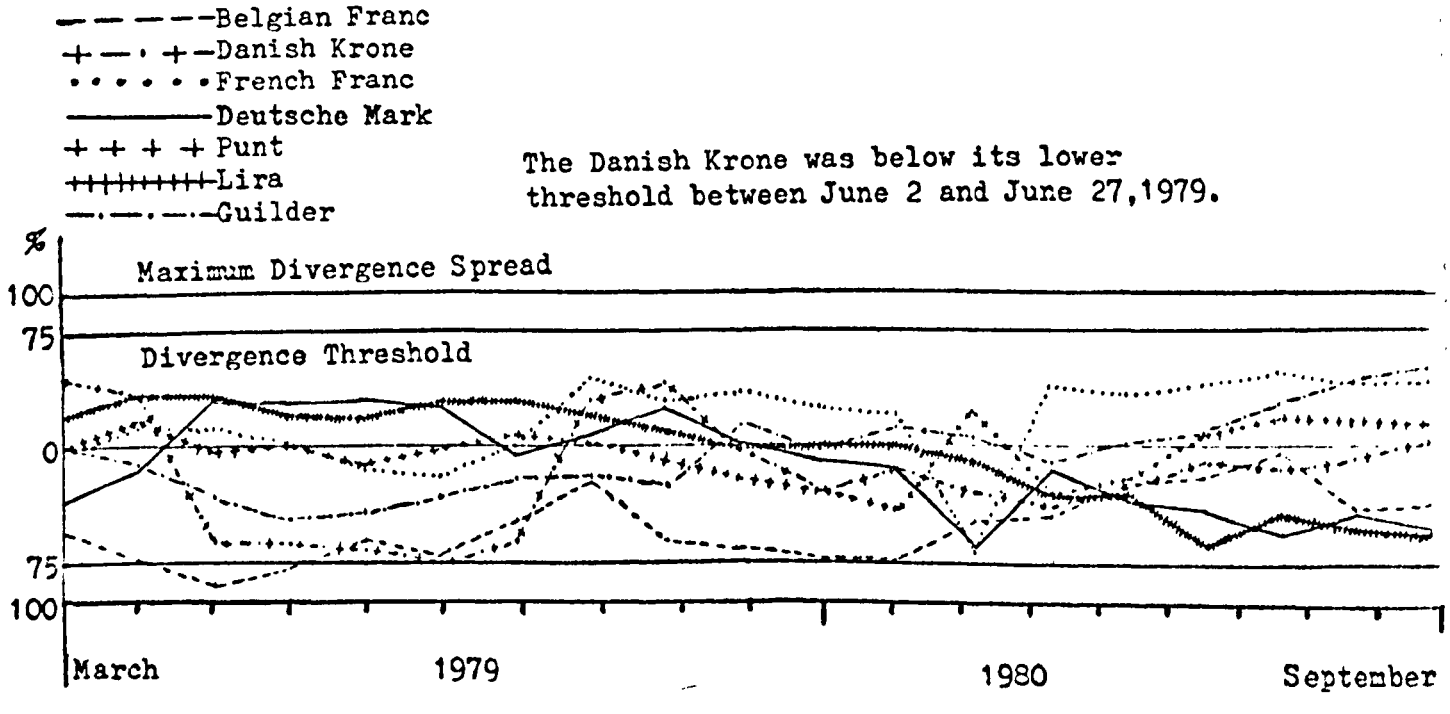
stability has been emphasised. If the EMS succeeds to bring forth such stability among interdependent members, it could prove a good example on the global stability question. The EMS was a strategic retreat from full flexibility into organised floating, encouraging the creation of such areas, stable inside them, cooperating among them to hold exchange rates in a broadly stable relationship. Such a path however could not make the SDR and currencies like the ECU competitive or mutually exclusive alternatives. A properly devised ECU could be compatible with international, rather than purely regional, reform and also a strengthened SDR in the future. The IMF role will also be important in ensuring that bilateral discussions between blocs take into account the interests of the rest of the world.

8.D. Implementation of the European Monetary System

8.D.a. Historical and Quantitative Analysis

The EMS started functioning officially on March 13, 1979. However, all nine currencies were behaving as if they were

Chart 8.1. Evolution of the Divergence Indicator



inside the EMS since the October realignment. It acted as a prerequisite move, anticipating possible tensions between the DM and other smaller currencies, while the US policy stance achieved dollar stability which lasted up to the end of April. All these contributed to a smooth start. However, the sterling strength forced the break in the sterling link soon after the EMS started, on March 30. Ireland could not manage the best of both worlds. It was a reminder of modern exchange rate volatility and the form of pressures that the EMS was set up to contain. If sterling was inside the EMS, pressures and an "upward" crisis would develop. Dollar pressure came back in May and continued in the summer. The familiar Snake pattern evolved. The BFr and later the DKr slipped to the bottom. Intervention was taken to counter pressure and at times both currencies passed their divergence thresholds. More restrictive German policies and interest rate rises, after four years of credit ease, brought renewed DM demand. Economic trends inside the EMS were suggesting that it would collapse. The Bundesbank had to spend DM8.0 bn. Pressures were finally eased with the October 1979 realignment. It took place after a restrictive policy on the part of Germany, trying to preserve its goals, and other members had to follow. That was a Snake problem and a major EMS question. The DKr was further devalued against the DM in November 1979. Since December 1979 and up to early 1980 political shocks were dominant. Dramatic gold price rises took place. The dollar showed considerable resilience due to the XB situation of major countries, the October 1979 US measures and fears for world peace. During that period the EMS was fully stretched. A new interest rate rise did nothing to relieve pressure until the DM, affected mostly by the dollar rise, occasionally replaced the BFr as the weakest

currency. German authorities, trying to avoid imported inflation, intervened heavily and eased inflow controls to fund the current account deficit. In Italy, economic deterioration and political uncertainty led the Lira to become, from being the strongest, the weakest EMS currency at the 6 percent margin. The period from May to the end of summer was quiet. The DM was the weakest currency at the 2.25 margin and so relieving pressure on other weak currencies. These countries subsequently relaxed their monetary policies. Uncertainties arose in Germany for investors, in view of inflation increases out of depreciation. Germany continued its tight policy.

The average change of EMS currencies against their ECU central rates, Table 8.1, demonstrates a significant degree of stability, remarkably enhanced in the course of 1980.

Table 8.1 EMS currency changes against ECU central rates.

Currency / Year	BFr	DKr	DM	DG	IRL	FrFr	Lira	Average
Dec 79	-2.21	-8.80	0.90	-0.60	-1.10	-0.10	-1.00	-1.84
Aug 80	-1.60	-9.20	0.52	0.03	-0.29	-0.12	-3.70	-2.05

From March 12, 1978. Source: Eurostat, Monthly Statistics.

Such stability should be compared with the almost 6 percent average change between 1972 and 1978 and about 7 percent in the most unstable years, 1973 and 1976. The average variability would have been even smaller had it not been for the DKr and the Lira troubles in 1979 and 1980. Bilateral rates against the dollar, Table 8.2, indicate a generally more stable period, enhanced in 1980, with the exception being sterling which undertook considerable appreciations. A combination of heavy intervention and collaborative economic policies by major governments reduced currency fluctuations. The divergence in the XB situation between the US and other major countries narrowed in late

Table 8.2 EEC currency changes against the US Dollar and the DM.

Percent

	Currency / Year	BFr	DKr	DM	DG	IRL	FrFr	Lira	£
Dollar	Dec 79	4.44	-3.32	6.45	4.80	4.03	6.03	4.50	8.39
	Aug 80	2.20	-7.70	3.53	2.66	3.29	2.87	-1.00	15.35
DM	Dec 79	-3.46	-11.10	-	-1.78	-3.03	-0.97	-2.10	1.90
	Aug 80	-2.25	-9.60	-	-0.67	-0.90	-0.71	-4.90	12.10

From March 12, 1978. Source: IFS.

1978 and in 1979. The UK shifted into deficit too, although other factors, as will be seen below, kept sterling strong. With respect to the DM, remarkable stability was demonstrated by the FrFr and the DG. It was less so for other currencies while the situation was disappointing for the DKr. The situation improved considerably in 1980. Table 8.3 indicates the average currency changes against the DM and the standard deviation for the period March 12, 1979 to August 31, 1980 for each currency.

Table 8.3 Average Currency Changes and Standard Deviation against the DM, March 12, 1979 to August 31, 1980

Percent

	BFr	DKr	DG	IRL	FrFr	Lira	£
Annual Av.	-1.15	-4.88	-0.34	-0.46	-0.35	-2.06	6.15
SD	3.26	8.73	2.03	3.63	0.87	0.05	6.01

Source: IFS

These figures are significantly smaller compared to those of the 1972-78 period, except for the DKr. Direct comparisons though cannot be made given the different time periods. Taking now all currencies together for each year against the DM, Table 8.4, differences arise depending on which currencies are included. Standard deviations in 1979 are smaller. Average changes though are higher to those of 1972 and 1975. The situation deteriorates when sterling and Lira are excluded due to their low fluctuations. The high DKr depreciation created the rise

Table 8.4 Annual Average Currency Changes and Standard Deviations against the DM.

Percent

	EEC		EMS		EMS less Italy	
	Average	SD	Average	SD	Average	SD
1979[x]	-2.92	3.99	-3.14	4.31	-4.06	4.03
1980[xx]	2.04	3.91	0.65	1.44	1.18	0.65

[x]1979 from March 12, [xx]from January to August. Source: IFS.

in the figures. Average changes though are significantly reduced in 1980, however they are no smaller than those in 1975. Sterling's high appreciation accounts for that. Standard deviations though are smaller. The position dramatically improves when sterling is excluded. The results with respect to the rest of the currencies are more satisfactory compared to any other period in the seventies, if one is to look at both the means and the standard deviations.

One would be rather surprised at these results. This stability, considerably enhanced in 1980, was not matched by economic stability among members, see Tables 8.5, 8.6. In fact, the situation at the end of 1978 was worse than that of 1971. Such divergences indeed created exchange market pressure, combined with dollar weakness and German restrictive policies. Intervention, substantial for certain currencies, and realignments followed. However, certain currencies were surprisingly strong given the economic problems of these countries. Divergences increased in the course of 1979 and 1980, but currency fluctuations became even more stable. A monetary explanation would be that Germany's monetary policy is less restrictive given that money demand has shifted from the DM to the dollar. This does not seem to be a convincing answer. A non-monetary explanation would be the unfavourable terms of

Table 8.5 EEC Inflation Rates, Annual Percentages

										EEC		EMS		EMS less Italy	
	B	D	F	G	Ir	It	N	UK	L	Average	SD	Average	SD	Average	SD
1979	4.6	9.8	10.7	4.1	13.2	14.7	4.2	13.4	4.5	8.76	4.46	8.18	4.38	7.25	3.81
1980*	6.8	13.7	14.1	6.1	17.6	21.4	6.9	19.8	6.4	12.50	6.17	11.60	5.90	10.20	4.76

* January-July 1980 except for Ireland (January-May 1980). Source: IFS

Table 8.6 Percentage Change in M1, M2 in 1979

									EEC		EMS		EMS less Italy	
	B	D	F	G	Ir	It	N	UK	Average	SD	Average	SD	Average	SD
M1	2.5	9.9	11.7*	3.6	8.1	23.7*	2.8	10.2	9.0	6.9	8.9	7.3*	6.4	4.0*
M2	13.2*	10.3*	13.1*	6.9	13.6	19.4*	11.5	12.9	12.6	3.5	12.6*	3.8*	11.4*	2.8

Asterisk indicates larger figure than in 1978. Source: IFS

trade for Germany due to rapid price rises of imported goods. Further, recession reduced considerably the positive trade volume for Germany. XB problems, Table 8.7, largely checked the upward DM pressure enhancing EMS stability. One would expect though inflation differentials to feed through the XB and create strains.

Table 8.7 The Balance of Payments of the EEC Countries in 1979

Million US Dollars

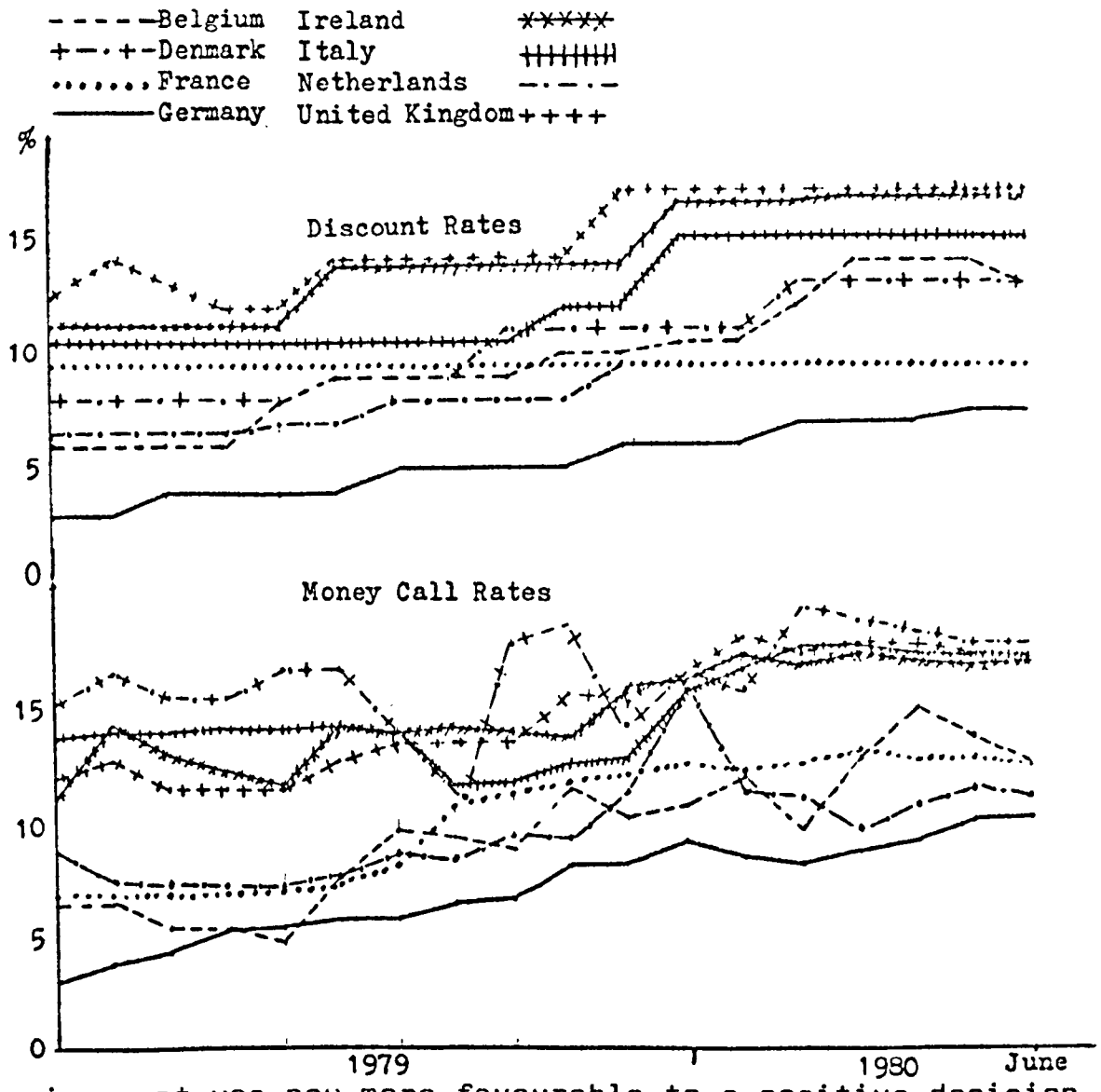
	B	D	F	G	Ir	It	N	UK
Current Account	-3837	-2965	1575	-8510	-1495	-1010	-2359	-4922
Official Balance	-2864	161	-35	-3540	...	218	-7529	-2864

Source: IFS

Inflation rate convergence exists only inside the hard core Snake members, excluding Denmark. Inflation performance though, should not lead one to have misgivings about rigid exchange rates in the future since; (a) policies induced by the system may need more time to become effective, (b) external cost-push factors, affecting members differently make it difficult to attribute recent price level developments to recent economic and exchange rate policy, and (c) price indices have been affected heavily and differently for each country, distorting the measurement of inflation. Nominal interest rate evolution since 1978, chart 8.2, seems to indicate more monetary cohesion among the members. Our calculations though, on real interest rate development, suggest that the policy to fight inflation is more pronounced in the Benelux and Germany, much less so for France, Denmark and the UK and far worse for Italy. However, the factors attributing to inflation should not be ignored as well as the fact that some countries' financial systems function more through quantitative controls.

The UK case deserves special attention. The political

Chart 8.2 Interest Rate Evolution



environment was now more favourable to a positive decision on the EMS issue. Secondly, while fears in 1978 were on the costs of holding sterling up, the situation was now reversed due to the North Sea oil production and high interest rates in spite of serious economic problems. Arguments to join the EMS emerged, assisted by internal reasons to fight inflation and improve industrial competitiveness. Uncertainty existed though on whether sterling would not fluctuate widely, given that the oil price might fall as it did in 1974, economic problems remained, and interest rates, due to their effect on sterling, could be a factor contributing to instability. The oil factor and world political uncertainty could make sterling an unstable currency. EMS instability could be aggravated once sterling joined. The abolition of exchange controls

though could contribute to a more realistic sterling level, avoiding potential instability if controls were abolished once sterling was inside the EMS. Sterling had shown considerable instability against the ECU, appreciating 11 percent in the January-July 1979 period, depreciating by 10 percent by November and then appreciating again by 11 percent up to September 1980. The UK still worried about the lack of external EEC policy and the level at which sterling should join. Other disputes existed too, raising the anti-EEC feeling, as well as the question if the UK could miss the second stage once it got off the ground.

8.D.b. Issues Rising out of the Operation of the European Monetary System

The short period does not allow for a proper assessment on the EMS performance, especially when measured against its ultimate objectives. However, a number of issues can be raised here.

The EMS has so far achieved greater exchange rate stability and curbed overshooting. The Lira experienced larger fluctuations within its wider margins. All fluctuations though are considerably smaller than those of the Snake period.

However policy coordination has yet to become effective. Optimism only exists if one comes to explain current inflation rates. Also wage settlements seemed more restrained in contrast to the post-1973 period and more convergence in members' strategy seemed to take place. By August 1980, six of them applied restrictive budgetary and monetary policies while Germany, France and Luxembourg applied restrictive monetary policies and neutral budgetary policies. All gave priority to combat economic imbalances manifested in various mixes of inflation, public finance and XB. The question though is if

such policies would continue if the recession deepens further.

As a result of lack of effective coordination the familiar Snake pattern evolved. Different preference on EMS currencies continued as well as the inevitability of periodic tension on the system linking the DM with high inflation currencies.

The Bundesbank was firm on its restrictive policies. Before the realignment, and despite the EMS pressure, it raised its interest rates. That, combined with its intervention tactics, rejected the view of holding the DM down to assist other weak EMS members and indicated the Bank's high priority to fight inflation and keep the virtuous circle. The EMS ranked second to these objectives. Signs of the dominant DM role were also present in 1979. Further, German money supply was very much inside the target, for the first time(12). Germany was looking for the best of both worlds i.e. improved intervention cooperation and tough interest rate policies among major countries leading to exchange rate calming without Germany making any monetary concessions, and so trying to reduce the inflationary twist brought out of the exchange rate stability.

The two realignments indicated the deflation need even for smaller members. This point has been extensively analysed in chapter six. Also, the September realignment was delayed, given that intervention reached disquieting proportions.

The dollar kept being the usual intervention currency. Furthermore intra-marginal interventions have risen substantially. However, not all of them served to support member currencies falling below their threshold. The effects of these techniques coupled with dollar rise have been analysed earlier.

The UK authorities did not manage to maintain a stable relationship between sterling and the ECU in order to serve

as a precondition for a future UK entry and the Irish authorities did not achieve a close relationship between the Punt and sterling either. Ireland's inflation was not much better than the UK one. Ireland also had serious XB problems and a high fiscal expansion. The current account deficit was not matched by capital inflows in the absence of free access to the London market. Exchange rate risks and inflation differentials had not established for Ireland a kind of credibility to encourage inflows. However, in mid-1979 the government introduced restrictive measures citing the EMS membership as the principal reason. The Punt's depreciation against sterling created inflationary pressures.

With respect to the divergence indicator the EMS highlighted some of the problems of managing the system. Members often reach their intervention points without having passed their divergence thresholds. The indicator has also other technical complications, see Vaubel (1980). They have introduced a bias, impairing its role. It has been distorted, confusion has risen, while on certain occasions there was secrecy on EEC decisions on the indicator. All these have created a credibility gap, eroding the EMS. Members do not feel obliged to keep their currencies inside the threshold. The BFr stayed below its lower threshold from April to July 1979 while the same occurred with the DKr for four weeks in June 1979. They triggered some sort of policy response, although given the problems of these economies more action was needed. The Commission is more optimistic on its effectiveness, although it recognises the effect of the technical complications. A better test would be if major currencies had passed the threshold too.

Intervention debts were to some extent settled in ECUs. However, dollars remain the main means of payments. Limitations

on ECU use remain. ECU was to be a fully fledged and permanent asset whose risk all members should fully accept. Limitations may be interpreted as a no confidence vote especially by the private sector. Changes have to take place, as mentioned earlier. Some initiatives were taken by both the Commission and private banks. However, further ECU development requires important decisions at national and EEC levels(13).

The Commission rates the EMS as a success and that the latter should not be confused with absence of realignments. It seems though that the realignment need has not been genuinely diminished. Further, part of the inflationary build-up arose because of exchange rate stability. Given the EMS structure, it may not reduce inflation to the extent that inflation of low inflation countries rises, making disinflation of high inflation countries less likely. Given the current influence of real factors, such a possibility may not remain. More time is needed for definite conclusions. Monetary impulses may reduce differentials, otherwise a frequently adjusted peg will not be without problems, especially when other major currencies participate too.

Increased subsidisation and credit facilities were feared to reduce economic adjustment. Such facilities though were not used at all except for Belgium on certain occasions. Coordination did not rise though. The reason was that members' reserves rose significantly after the dramatic gold price rises and they did not ask for activation of EMS credits.

Nominal exchange rate changes are important to assess the profitability of capital movements. However, the competitive position of members is assessed through real exchange rates. Conclusions can also follow on deflation effects rising out of the EMS evolution. Bilateral competitive positions(14) seem

to indicate an improvement in the competitive position for 1979 for Denmark and the Benelux. All other members seem to have lost vis-a-vis Germany, Table 8.8. The situation did not seem to improve in general during 1980 and implied a need for a realignment inside the EMS for competitiveness purposes. Looking at general competitiveness, Table 8.9, results do not seem to change substantially for major members, while a continuous improvement takes place for the smaller ones.(15)

Table 8.8 Bilateral Competitive Positions of EEC Currencies vis-a-vis the DM.

Percent

Currency / Year	BFr	DKr	DG	FrFr	IRL	Lira	£
1978	-3.8	3.3	1.1	0.2	-0.7	-2.8	-0.7
1979	-2.0	-9.7	0.2	6.3	6.1	8.8	10.0
1980 II	-1.5	8.0	0.5	-0.1	4.6	8.4	17.3

- denotes real depreciation, + denotes real appreciation.

Source: Calculations based on IFS data.

Table 8.9 Real Effective Exchange Rate Changes

Percent

Currency / Year	BFr	DKr	DG	FrFr	Lira	£	DM
1978	-2.3	-0.2	-0.4	2.9	-3.0	4.7	1.4
1979	-1.0	-2.4	-3.1	3.8	2.7	9.9	0.9
1980 II	-5.5	-7.6	-2.5	1.1	6.1	12.4	-4.3

Source: Calculations based on IFS data. Wholesale prices.

Another deflationary bias comes out of Germany's restrictive policies and members (e.g. Belgium) frequently complained. Also a deflationary bias may not be excluded in the longer-run in order for certain members to remain inside the EMS.

The problem of policy towards third currencies remained and it emerged early. Belgium and Denmark complained of Germany's policy towards the dollar. Dollar weakness created pressures among the EMS currencies and disagreements emerged

showing that central banks had a lot to learn on a vital aspect of EMS durability, namely intervention coordination towards the dollar. Among the serious difficulties existing in the EMS, the relation to the dollar ranked foremost among them. The world continued to rely on the dollar to the degree of 70-80 percent with no-one anticipating or being anxious to bring a major change. US monetary policy continues to set the tone for global monetary affairs.

Encouraging signs though come out of EMS stability, which could further enhance it. The FrFr has been in demand internationally(16). The DM role in the EMS has risen and France eased some of its stringent exchange controls.

However, by 1980 III, there were fears that currencies had moved out of line with the underlying inflation differences and EMS stability remained for other reasons. The Bundesbank wanted a DM revaluation to avoid imported inflation.

Germany and Holland expressed unease about the effective mobilisation of gold reserves which gave large gold-owning countries an increased amount of financial leeway to withstand pressure on their currencies. Gold turned-into-ECUs was valued at market prices, which more than doubled since the beginning of the EMS. Members draw on their gold reserves without actually selling them. Liquidity creation takes place with potentially dangerous effects.

Nationalist attitudes were still present inside the EEC. Various protectionist measures took place. France defied even the European court in the "lamp war" and finally managed to include lamp in the CAP opening the way for lamp mountains and export subsidies. The budget row divided the EEC. The UK insisted on CAP cuts and reduction on its own large net contribution. Rebates were finally agreed in May 1980, although

at the expense of a 5 percent farm price increase adding £1.1 bn to the CAP increasing its total cost to £16.6 bn. A promise was also made to solve the budget problem in 1981 and convey more funds to regional policy. However, the Fisheries dispute remained and a breakdown in the attempt to create a common policy could bring back the familiar EEC crises even before the CAP reform begins.

The Europarliament, being directly elected, was not as strong as it was expected. Its members gave up the fight to reduce CAP spending on May 23, 1980 five months after they took it up. They came closer to their national parties instead of seeking independence to pursue pan-European objectives. They did not hold their initial position, lacking support from their constituencies.

We are finally left with the EMF question. During the initial EMS stages it became evident that the deadline would not be met. No negotiations took place and major uncertainties remained for the second stage, due to extensive disagreement about the EMF's orientation, objectives and competence. Political reasons were included too. Analytically, the delay stemmed from; (a) procedural considerations. It was a "quality jump" requiring changes in the Rome Treaty. National legislative action was needed too. All these usually require a lengthy ratification by national governments. (b) EEC central bank reserves were now much higher, making members less worried about delays in the proceedings and (c) Unresolved issues existing over the EMF's true nature, involving the status of national central banks. One view was for the EMF to develop into a Federal Reserve system. The other was to develop in a form of a regional IMF. Furthermore, the status of national central banks was not uniform. The Bundesbank was greatly autonomous,

assured by law. Public opinion holds it in high esteem as a guarantor of monetary stability implying that any curtailment of power would be unacceptable. Other members though object just as forcefully on any solution leaving the Bundesbank in overall control. The Bundesbank was somehow disappointed by the current EMS. It was not involved as much as it wanted to be and it feared excessive liquidity effects. It supported a powerful Fund, with effective control on European monetary policy and that the ECU should become as strong as the strongest EEC currency. In addition it would be independent from national government decisions, compatible with the aim of developing a zone of monetary stability, modelled on the independent Bundesbank itself. The German government did not want to go that far, being urged by the opposition to be cautious and avoid EEC liquidity rises, causing an increase in inflation. France also objected to the Bundesbank proposals given its different views on central bank freedom. The French views varied though. They said that they would support a powerful Fund if stability and attractiveness of the ECU could be guaranteed, the role of gold was enhanced and easy gold and ECU mobility existed in the EEC. The EMF role should be completely clear and members in XB problems should be allowed to draw on EMF reserves without agreement from the country whose currency is used. It is doubted though whether the Bundesbank would agree to this last request. The Italian view was for a powerful Fund, like in the Snake. Once Lira was faced with pressure they began favouring EEC responsibility on intervention and credit extension. The Dutch view was divided. The Governor avoided supporting any solution, emphasising though the need of some control, to take place through the Europarliament whose powers were uncertain. The government supported a FRS, while

the Treasury objected to the government rules on the ECU role. The Commission was cautious and undertook technical exploratory work slowly, justifying it on world events. It supported though a maximalist solution and unlimited ECU convertibility. While national central banks would keep intervening to support their currencies, foreign exchange will be provided by the EMF. Opposite views existed on the speed towards the creation of the EMF. The Ortoli view suggested a slow move in order not to deter the UK from joining. The Jenkins view suggested a speedy move to encourage the UK to join, underlying the long-term political importance of the EMS. The US view considered the maximalist solution with caution. An ECU rise might weaken the dollar. IMF considerations also existed. Apart from the sovereignty question there was the gold problem which made certain members unenthusiastic to move towards the second stage. The Bundesbank favoured a modification of the gold-into-ECU mechanism making less automatic the link between the gold price and the amounts of ECUs distributed to central banks. However, this problem would have a vital bearing on upgrading the EMCF into a fully fledged EMF, to have complete ownership of gold and dollar reserves and administer credits. The EEC monetary committee, in a report to the EMF Commission in early 1980, threw down the major political and technical challenge by arguing for a maximalist solution, making the EMF the responsible central bank to develop fully the ECU and meet the objectives set down in the Bremen and Brussels 1978 summits. An ECU with the widest possible degree of acceptability would be tantamount to an increase in international liquidity, necessitating a powerful Fund. It acknowledged though, that incorporating gold into the system is regarded as a major political and technical obstacle. The future ECU role and the EMF structure

are greatly related. The ECU role proposed by the committee, argues for an institution with such responsibilities to imply centralisation of vital aspects of national monetary sovereignty(17). While the delay was certain to take place, it could be better, if it was not too long to avoid freezing the issue, keeping in mind the question of a complete MU rather than establishing a regional IMF, blocking additional progress for an indeterminant period of time. It is very difficult, if not impossible, to put new proposals for ratification before parliament every couple of years. Also it could not foster coordination and bring the changes advocated earlier under the maximalist solution and eliminate the current EMS disadvantages.

CHAPTER NINE THE STRATEGY FOR THE FORMATION OF THE EUROPEAN MONETARY UNION

This chapter has a twofold purpose. Firstly, it states the thesis and secondly, it relates the analysis contained in the preceeding chapters to the conclusions reached.

Section 9.A. answers the basic question of why the EEC needs a monetary union (MU), then it considers the various strategies which exist for the creation of an MU in the EEC, and states the thesis. The strategy, which the EEC members should follow, is proposed as well as the conditions which have to be fulfilled during the monetary integration (MI) process. Furthermore, the advantages of using this strategy are mentioned. The next four sections refer to the analysis on which the thesis is based. Section 9.B. deals with the theory which is relevant for the MI process and examines the policies which members have to follow and the questions arising under the various strategies. Section 9.C. analyses the implementation of the EEC exchange rate arrangements during the seventies, which were based on the coordination strategy and examines, together with the analysis in section 9.B., the ability of this strategy to lead to an MU in Europe. Section 9.D. deals with the ability of the centralisation strategy to lead to an MU. Section 9.E. analyses why the coordination-cum-centralisation strategy should be preferred to the coordination strategy or to the centralisation strategy. Section 9.F. summarises the chapter and traces the future prospects for an MU in the EEC as well as the further research which is necessary in various areas.

9.A. The Thesis Stated

This section, based on the analysis that suggests that Europe needs a monetary union (MU), states the economic strategy that must be chosen for the creation of an MU in Europe, given its advantages over other strategies available.

The analysis relating to the arguments for the creation of an MU in chapter two, and to the decisions to move towards monetary integration (MI) in Europe in chapters four and eight, leads to the major reasons which exist for Europe to look beyond the customs union and towards MI. These are:

a) The necessary long-term security for balanced growth and competition which grew out of the growing interdependence inside the EEC.

b) The need for common policies in order to provide an environment for price stability, economic growth and full employment.

c) The international monetary system (IMS) would be strengthened - by creating a currency which would share with the dollar and yen the responsibilities associated with key reserve currencies.

d) To safeguard the achievements of the EEC - by securing a steady growth path within the EEC and helping to resolve the problems of the IMS.

e) To consolidate the EEC enlargement - by creating a fully operational EEC that has set itself definite objectives and also gives present and prospective members definite objectives.

The analysis in sections 3.A.b., 4.A.a. and chapter seven, derived three major strategies for the creation of an MU in Europe.

(A) The coordination strategy,

(B) The centralisation strategy, and,

(C) The coordination-cum-centralisation strategy.

Strategy (C) is composed of strategy (A) and a form of centralisation which is different to the one entailed under strategy (B), to be explained below.

These strategies can be subdivided into variants.

The coordination strategy has three variants:

(A1) To limit intra-union exchange rate variability, by narrowing gradually the fluctuation margins and/or restricting the scope for parity adjustments. This also involves central bank intervention rules. The commitment to exchange rate unification, together with intervention, is de facto expected to achieve the required harmonisation of monetary policies.

(A2) To achieve ex ante harmonsation of domestic monetary policy directly, which would gradually result in exchange rate fixity.

(A3) To combine exchange rate commitments together with ex ante monetary agreements - i.e. a combination of A1 and A2.

The centralisation strategy also has three variants.

(B1) To establish all at once a single central bank which issues a single currency over a domain consisting of all member currencies.

(B2) To abolish all intra-EEC capital controls and establish competition among national currencies. The most stable currency being expected to outcompete the others.

(B3) To confine currency competition and substitution to a process where only the prospective community currency circulates freely alongside each national currency. It will eventually outcompete the national currencies since it will have a more stable value than the value of its competitors.

The coordination-cum-centralisation strategy entails the creation of a central institution which can be combined with any one of the three variants of the coordination strategy. This institution is equipped with the power to ensure enhancement of the coordination process and to establish a parallel currency. Both measures are expected to enhance MI and eventually bring forth the MU.

The strategy to be chosen requires political feasibility apart from economic viability. It was shown in section 3.A.b. that

political realities would suggest the need for gradualism, allowing for institutional adjustment and a slow erosion of national sovereignty. Variant B1 would then seem unacceptable. The same is true for variant B2, despite its claimed gradualism, since national currency competition could exacerbate national rivalries and frictions and so damage prospects in Europe.

One is then left with a choice between (1) the coordination strategy, (2) the B3 variant of the centralisation strategy and (3) the coordination-cum-centralisation strategy.

This study proposes that the coordination-cum-centralisation strategy should be the one chosen to create an MU in Europe. Based on the analysis contained in earlier chapters, this particular strategy requires that members should accept limitations and binding commitments on policy areas, which will guarantee the absence of discretion and will lead towards a complete MU in the long-run. They should be willing to establish dependence and consistency among their domestic economic policies. Given the initial stage of coordination, the credibility of the venture would be enhanced if members also set parities and fluctuation margins around their currencies. Increasing coordination would tend to reduce these margins. Intervention and/or parity adjustments may occasionally be needed, due to lack of complete policy coordination, during the transitory stages. Jointly agreed and applied rules for these requirements are important for the smooth functioning of the arrangements, together with the commitment to enhance policy coordination. All these suggest the A3 variant of the coordination strategy. Union policies with third countries should also be established, while a regional policy, directly relevant to MI, may not be excluded in certain cases, to ease the MU costs.

However, national policy coordination alone will not bring forth the MU. It would have to be assisted by centralisation. A transfer

of power to a central institution is necessary to promote MI and bring about monetary reform. Both measures will in turn establish a complete MU.

Such an arrangement is chosen because it has the following advantages:

a) It is based on gradualism, which reduces and spreads the transitory costs linked to stabilisation policies. It also facilitates the adjustment of expectations of economic agents and so reduces possible errors when they try to anticipate policy changes.

Such an advantage is disputed under the centralisation strategy.

b) It brings automaticity, which is important for the MI process. Governments try to avoid unconditional commitments and retain their power of discretion and the instruments to exercise it. They keep open the possibility of either violating the coordination agreement or opting out. This strategy provides a mechanism to prevent members from such a discretion and the various frictions that could follow. Automaticity also increases the predictability of decision making by reducing uncertainty and risks and so avoids efficiency losses. It also results in the central institution continuously searching for ways to promote national economic convergence.

Furthermore, such an automaticity is absent in the coordination strategy (A).

c) It enhances the credibility of the MI process. The other strategies could face a large credibility gap if certain conditions are not fulfilled, as will be seen below.

Thus, the coordination-cum-centralisation strategy meets the two major conditions of gradualism and automaticity which make it able to lead to the creation of an MU. The MU will in turn preserve and enhance the EEC objectives, set out in the beginning.

The particular choice of this strategy and all its policy

implications are derived from analysing (a) the policies that members have to follow for the creation of an MU, (b) the implementation of the European arrangements in the seventies, which were based on the coordination strategy, and (c) comparison of this proposal with the centralisation strategy, B3.

9.B. The Theory on Monetary Integration and Implications for National Policies

The analysis concerning the way to move towards MI, in section 3.A.b., suggests that the policies which members must follow depend on the particular strategy which has been chosen for the creation of an MU. The centralisation strategy, B3 would only require members to allow the common currency to circulate alongside their national currencies. Under a strategy where coordination is required, however, a number of policies may be needed, given that external balance (XB) compatibility is required among the members in order to bring about exchange rate fixity.

Our purpose in this section is to point out that under the MI process, members have to undertake domestic policies which must also be consistent. We shall in addition specify the kind of consistent policies which have to be followed, and those required to cope with the various problems which arise from these policies, so that progress towards MU will be assured.

The analysis dealing with these issues concentrates initially on three main areas: (1) The domain of an MU, (2) the theory of monetary policy in open economies under fixed exchange rates, and (3) economic interdependence. These lead into additional analysis concerning the policies which members must follow, which is undertaken by analysing the determinants of exchange rates and their policy implications. The formulation of these policies directs attention also to the control of money supply, the stability of the demand for money and the interdependence of monetary and fiscal policies. Further questions which arise also require

analysis, namely, the choice of the exchange rate regime during the MI process, the policies towards third countries and whether income redistribution should be linked with the progress towards MI.

The analysis concerning the domain of an MU, in sections 2.A.a. and 2.B.a., reveals that automatic adjustment is not sufficient to bring about internal balance (IB) and XB in the EEC. Members require to undertake domestic policies in order to create XB compatibility among themselves. Their degree of openness suggests that an MU is rather advantageous for them and also reduces the size of policies to maintain XB.
Further, the analysis in sections 1.B.a. and 1.B.b. and appendix II suggests that the monetary theory to the balance of payments, as formulated by Mundell and Swoboda, is a rather poor approximation to what one may observe in the real world. Offsetting capital flows may not succeed sufficiently and governments may have a degree of independence in their monetary policy which could frustrate the self-adjustment process. Members embarking on MI must then be willing to undertake the policies which would eliminate such independence.

The necessity for a group of countries to follow common policies is indicated by the degree of their economic interdependence. The analysis in section 2.C.b., based on both trade and capital flows, indicates a rather high degree of interdependence among the EEC members, and between the USA and the EEC. Attention then is focused, in section 2.C.c., on the transmission of economic fluctuations among members arising from interdependence. The comparison of price movements among the members, the analysis of the transmission mechanism in the purchasing power parity (ppp) context and evidence from LINK models, give both positive and negative answers. Such evidence, though, would appear to be unsatisfactory given the limitations of some of the models used.

Generally, the analysis on long and short-run exchange rate determination suggests the need for predictability and stability of the policy variables. Preannounced money supply targets, which in the future will only be gradually adjusted are essential in monetary policy.

Members embarking on MI would then have to coordinate ex ante their monetary expansion rates at a rate which, given the projected growth in real GNP, would be consistent with price stability among them so as to bring forth intra-EEC exchange rate fixity. The analysis in section 4.A.a. also suggests the use of the money base (MB) as a means of controlling the money supply. Certain institutional changes may be required to ensure a correlation between MB and broader aggregates. The A2 variant of the coordination strategy would seem to be suggested. This solution, however, is not without problems, as the analysis in section 4.B.a. points out. Major difficulties exist in estimating correctly future GNP growth rates and income elasticities of the demand for money, while differences in the national structural characteristics of the demand for money would suggest that a rough parallelism of comparable monetary aggregates is inadequate. A lot of analytical work is required to develop a solid basis for ex ante evaluation of the compatibility of announced monetary targets and exchange rates. Mistakes could lead to divergence among the EEC currencies. A more attractive solution, to start with, would then be variant A3, which sets both ex ante monetary targets and exchange rates. If the money supply targets turn out to be inconsistent with the exchange rate targets, central banks would intervene in the exchange markets. It is important that the consequent money supply adjustment be accepted since in this way the money stock would be brought closer to the level required for exchange rate stability. The way to control the money supply for EEC monetary and exchange rate stability would require members to pay attention to the domestic MB component. Assuming no direct intervention,

The analysis on monetary interdependence, however, reveals effects which are important to the policies of the members, one of them being the need for non-sterilizing policies to avoid exchange rate instability. The importance of the US monetary policy for the EEC is also revealed.

Given that small open economies can hardly envisage floating individually, there is a need for consistent policies among the EEC members and between the USA and the EEC, so that national domestic objectives will be reached and the number and size of XB disturbances will be reduced.

Having established the need for consistent national domestic policies, the next question refers to the specific policies which must be adopted. This requires analysis of the determinants of the exchange rates and their policy implications for exchange rate fixity, and this is undertaken in section 3.B.

With respect to the long-run determinants the analysis demonstrates the importance of the PPP theory within the context of the quantity theory of money. The dominance of monetary factors is crucial for the continuation of the PPP rule. Although one should not ignore the variety of structural factors, the experience of inflation in the EEC, analysed in section 3.C.a., appears to demonstrate the importance of monetary aggregate policy.

The long-run tendency of the exchange rate to equal the PPP level, suggests that members heading towards exchange rate fixity, would have to follow similar inflation rates and coordinate their policies to this aim.

The PPP theory, however, entails long-run considerations. Furthermore, overshooting from the PPP level could occur in the short-run. The analysis suggests the importance of the assets market equilibrium model, following a monetary shock, in the short-run. Risk and uncertainty, due to instability in underlying economic conditions, and destabilising speculation could also contribute to exchange rate variability, however, at least over specific periods.

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each national MB expands with the smooth secular expansion in domestic central bank credit. Any inconsistency between money supply growth targets and exchange rate targets would result in non-sterilizing intervention. The resulting disequilibrium in the official settlements would contract or expand the MB, depending on whether authorities sell or buy foreign exchange.
Under this variant, studies are also taken to suggest the monetary expansion rates which would reduce and eventually eliminate the need for intervention and establish genuine exchange rate fixity. Even under this solution, however, the difficulties of establishing completely effective monetary rates should not be ignored.
It should be borne in mind that low inflation rates can be achieved through proper monetary policies, reducing also inflation differentials. A more or less permanent move to low inflation rates would in turn enhance exchange rate stability and make policies more effective. Despite such reinforcement of effectiveness, however, the question would appear to remain concerning the capability of determining the rates which would produce exchange rate constancy. Generally, despite the rise in exchange rate stability, sufficient monetary control, necessary to ensure permanent exchange rate fixity, may not be achieved.

Furthermore, the A1 variant would be a weak arrangement, since it emphasises only non-sterilizing intervention. Even under this rule, there is nothing to prevent authorities from expanding their money stock as much as they desire. Large interventions could result in XB crises which may not avoid instability.

The monetary policy which is being pursued is not independent from the outcome of fiscal policy, as the analysis of section 4.A.b. points out. This is demonstrated by incorporating the government budget constraint into the IS-LM framework. Also, the portfolio approach, elaborated by McKinnon and Oates (1966) and Branson (1972), extends the analysis of the implications of the

budget constraint into the framework of an open economy. The budgetary policy should not result in a monetary-fiscal mix that is not in line with the private sector's desire to accumulate money or with the foreign sector's desire to accumulate the country's money as reserves. The harmonisation of national budgetary policies is then important in securing intra-EEC exchange rate fixity.

The problems do not seem to end here. Three more issues remain to be settled, namely, the choice of the exchange rate regime during the MI process, the exchange rate policy towards third countries and the possible need for a regional policy.

Complete monetary effectiveness would come gradually and, as the analysis in section 4.B.d. indicates, parity realignments would be needed during the transition. They should be carried out in a way which would avoid delays, crises and disruptions, also ensuring discipline towards coordination. Arguments are provided for a crawling peg with a diminishing rate of crawl.

Another important question, analysed in sections 1.B.c., 4.B.c. and 6.A.c., is that the MI arrangements should not be inward looking. The joint float could create exchange rate strains among the members, because it could affect their competitiveness differently, given their different dependence on the rest of the world, and also because their currencies would not be equally preferred during the initial coordination stages. The evolution of the currency bloc must be manipulated in a way that would satisfy each member. Such a task is difficult and complete symmetry may not be achieved. On the basis of the OPTICA findings, which derive a strong conformity of exchange rate changes with the PPP under effective rates, it is proposed that it should be ensured that the weighted average of the effective rates of the members, possibly excluding their trade with one another, conforms to such a rule. At the same time, the nominal exchange

rate margins should be in operation. Some problems of competitiveness may arise, and strains in nominal exchange rate fixing, especially for members with inflation rates above the EEC average. Imbalances could also be created with respect to intra-union transactions. All these would provide an impetus to reduce inflation and enhance coordination, also raising nominal exchange rate stability.

Furthermore, despite the attempt to ensure similar national competitive conditions, international capital flows could create or intensify strains in nominal exchange rate fixing, given the semi-integrated state of the EEC and the different preference among the EEC currencies. Such a danger is more evident for capital flows between the USA and the EEC. Progress towards MI may be difficult without consistent national domestic policies, implemented on a world basis. The analysis in section 6.B.a., based on the seventies, points out that such a need has been recognised to promote world stability.

Finally, certain members may be faced with costs during the implementation of all the above policies. In the absence of measures to ease these costs, they could become a cause for the failure of progress towards MI. The analysis in sections 1.B.a., 3.A.a. and 3.C.a., indicates that resource transfers may be required to level off national productivity differentials, when equalisation of nominal factor payments takes place along with MI. Temporary transfers may also be needed since, despite recent evidence on the Phillips curve, the transitory costs to the high inflation countries may not be insignificant.

To summarise, under a strategy where coordination is required, members must: (a) coordinate their monetary and budgetary policies, (b) accept non-sterilizing intervention, (c) accept timely realignments, (d) adopt common external exchange rate policies, and (e) implement a regional policy, whenever this is required.

Indeed, under the coordination strategy (A) these conditions should be sufficient to lead to an MU. Under this strategy, however, two important questions remain. Firstly, the whole responsibility lies with the national authorities who must establish the proper policies. The question is whether members behave in practice in this way. Secondly, doubts exist whether complete monetary effectiveness can be finally established. If one or both of these conditions are not fulfilled, the inadequacy of the coordination strategy becomes evident. Other strategies, requiring additional or different measures, may have to be followed. The experience from the implementation of the coordination strategy in the EEC, to which we turn now, will help us answer these questions.

9.C. The Implementation of the Coordination Strategy in Europe

The analysis in chapter four indicates that the 1972 European arrangements, which were to establish an MU by 1980, were based on the A3 variant of the coordination strategy. This section refers to the implementation of these arrangements. It aims, firstly, to examine the extent to which members fulfilled the required policies, which were specified in the previous section, and the importance of these policies to the MI process. Secondly, to see the degree of currency stability and convertibility inside the EEC by analysing the degree to which the EEC currencies moved together, the progress on capital control dismantling and the degree of capital market integration. Thirdly, to add to the debate on the adequacy of the coordination strategy for the creation of an MU.

The national domestic policies and objectives are analysed in sections 5.C.a. and 5.C.b. and the analysis is largely based on national rates of growth, the EEC average, standard deviations around the average and ranges. The estimates on money supply

rates indicate high and variable national growth rates, while the differences in these rates tended to increase among the members with the increase in the average rate. The rise in the dispersion, however, should not lead one to the immediate conclusion of absence of policy compatibility, given the national differences in the structural characteristics of the demand for money. Indeed there should be a given degree of deviation among the national monetary growth rates for exchange rate stability. A more proper analysis would require to estimate the national rates which would be compatible with exchange rate stability and then examine the degree of divergence of the actual rates from such rates. One cannot ignore the indication, though, that the countries with the fastest money supply growth rates recorded the highest inflation rates during the period concerned, while the opposite happened for the countries with the slowest rates. Moreover members felt free to diverge, some of them considerably, from their preannounced targets. The excessive money supply growth was also assisted by an inconsistent monetary-fiscal mix. Lack of policy coordination would then seem to be suggested.
The inflation differentials increased dramatically among the EEC members. Such differentials increased further along with the increase in the EEC average, remaining high for most of the period. This kind of dispersion would not appear to make the EEC pattern robust. Exchange rate adjustments would be required, some of which might not be smooth, timely or easily accepted. Although substantial differentials were recorded, this dispersion would be a more accurate indicator of the need for nominal exchange rate adjustment if the inflation rates were adjusted for the real exchange rate changes, which each member experienced vis-a-vis the EEC average.

National domestic policies were subject to frequent changes in an environment of high inflation, considerable national

differentials in the inflation rates and the XBs and irregular growth. They resulted in frequent changes in expectations concerning the exchange rates, as the analysis in section 5.C.b. indicates. Rapidly shifting interest rate differentials took place, while both uncovered and covered differentials did not evolve in a similar way among the members. These findings would imply significant short-run exchange-rate variability among the member currencies. Furthermore, one should recognise the limitations of the asset market equilibrium model in determining such variability. The effects of uncertainty and risk were also important, given that policies frequently became erratic, unstable and unpredictable. They made exchange rate forecasting a futile exercise and market operators had to change expectations continuously. Destabilising speculation was not avoided in certain periods.

Within the group of domestic policies the effects of foreign exchange market intervention were important, in the absence of sufficient coordination which resulted in frequent interventions to preserve the exchange rate margins. The analysis in section 5.C.c. suggests that there were periods when national authorities practiced sterilization, judging from their policy behaviour. The analysis on the evolution of the MB components also appears to indicate such a behaviour, although this evidence would not be conclusive, since a negative relation between changes in net domestic assets (ΔNDA) and capital flows (C) is open to both offsetting capital flows and sterilization.

Our econometric analysis to check for sterilization, in sections 5.C.d. and 5.C.e., concentrates on the Kouri-Porter capital flow equation, a reduced form of a macroeconomic model (OLS) and the Argy-Kouri version which incorporates the authorities' reaction function along with the above equation (2SLS). The analysis in appendix II points out that this model has certain advantages

over the partial equilibrium model, but it also suffers from certain defects which make the results tentative in nature. Authorities may not directly control certain NDA components, while the complex relationship between domestic and foreign interest rates may affect the offset coefficient. Further, simultaneity exists between C and ΔNDA, while national monetary policies may not be neutral with respect to XB. The ΔNDA coefficient may then be biased. Argy and Kouri incorporated the authorities' reaction function to deal with the simultaneity bias. Their results have been questioned though due to mispecification of the reaction function, since they did not include the possibility of discount borrowing. Our analysis includes such borrowing. However, the need would seem to be for a complete set of equations and future research should be directed towards producing such models in less disaggregated forms, compared to the ones already existing. Serious difficulties exist in constructing such models, including the unavailability of reliable data, institutional detail and the lack of stability of the demand function for assets as they become perfect substitutes and individual structural equations cease to exist as well-defined functions. Information on the key question of sterilization is provided by the ΔNDA and CA (current account) coefficients in the Kouri-Porter approach and C and CA coefficients in the equation determining NDA in the Argy-Kouri approach. Absence of sterilization implies coefficients equal to -1 in the first case, while complete sterilization implies coefficients equal to -1 in the second case. More trustworthy results would be expected from the second approach, given that it attempts to cope with the simultaneity problem. Similar results in both approaches would indicate the importance of discretionary policies during the period.

The results obtained indicate that no conclusions can be drawn for Belgium and France, given the insignificance or the wrong sign of the coefficients and/or the inconsistency in their values.

Under the single equation approach (OLS), indications only exist for sterilization for Denmark and Germany, given the insignificance of the CA variable. The same applies for the Netherlands, given the significant difference between the ΔNDA and CA coefficients. The estimates of the ΔNDA coefficient range from -0.40 to -0.50 for Denmark, -0.22 to -0.44 for Germany and -0.56 to -0.68 for the Netherlands. Under the two-equation approach (2SLS), the results become more definite for Denmark and the Netherlands. For Denmark the C coefficient ranges from -0.69 to -0.76 and the CA coefficient ranges from -0.82 to -0.85, while for the Netherlands they range from -0.61 to -0.65 and -0.70 to -0.80 respectively. The indication for sterilization in Germany remains as the C coefficient ranges from -0.78 to -0.81. The two approaches do not seem to produce different results on the sterilization question. The two-equation approach, however, reinforces and makes the results more definite.

The tentative conclusion of systematic sterilization comes as a surprise for the small members at a moment where the opposite has been frequently claimed, given their interest for exchange rate stability. Sterilization seems to have been pursued by more than one country, which makes the fixed exchange rate system unstable. Instability may also have been created when only the major country, Germany, sterilized, given the unwillingness of the others to a continuous adjustment.

The functioning of the Snake and the policies followed would suggest that members used their power of discretion to the detriment of the MU. This is more evidently demonstrated by analysing their behaviour in three vital aspects for the Snake survival, namely the questions of sufficient policy adjustment, timely realignments and a common exchange rate policy towards third countries.

The analysis in section 6.A.a. would suggest that each member did

not adjust sufficiently. The coordination strategy did not secure the discipline required for each member. Germany did not offset the deflationary effects of DM appreciation and based its policy on upward floating to achieve the lowest possible inflation rate, it did not intervene in the Snake sufficiently, and sterilized frequently. Small members did not adjust their external deficits, due to adequate finance provided to them, while major members left the Snake because they were not willing to undertake the required adjustment. More discipline could have occurred if the regional policy had proved effective. The analysis in section 5.E.a. would indicate otherwise. Resources were lacking and certain members objected to these rising.

The analysis in section 6.A.b. reveals that members failed to agree on timely realignments, causing frequent undesirable implications, which could have been worse if all major currencies had participated throughout the period. The adjustable peg failed in this respect as members did not accept any curtailment in their autonomy in order to establish a crawling peg. Even this system, though, would appear to need large realignments in certain periods, given the large national economic divergencies. As section 6.A.b. explains, even the adjustable peg needed a set of criteria, concerning the need for realignments, to establish a smooth functioning.

Finally, the coordination strategy in Europe lacked an exchange rate policy towards third countries. The analysis in section 6.A.c. suggests that arrangements fell short of assuring members' competitiveness. Our estimates, however, use wholesale prices and conclusions on competitiveness are highly sensitive on the index used. Members failed in their attempts to adopt a common policy towards third currencies. Each major country based the evolution of its currency solely on national preferences, putting inevitable pressure on the others, especially under the unsettled IMS.

The above evidence of a general lack of policy coordination appears to be compatible with the analysis on the direction and size of the EEC currency movements, in sections 5.B.a. and 5.C.b., and the analysis on convertibility in section 5.D.a. Substantial divergencies occurred among the EEC currencies. Overshooting also occurred which frequently was abrupt and significant, widening the differences among these currencies.

This period also witnessed an intensification of unilateral capital controls, retarding convertibility and so affecting the MU adversely. Controls also postponed the domestic corrective action required. Coordination, which would render such controls unnecessary to defend exchange rates, did not occur. Convertibility is the principal factor for capital market integration. The degree of such integration is measured by both analysing interest rate levels and testing for the interest parity theorem. This approach avoids the problems of interpretation of the findings of the capital flow and capital reflow approaches. It concentrates on prices and involves a notion of efficiency. However, it says little about the objects of policy and contrasts the covariability view which takes into account the effects of different levels of risk among the international financial assets. Our analysis on interest rate levels indicates that the tendency for national interest rate differentials to narrow was not strong, irreversible or even sustained over the period. Furthermore, the testing of the interest parity theorem indicates that equilibrium was hindered due to factors such as capital controls, costs of buying knowledge and risks of acting with incomplete knowledge. The need for stable policies and coordination to reduce these obstacles is once more emphasised.

Generally, the coordination strategy was not implemented properly in Europe. Systematic studies never took place to suggest the appropriate monetary targets whose implementation would have

provided the proper test on the ability of this strategy to bring forth an MU. The lack of consistent policies created currency instability, divergences and controls. Three major currencies opted out and many realignments, some of them large, occurred as the coordination effort had been abandonned. Parities were adjusted a number of times and their durability was questioned. Lack of overall discipline expected by the MI venture and lack of progress on MI did not assist in the achievement of the major EEC goals, set out in the beginning of this chapter.

The task to create an MU by 1980, based on the coordination strategy, failed in the absence of fulfilment of the required policy conditions. Given the causes of failure, one should insist that members attempt to establish all such conditions in the future. However, the implementation of this strategy proved its major disadvantage, which inhibits the successful implementation of these policies, and makes this strategy rather inadequate for the creation of an MU. This has to do with the fact that it implies discretion. It is expected that national authorities behave properly to enhance stability. This, however, is not certain. No mechanism exists to prevent them from violating the coordination agreement and diverge or opt out. There is no assurance that such agreement will be renewed and there is no automatic process by which this discretion is reduced over time.

9.D. The Centralisation Strategy, 83

Some critics of the coordination strategy propose the creation of an MU, under a process based solely on monetary reform, by introducing a stable CPC which will gradually replace the inflating national currencies through market forces. This section aims, firstly, to elaborate on the way this strategy functions and secondly, to assess its ability to lead gradually towards an MU.

The analysis in section 7.B.a. indicates that a CPC would circulate alongside the national currencies. Its stable purchasing

power would be secured in terms of a representative commodity basket, by adjusting the rate between the CPC and the national currencies in a crawling peg formula. This adjustment would be based on a weighted average of inflation rates expressed in national currencies. When it replaces all national currencies, its supply should be subject to a monetary rule which would guarantee its stable purchasing power.

The supporters of this strategy emphasise an element of attractiveness which, they argue, exists in relation to the minimisation of the transitional costs to reduce inflation since the inflating national currencies would be replaced, rather than stabilised, by this new stable currency.

While this approach would bring automaticity, the analysis in sections 7.B.d. and 7.C.a would suggest a number of major problems which make the outcome of this proposal uncertain. These refer to the possibility that the CPC may not succeed in replacing the national currencies, that it might not ensure gradualism or the absence of a stabilisation crisis, and that its stability would be questioned at the final stage.

It can be argued that this scheme appears not to take into account the analytical distinctions which are important for the competitive process in the currency markets, such as those between monetary stability and predictability, interest bearing and non-interest bearing money, and the various functions of money. The CPC might then fail to replace the national currencies. This in turn would imply an end to the MU plans.

Assuming that the CPC manages to come about, the question remains as to how quickly this would happen. Uncertainty exists and the answers vary from a swift spread to a gradual replacement of the national currencies. The probability of losing gradualism could prevent any attempts of using this strategy.

If the implementation of this strategy results in a loss of

gradualism, the stabilisation crisis may not be avoided. The absence of such a crisis is due to the fact that, with this new unit, inflationary expectations are eliminated because the CPC has an absolute value guarantee which takes the form of an exchange rate guarantee vis-a-vis the national currencies. This procedure, however, can work only as long as the CPC remains a parallel currency. Therefore, for the CPC to make sense, its introduction has to be gradual.

The danger of such a crisis exists even if gradualism can be assured, due to the differential speed with which the CPC will spread over the community and the uncertainty as to where in the community it will initially spread. If it spreads firstly through the more open and central regions the crisis may not be avoided in the high inflation periphery. If on the other hand it spreads firstly through the periphery, the structural problems of this area could further deteriorate. The coordination strategy seems to be better placed, since it recognises the need for stabilisation and suggests measures to ease the stabilisation costs.

The supporters of the centralisation strategy emphasise the difficulties in building an effective monetary rule. This strategy, however, needs such a rule in the end. One cannot possibly escape from the relevant studies which are required to suggest the correct rule. Further, it is highly questionable whether the stable purchasing power of the CPC can always be guaranteed at the final stage. A permanent guidance on expectations might not result. The supporters of this strategy seem also to contradict themselves with respect to the ability of a monetary rule to bring about a specified inflation rate.

To summarise, uncertainty exists concerning the CPC success, its swift or gradual spread and its pattern of penetration throughout the Community. Undesirable implications could follow ranging from failure to create an MU to the loss of gradualism and the

occurrence of a stabilisation crisis. Stability may not always be ensured at the final stage. All these problems would seem to open up a credibility gap in relation to this strategy. While it could bring about the benefits expected, uncertainty about the final outcome, indeterminances and contradictions would tend to undermine any sympathy with regard to this approach for the EEC.

9.E. The Need for the Coordination-cum-Centralisation Strategy

The analysis in the previous two sections pointed to the doubts about the efficacy of the centralisation strategy (B3) and the coordination strategy (A) in establishing an MU in the EEC. While the former strategy indicated the uncertainties about the possible outcome stemming from currency competition alone, the implementation of the coordination strategy in the EEC indicated firstly, the importance of its various policy conditions, and secondly the effect of the power of national discretion. It is this power which prevented the coordination policies from being properly implemented. If therefore a mechanism could be found wherein this power can be reduced over time, one would hope that the proper implementation of these policies would follow and that exchange rate stability would be enhanced.

This is where the need arises to supplement the coordination process with a centralisation process, that is a coordination-cum-centralisation strategy. Coordination implies that the policies which were specified in section 9.B. will be followed, while centralisation will aim to (a) ensure the proper implementation of these policies, and (b) bring forth monetary reform which is necessary in order to enhance further the EEC monetary control and stability, and assist in establishing the final stage of MI - that is a complete MU.

This section aims to set out the type of centralisation process

of this mixed strategy, that is to analyse the role of a central institution and the ways it will achieve the above aims.

The analysis in section 7.A.b., 7.A.c. and 7.C.a. points to the need to create an autonomous central institution. Reserve pooling would take place in this institution, which would gain control over national central bank assets. By giving it its own reserves and conferring to it the power to promote integration, the irreversibility of the MI venture would be emphasised. This institution would enhance automaticity through (a) the introduction of a CPC, (b) the supervision of the exchange rate arrangements, and (c) the implementation of credit conditionality.

The institution would launch and gradually spread the CPC. National central banks would be credited with CPC at this institution against the deposit of reserves. The CPC would be the crucial feature of the proposed strategy, used as an official currency during the initial stages, while it would aim to become an international private money in the future. Under this strategy, a number of measures would be vigorously pursued to stimulate the establishment of the CPC as a private asset. The nominal exchange rate evolution of the EEC currencies would be linked in terms of the CPC. Maintenance and gradual reduction of the intra-EEC band would require coordination among the members. Also certain technical arrangements would be needed in the transitory stages which would assist the CPC role as a private asset and would also ensure its coexistence with the national currencies. When it becomes the international private money to be used by the EEC borrowers and lenders, it would assist in enhancing the EEC monetary control and it would act as the instrument for a unified EEC capital and money market. It would protect the intra-EEC relationships from potential instability emanating from abroad, and it would permit the EEC to exercise flexibility against the world without disrupting the stability of the intra-EEC exchange rates. The

institution would control the growth of the CPC and would be able to influence the monetary affairs of the EEC countries. It would enhance convergence by promoting coordinated policies conducive to stability throughout the EEC.

The central institution would also supervise the exchange rate arrangements, including interventions. It would control the intra-EEC arrangements and those between the EEC and third countries, ensuring stability inside the EEC. Firstly, it would develop a mechanism to carry out timely exchange rate adjustments. It would also coordinate the intra-EEC exchange market interventions, based on an objective evaluation of the cyclical XB position of the members. Secondly, it would decide on the CPC float. This policy would, in certain periods, include interventions. Reserve pooling to the institution would make such a task feasible. Later, as the CPC becomes an intervention currency, it would also be used on such interventions against dollars or SDRs. The institution would exchange part of its dollars against SDRs, in an IMF substitution account, so that the MI venture would be compatible with world reform rather than being a sign of regionalism.

The shaping of external policies would be facilitated by the existence of this separate institution. It would also become the focus of agreement with third countries in shaping consistent policies conducive to world stability.

Finally this institution would have the means to grant credits to members for their interventions and other XB problems, instead of the granting of credits by members bilaterally. Conditionality on these credits must be given a real content since it would be a vital means of promoting integration. Also, the institution by taking measures to absorb a share of the lending capacity of private markets and by preventing the excessive use of the exchange rate instrument, would be expected to enhance the effectiveness

of conditionality.

All these measures would tend gradually to reduce the power of national discretion which exists in the coordination strategy (A) and would close part of the credibility gap. A difficulty remains, however, namely that of establishing the monetary expansion rates which would guarantee exchange rate fixity. The institution would provide the impetus and undertake studies to suggest the proper targets. Its policies would ensure that members move to fulfil these targets and adjust them further towards more stability. The question on the ability to ensure permanent exchange rate fixity, however, would appear to remain. At this point the centralisation element becomes important. As coordination progresses, the institution would also take measures to penetrate the CPC use in the private sector. So, substantial CPC denominated debt would be issued to give the private financial institutions encouragement to accept deposits and make loans denominated in CPC. Hence the use of CPC would increase. As the bulk of the EEC money would be held in CPC at some point in the future, the CPC would eventually replace all national currencies. The EEC monetary policy would accordingly be fully determined by the central institution.

To conclude, when moving to create an MU, members should adhere to the coordination-cum-centralisation strategy. They should accept the policy conditions of the coordination strategy (A3), pool reserves and transfer power to a central institution. This institution would make the coordination process effective. It would also launch the CPC in order to assist MI and establish eventually a complete MU.

9.F. Summary and Future Prospects

Various reasons lead to the need for MI in the EEC. Progress on MI requires a strategy to be followed. There are three main strategies: the coordination strategy, the coordination-cum-

centralisation strategy and the centralisation strategy. The first two have implications for national policies. Evidence indicates that the coordination strategy is rather inadequate for the creation of an MU, while doubts remain over the effectiveness of the centralisation strategy. The coordination-cum-centralisation strategy is better placed for such a task and it is the strategy suggested here for the creation of an MU in the EEC. It would ensure gradualism and automaticity, which in turn would promote economic convergence, monetary reform and eventually the creation of an MU.

The current EMS arrangements, which are based on the coordination strategy, are far removed from this strategy, as the analysis in chapter eight indicates. Exchange rate unification was again put in front of major unresolved issues, making the MU prospects in Europe uncertain. Its early functioning suggests that it remains vulnerable to the same problems as the Snake. It is true that decisions to enhance automaticity, through the future creation of the EMF, have been taken, but no further progress has taken place on the creation of such a Fund. National differences exist concerning its role, so that decision-making may not prove easy in the future.

One should not ignore the research which is necessary in various areas, even if in the future such a transfer of power is decided upon. It should deal with arrangements for a strong institutional structure to secure an autonomous EMF and to analytical work on the development of effective monetary and exchange rate policies. Analysis is also needed to establish the conditions for granting credit. Once reserve pooling has taken place on a permanent basis, the EMF has also to decide on where to lodge the exchange risk and how to generate enough income to pay an adequate interest on ECUs. A particularly difficult assignment is for ECUs issued against gold. The difficulties of a

substitution account, stemming from the acceptance of reserves from official holders, should not be ignored.

Other major difficulties should be borne in mind. Members have promised to restructure the EEC budget. National differences exist and a disagreement on this issue could jeopardise the whole European union process. Experience shows that decisions are blocked because members link agreement on one issue with the settlement of another issue regarded to be of greater national importance. Finally, the new EEC enlargement would worsen the intra-EEC economic disparities, and the EEC goal for an MU could become an even more distant prospect. On the other hand it could strengthen demands for a broader range of EEC policies to help backward regions.

The analysis in this study suggests that so far there is nothing tangible to convince us that the EEC is on the MU path. Optimistic signs exist, however, with respect to the MU, given that certain ideas have advanced, such as those of having a common hard currency and moving towards MI with the aid of a CPC. In addition, the proposals related to the EEC having its own reserve asset in a world of diversified reserves and giving the EEC the instrument of exchange rate policy have progressed. Finally, the idea of having a distinct monetary institution to manage these functions and host the evolution towards MU has also made ground. The decisions on this last issue are crucial and will determine the irreversibility of the MI process.

Such an irreversibility could be accomplished by means of the coordination-cum-centralisation strategy suggested in this work.

APPENDIX I EUROPEAN MONETARY CHRONOLOGY

April 24, 1972 to December 31, 1980

1972

April 24	"Basle Agreement" - April 10, 1972 - enters into force. The Snake in the tunnel starts functioning. Participants: Belgium, Luxembourg, France, Germany, Italy and the Netherlands.
May 1	The UK and Denmark join.
May 23	Norway becomes associated.
June 23	The UK withdraws.
June 27	Denmark withdraws but stays in Smithsonian dollar limits.
October 10	Denmark returns.

1973

February 13	Italy withdraws.
March 19	Transition to joint floating. Interventions to maintain fixed margins against the dollar - "tunnel" - are discontinued. Sweden becomes associated. The DM is revalued by 3 percent.
April 3	The establishment of the European Monetary Cooperation Fund is approved.
June 29	The DM is revalued by 5.5 percent.
September 17	The Dutch Guilder is revalued by 5 percent.
November 16	The Norwegian Krone is revalued by 5 percent.

1974

January 19	France withdraws.

1975

July 10	France returns.

1976

March 15	France withdraws.
October 17	Frankfurt realignment. The Danish Krone is

devalued by 6 percent. The Dutch Guilder and the Belgian Franc by 2 percent and the Norwegian and Swedish Krone by 3 percent.

1977

April 1 — The Swedish Krone is devalued by 6 percent, the Danish and Norwegian Krone by 3 percent.

August 28 — Sweden withdraws. The Danish and Norwegian Krone are devalued by 5 percent.

1978

February 13 — The Norwegian Krone is devalued by 8 percent.

October 17 — The DM is revalued by 4 percent, the Dutch Guilder and Belgian Franc by 2 percent.

December 12 — Norway withdraws.

1979

March 13 — The "Brussels Agreement" - December 5, 1978 - enters into force. The EMS starts functioning. Participants: Belgium, Luxembourg, Denmark, France, Italy, Germany, Netherlands and Ireland.

September 24 — Realignment of EMS currencies. The DM is revalued by 2 percent, the Danish Krone is devalued by 3 percent against other member currencies. A 5 percent movement between the DM and the Danish Krone results.

November 30 — The Danish Krone is devalued by 5 percent against the DM.

APPENDIX II FORMS OF ANALYSIS OF INTERNATIONAL CAPITAL MOVEMENTS

Empirical work on international capital movements concentrates on three basic approaches. The first is the traditional partial equilibrium approach, based on a portfolio selection model and focuses on relative yields on financial assets on national markets and the associated capital flows on these markets. Interest rates are viewed as exogeneously determined. They influence capital flows but the latter do not influence interest rates. It is assumed implicitly that sterilization policies are taken to counteract liquidity effects of the XB, see Hodjera (1976, p 598). The other two approaches incorporate financial flows in a macroeconomic model of an open economy. They consider the case of a small economy facing exogeneously given interest rates abroad while the domestic interest rate is treated as an endogenous variable within the system of equations, determining equilibrium in the asset and money markets, and satisfying the equilibrium constraint imposed by the XB. One approach uses the reduced form of such a model as a basis for regression analysis. The alternative structural approach estimates the behavioural equations specified in the model(1). Most of the contributions though were highly disaggregated structural models and did not consider the estimation of capital movements as the major objective.

The partial equilibrium approach is based on stock adjustment analysis in which domestic and foreign interest rates play a major role. The structural form is expressed by a set of two equations defining a demand for foreign assets by investors and traders at home and abroad, see Branson (1968), Bryant and Hendershott (1970), Branson and Willet (1972), Miller and Whitman (1972). Most capital flow studies are conducted in net capital flow terms obtained by netting out assets from

liabilities. Incorporating lagged adjustment and expressing them in a first difference form, yields a basic regression equation that is generally used in explaining international capital flows.

$$\Delta(L_t - A_t) = (t = a_0 + a_1 \Delta Id_t + a_2 \Delta Id_{t-1} + a_3 \Delta If_t + a_4 \Delta If_{t-1} + a_5 CA_t + a_6 CA_{t-1} + a_7 DSP + u$$

where Id is the domestic interest rate whose coefficient is expected to be positive. Domestic and foreign interest rates are taken as independent - exogenous - variables of each other and of capital movements[2]. The simultaneous relationship between them would not be a problem if complete sterilization of capital flow effects on domestic money supply could be assumed. The high degree of financial integration among industrial countries makes such an assumption rather unrealistic, so that coefficients would tend to be biased downwards, indicating a response of capital flows to domestic and foreign financial variables. Under perfect capital mobility, no relationship exists between interest rate movements and capital flows. High simultaneity between capital movements and domestic and foreign interest rates would render insignificant and wrong-sign interest rate coefficients. Kouri and Porter (1974, p 446) mention that this model rests on solid microeconomic foundations and it cannot be easily used to analyse many macroeconomic problems of importance. They also point out that the MABP is in contrast to the literature on capital flows. In the latter case only indirect effects are taken into account.

Empirical evidence has so far given mixed results, see Hodjera (1976, p 620). It also demonstrates that by concentrating on the asset market, important influences that are not contained in the asset demand and supply function are ignored,

particularly the interdependence between domestic and foreign interest rates generated by the role of asset and money flows.

Kouri and Porter (1974) derive a model of capital flows of a SOE under fixed exchange rates concerned with the mechanism through which equilibrium is obtained in the financial markets, synthesizing the stock equilibrium approach to capital flows developed by Branson and the MABP developed by Mundell and Johnson[3]. Capital flows are viewed as a mechanism by which a domestic excess demand for money is removed and consequently the key explanatory variables are changes in domestic monetary instruments and changes in foreign interest rates, since they will all affect money demand and supply. Simultaneity bias, occurring when domestic interest rates are treated as being exogeneously determined, is avoided. The estimation of a complete structural set of equations although proper, could contain several difficulties, a major problem being the unavailability of reliable data on stocks, assets and interest rates needed for simultaneous estimation. Further, considerable constitutional details would be needed to adopt the model to the peculiarities of any given country. Also, as assets become perfect substitutes, individual structural equations cease to exist as well defined functions. The above considerations suggest the alternative approach of estimating a reduced form equation, providing critical information on most of the questions with which we are particularly interested. By assuming perfect capital mobility they derive the equation used for regression analysis, see chapter five, pp 155-7. They experimented with four countries - Germany, Netherlands, Italy, Australia - for the sixties and early seventies, see also Kouri (1975), indicating support for the offset capital flow hypothesis, although it differs among these countries. Their results for Germany

are in accordance with those of Herring and Marston (1977, pp 188-91) over a sixteen quarter period starting in 1964 I. However, coefficients are significantly different from -1, indicating also room for sterilization.

Hodjera (1976) raises a number of statistical difficulties of this analysis. Perfect capital mobility cannot be assumed, reducing the usefulness of the reduced model. A complete model is needed to integrate a careful portfolio analysis of the financial sector, within a macroeconomic model that can make endogeneous general equilibrium adjustments of financial and monetary variables and can quantify government policy measures. Further evidence shows that, under perfect capital mobility, the relationship between domestic and foreign interest rates is much more complex, so that it could be that, even under perfect capital mobility, the coefficient indicating sterilization is different from -1.

By dropping the SOE assumption, the foreign interest rate coefficient will be subject to a downward bias. ΔNDA is the key exogenous variable intended to show the response of capital flows to positive or negative excess supply of money. Kouri and Porter recognise that government intervention in domestic money supply in response to foreign exchange flows could create a simultaneous relationship between ΔNDA and capital flows as dependent variables. In order to obtain an unbiased estimate of capital flows they adopt as a key assumption, a neutral monetary policy with respect to the XB. However, they recognise that this assumption may not be satisfied and authorities try to adjust ΔNDA at times so as to offset liquidity effects of the external sector. Michaely (1971) provides evidence of partial sterilization among industrial countries for the 1950-66 period. It is also possible for authorities

to assign monetary policy to the XB target. The central bank would increase rather than decrease ΔNDA in response to capital flows. These policies give rise to a possible bias of OLS estimates. In the first case, under perfect world financial integration without sterilization, domestically caused MB changes will be offset, other things being equal, by an opposite change of equal size in the net foreign assets. However, with a low integration so as to permit authorities to insulate the MB from foreign influences, a change in NFA of the central bank caused by capital flows would immediately be offset by a change of the same size in NDA, leaving MB unchanged. In both cases of non-sterilization with perfect capital mobility and the case of complete sterilization, the ΔNDA coefficient will be equal to -1, being unable to distinguish between these two diametrically opposed situations. Sterilization policies reflect the authorities' reaction in response to changes in the foreign MB component, whereas offsetting capital flows are initiated by private investors in response to policy induced in domestic monetary policy. Both possibilities give rise to negative correlation between the domestic and foreign MB component. Sterilization behaviour becomes difficult to distinguish empirically. The inherent simultaneity between the two phenomena has led to confusion in the empirical literature.

In the case of partial sterilization and perfect capital mobility the ΔNDA coefficient has an upward bias - in absolute terms - that is directly related to the degree of capital flow sterilization. In the second case NFA changes will be followed by an accomodating change in the total money supply in the same direction aimed at restoring either XE or the original level of reserves. The relationship between C and ΔNDA will be very weak as will be the explanatory power of other exogeneous

variables that had triggered the original flow of capital. The ΔNDA coefficient will be biased towards zero. All this controversy in the literature arose in response to an analysis on German money supply by Willms (1971) who reported a strong negative correlation between the flow of foreign exchange reserves and ΔNDA, and interpreted it as a result of the Bundesbank sterilizing most of the impact of reserves on the MB. Porter (1972) however, noted that Willms' results were equally compatible with the offsetting capital flow hypothesis, presenting evidence of strong capital flow response to reserve requirement changes, and concluded that the offset interpretation of Willms' results was more plausible. Kouri and Porter (1974) suggest that as long as the capital flow equation is well specified and discretionary changes in monetary policy dominate central bank policy, the bias is likely to be small. It is important though to include dummy variables to capture large speculative capital flows such as the ones which occurred in Germany. Otherwise the sterilization that occurred in Germany and was reflected in ΔNDA would seriously bias the offset coefficient towards -1.

If the reaction function of the authorities is not properly specified, so that simultaneity remains, little confidence can be attached to some key coefficients in the regression equation based on the reduced equation. The offset coefficient may be biased and the direction of the bias is not clear. Argy and Kouri (1974) attempted to solve this controversy by incorporating a reaction function, see chapter five, p159. They obtain results confirming earlier findings, although the sterilization results for Italy do not allow for definite conclusions. They note though, that these results should be interpreted with caution since the sterilization equations are at best a rough

approximation of central bank behaviour. Hodjera (1976) compared the capital flow equation with the 2SLS form and did not come up with significant changes in the case of France. It suggests also that there does not seem to be a simultaneous relationship between ΔNDA and C agreeing with the view of the importance of discretionary policies.

Herring and Marston (1977, pp 158-61) have questioned the Argy-Kouri results for Germany. They believe that there was a serious mis-specification in the reaction function since discount borrowing was omitted on the ΔNDA variable. Michaely's study indicated that even under a calm period, the MB was not allowed to contract by the cummulative amount of the XB deficit. Central banks consistently lend to commercial banks and the Treasury in an amount sufficient to partially sterilize the contraction on MB that could otherwise have occurred. In contrast to USA, European central banks rely heavily on discount facilities provided by their central banks. In these countries, except the UK, little relevance is placed on open market operations for MB changes in part because of the limited size and distribution of government marketable debt. Also authorities, notably for Germany, make much greater use of shifts in Federal and State government balance between the central bank and private banks, than do their US counterparts. The Bundesbank,in addition,have occasionally used swap operations in the forward exchange market. When European commercial banks experience reserve losses out of XB deficits they tend to increase their discounting with their central banks, even if the discount rate has been raised. Instead of open market operations by the central bank that compensate for the effects of reserve losses on the domestic MB, it is external deficit that brings them to the discount window. The increased cost

of obtaining reserves in this way, explains why only partial instead of full sterilization normally occurs. This practice implies a substantial negative covariance between the change in borrowed reserves and the change in foreign exchange reserves. It is likely that when borrowing is excluded from the equation the change in foreign exchange reserves will tend to assume an additional role as proxy for borrowing thus biasing the sterilization coefficient towards zero. Herring and Marston (1977, pp 109-62) in their structural model for Germany's monetary system develop the reaction function by taking into account simultaneity between changes in monetary policy and changes in foreign exchange reserves by estimating their function by means of 2SLS, like Argy and Kouri, and by computing quarterly changes in the average reserve requirements. Allowing for discount borrowing they obtain results corresponding to those of Willms.(Note that Willms did take into account changes in borrowed reserves in his estimates of the sterilization coefficient). They indicate that the Bundesbank sterilized more than 90 percent of reserve flows and that sterilization policy was the same for both inflows and outflows, both large and small. German authorities retained a substantial amount of monetary policy control despite a high degree of capital mobility. Their results are in striking contrast with most of the literature on this subject for the period 1960-71.

De Grauwe (1975), (1976), (1977) on the other hand, doubts the validity of empirical evidence for both offsetting capital and sterilization hypothesis. He shows that failure to consider the individual countries' capital equation in the framework of a multicountry model, will underestimate the true offset coefficient and thus the offsetting capital flows. In a multi-

country framework the net capital flow of a single country, apart from the domestic MB component, depends also upon changes in such components of the MB of all countries in the system, since any capital outflow (inflow) of a country must appear as an inflow (outflow) in some or all other countries. Since the change in the domestic MB component of a foreign central bank will have an opposite effect on a country's capital flow from a change in the same direction of the domestic MB component of its own central bank, it can be shown that the offset coefficient is biased towards zero. Further, in the case of use of sterilization operations the necessary conditions of stability of a country's capital flows depend not only on the country's own use of sterilization policies but also on the extent of sterilization policy used by all the countries of the system. The use of sterilization by one country reduces the possibility of the other countries using sterilization without destabilising capital flows. Assuming that the Herring and Marston results conform to the facts, this is achieved at the expense of either use of sterilization policies of other countries or the stability of the system. German independence is achieved at the expense of independent monetary policy of other, particularly European, countries. In the latter case the system becomes unstable and could eventually be replaced by a more flexible one.

We return now to the specification of the reaction function. Its complexity was emphasised above. Monetary measures must be looked at within the whole set of instruments oriented towards various targets of the overall economic policy of the government. The use of monetary policy instruments differs from one country to another. Further, it is not specifically employed towards a specific target in any economy. There is

often a degree of regularity in changing targets, assigning it to domestic objectives during periods of relative strength or alternatively to bring a high degree of world interest rate harmonisation when the country is faced with foreign exchange loss. A strong currency economy on the other hand may do the opposite in pairing of targets and monetary instruments. Monetary policy may be used to discourage inflows during periods of XB strength and may sterilize in periods of relative XB weakness. Sterilization may also depend on policy instruments available. A degree of interest rate harmonisation can be maintained by altering the fiscal/monetary mix over the cycle. But again, this mix could be asymmetrical depending on whether the country in question has a weak or strong currency.

Finally, one should not ignore the problem of the proper specification of exchange rate speculation. Models have been unable to incorporate exchange rate expectations that determine speculative behaviour, explaining both the determination of forward exchange rates and destabilising speculation based on parity change expectations. Such formation of expectations under fixed exchange rates with an intervention band is difficult to formulate in a model having empirical applicability. The inability to handle speculative forces properly could be a crucial flaw in specifying the regression equation and may exceed the difficulties created by biases in both approaches, see Hodjera (1976, pp 608-9).

APPENDIX III OTHER TECHNICAL ISSUES

Due to lack of quarterly data on income, regressions were run for Belgium, Denmark, France and the Netherlands, with the GDP as the dependent variable and two leading indicators, available on quarterly basis, namely the value of retail sales (L) and the value of industrial production (Q), as independent variables. Regressions were run on annual figures. The estimated coefficients with the use of quarterly data on L and Q were used to obtain quarterly GDP data. In the case of Germany national income data were used (IFS).

Regression equations for the rest of the countries for the 1972-78 period are:

		R^2	F	SE	DW
F GDP =	-298.60 + 7.36 L + 3.85 Q (-7.36) (5.67) (4.38)	0.999	2277.0	292.4	2.171
N GDP =	-2.033 + 0.86 L + 0.47 Q (-5.47) (8.60) (4.67)	0.999	2336.4	4.6	2.353
B GDP =	-83.99 + 8.01 L + 5.69 Q (-1.33) (3.91) (2.41)	0.997	1073.7	1218.6	1.819
D GDP =	-24.38 + 0.15 L + 1.26 Q (-2.84) (0.62) (5.37)	0.992	446.9	30.5	1.669

Due to lack of data on the rate of capacity utilization for Denmark the rate of inflation was used as the domestic target of monetary policy.

The foreign interest rate is represented by the three-month Eurodollar rate (IFS).

Data for the econometric analysis were selected from: IFS, Balance of Payments Yearbook, OECD main economic indicators, Monthly Reports of the Bundesbank, Wharton School of Finance and Commerce - Economic Research Unit - Eurostat Monthly Statistic Bulletin.

NOTES

Chapter One

1. A common currency, to replace national currencies would give the same results. Its existence though is more preferable as it will be seen in the following parts.

2. Due to the adjustment mechanism, external disequilibrium is difficult to maintain. The whole process is accelerated through rising capital mobility. Authorities cannot for a long time keep money supply at a different level from the one that brings XE.

3. Parkin here accounts for different inflation rates, but not for the persistence of differences in inflation rates. He suggests in another paper, Parkin (1977), that one way of overcoming this problem is by allowing explicitly for relative price changes between countries. So, the general level of prices relative to the price of tradeables - and their rates of change - will depend on the difference between productivity, and their rates of change, in the two sectors. The faster the productivity growth in tradeables relative to non-tradeables, the faster the country's rate of inflation relative to the rate of inflation of tradeable prices. The reason for this result is that a faster productivity growth rate for tradeables implies higher wages everywhere and hence higher costs and therefore higher prices in the competitive non-tradeables sector. For an SOE therefore, its inflation rate is determined as that world determined rate of inflation of tradeables prices plus an adjustment which picks up the effect of that country's relative price movements.

4. See Kouri (1975), Porter (1972), Kouri and Porter (1974), Argy and Kouri (1974), Brunner (1973), (1974). The table below presents the extent to which the current account is counter balanced by the capital account between 1972 and 1978 -

cumulative - in the EEC.

G	F	It	UK	N	BLEU	D	Ir
14.5	90.0	38.0	67.4	83.6	86.7	57.0	26.6

%

Source: constructed on basis of data found on the Balance of Payments Yearbook - Net Flows.

Results vary. A significant degree of offsetting takes place in most countries. Not so for the case of Germany, whose huge current account surpluses were not offset by capital outflows. This evidence for Germany is opposite to that suggested by econometric analysis for the sixties.

5. Speculative capital flows should be mentioned. If the reserve currency country increases its inflation rate, incurring a current account deficit, and other countries attempt to maintain lower inflation rates, it will soon become obvious to speculators that such a conflict can only be solved by exchange rate adjustment. Capital flows to surplus countries, reducing interest rates and rising money supply. It is the speedy response of speculators that could be the most effective equaliser of inflation rates as long as fixed exchange rates are adhered to.

6. See Lutz (1972), Triffin (1972), Scitovski (1972), Corden (1972), Arndt (1973), Lundberg (1972).

Chapter Two

1. Due to lack of complete effectiveness of automatic adjustment.

2. The Benelux case was raised by the participants at the EMS Conference, Reading University, July, 12, 1979.

3. That together with only transitory costs of adjustment policies indicates that a free market monetarist might not in all cases advocate for freely floating exchange rates. See also Crockett (1977) and Johnson and Ball (1980, pp 9-12).

4. We test the statistic (API-b) using values of the t distribution.

5. The explanation would have to do with product diversification increasing intra-industry rather than inter industry specialisation in production. Balassa (1975) agrees also.

6. The list of fundamental economic criteria may never be complete, if one is to look at the fact that all forces making for international shifts in demand and supply are relevant.

7. SOEs prefer fixed exchange rates due to high trade dependence e.g. Luxembourg with Belgium, the Benelux and Ireland with the UK. Ireland's decision to join EMS while the UK did not, breaking the MU between the two countries, implied significant costs for Ireland at a moment when the UK is its most important trade partner, accounting for almost 50 percent of its trade. Implications are analysed in chapter eight.

8. Fratianni and Christie (1978) mention the obstacles to trade integration, despite the creation of the customs union in 1968, mainly in the form of non tariff barriers. There is a general resistance on harmonisation. The approach used is based on the destination principle while they propose the alternative approach of the origin principle, to minimise potential disturbances when moving towards harmonisation and more appropriate for a gradualistic approach to MU.

9. An examination of the Eurocurrency system, various theories to analyse its operation and the factors which have influenced its growth is provided by McKenzie (1976). See also articles on the importance of this market by Johnson and Ball (1980) and Frydl (1980).

10. See Magnifico (1973, pp 137-198).

11. See Crockett (1977, pp 26-7, 39) on what is termed US

"benign neglect" policy.

12. For further analysis on this point see chapter six.

13. An interesting comment doubting such destabilisation due to Euromarket importance is provided by Frydl (1980, pp 11-20).

14. See Johnson and Ball (1980, pp 9.12).

15. Comparisons may not be meaningful due to the different number of countries in each system (72 versus 9). But it could suggest and reinforce the impression on the downward bias of Hickman's multipliers.

16. Helliwell (1974) has carried such a complete study for the US and Canada demonstrating the channels through which policies are transmitted from one country to the other. He runs also simulation experiments on monetary interdependence, see Helliwell and Maxwell (1974). The strong effect of US policies is evident on all these simulations. In another study - Helliwell and McRae (1977) - debt, fiscal and monetary policies are especially analysed.

17. Under flexible exchange rates with systematic intervention, the same broad results apply. Foreign interest rate effects are reduced while more adjustment burden is on exchange rates and domestic interest rates.

Chapter Three

1. Mundell (1962), (1968), H. G. Johnson (1967), Meade (1951), (1978), Corden (1960), (1977), Machlup (1958), Whitman (1970), Swoboda and Dornbusch (1969), Tinbergen (1952).

2. Meade was interested in ex ante relations and distinguished autonomous from accommodating transactions, a division based on motivations. This concept has remained although the concept of XE has changed over the years. According to the MABP, capital flows are included above the line and in contrast to earlier versions which were explicitly flow models, this is a

stock-flow model, dealing not only with a flow deficit but also a stock-flow deficit. XE in our analysis is given by the formula: $B \equiv T + K = o$, where $B = o$ is the XB, T is the current balance, K is the net capital inflow.
T, K and hence B are treated as ex ante variables.

3. Under a stable Phillips curve the solution is that of U^* and $\hat{P}^*$. U^* is associated with an income level Y^* in IS-LM analysis. Various studies indicate that the Phillips curve has not been stable since 1967. Further, monetarists argue that in the long-run no such a trade-off exists. If the vertical Phillips curve is correct, U^* and Y^* are associated with the short-run IB position, whereas U^n and Y^n are associated with the long-run one, where U^n denoted the natural rate of unemployment and Y^n the income level associated with it.

4. It would be rather undesirable for this situation to continue for ever. It may not be continued though, because, no single region is likely to be in permanent imbalance, and in case policy coordination has taken place the regions would not be expected to be in different XB situations, unless there are reasons different in nature.

5. On the XB, an MU may be in disequilibrium with A and still function successfully. Further, the common external policy implemented, could affect the XB_{MU}. Also according to the MABP changes in the reserve position of both A and MU would be expected so that XE would be established in the long-run. This is compatible with the concept of global symmetry. XB_{MU} would be one of XE in the long-run.

6. The description of an economic union very much depends on prevalent political thinking and the type of economies to be included in it. For mixed economies there would be problems concerning the degree of government intervention and central-

isation to be achieved. An economic union would be the end stage of the economic integration process where policy decision making about economic objectives are taken at the central level as opposed to regional. In the EEC context, apart from monetary and fiscal policy there could be the possibility of an incomes policy - as it will be seen below - as well as that of a regional policy, where it is necessary, see Magnifico and Williamson (1973, p 200), Tsoukalis (1976, p 32).

7. One should distinguish between compatibility of policies and objectives which are required for a successful MU and determining the actual level of these objectives.

8. In fact under an economic union our three country model is reduced to a two country model, A and (B+C), where both groups are using expenditure switching and adjusting policies to achieve XB and IB. The degree of exchange rate flexibility and the need to avoid irresponsible policies for each group should be kept in mind.

9. An indirect effect could take place though, assuming freedom in goods movement around the world, in the kind of increase or decrease of intra-union trade depending on the downward or upward movement of exchange rate variation of the union members.

10. Another problem that would have to be solved when moving to form an MU is that of determining the appropriate parities among member countries.

11. The MABP is based on two empirical propositions. A stable demand for money and that the price of traded goods, for an SOE, is exogeneously determined. The analysis of this dynamic approach and its implications are thoroughly analysed in J. A. Frenkel and H. G. Johnson (1970), (1978), Johnson (1958), (1973), (1977), J. A. Frenkel (1976), IMF (1977). Also

the articles Currie (1976) and Hahn (1977) among others.

12. Devaluation is treated as a substitute for domestic credit expansion according to the MABP.

13. Taking also into account other factors. Parkin (1977) demonstrates that experience from the sixties indicates the importance of taking into account productivity of tradeables when setting DCE targets among countries if external imbalances are to be avoided.

14. Thygesen's article refers to the OPTICA findings. Other articles on the OPTICA group and their proposals are by Thygesen (1977), Basevi (1977), Basevi and de Grauwe (1978), Yperselle (1978), Nienhans (1978). Further supporting evidence on PPP is provided by the CLARE group (1979). See also Machlup (1979), Lamfalussi (1979), Leipold (1979).

15. There could be a problem with tariffs on third-country trade even in the presence of a common external tariff policy if trade dependence on third countries differs among MU members.

16. See Lamfalussi (1979), Leipold (1979), Yperselle (1978), Green paper (1979), Katseli-Papaefstratiou (1980), IMF survey (1980) and Goldstein and Young (1979).

17. See Tobin (1969), Branson (1972), (1976), Kouri (1976) and Dornbusch (1976).

18. The behaviour of sterling in 1979 could serve as an example where despite forecasts suggesting currency depreciation given the unfavourable economic conditions, its buoyancy since Spring 1979 can largely be traced to North Sea oil at a time of political uncertainty in the middle East and uncertainty about the price and availability of oil. Such rise was combined though with high nominal interest rates at home resulting from tight monetary policy, a high PSBR, a world of large capital flows and erratic US monetary policy. Elimination of

uncertainties concerning oil and the decision to reduce PSBR, reducing interest rates - although it could be difficult in a world of interest rate rises - could focus attention on traditional determinants of currencies like money supply, inflation and the XB. Sterling could depreciate, especially now in the absence of exchange controls. Of course even that might not happen if, like in 1974, sterling becomes attractive to OPEC surpluses or if interest rate decline is gradual, or even if they decline they could have perverse effects by attracting funds into gilt edged stock, in the hope of capital gains. Also oil revenues in the long-run reduce money supply, by reducing PSBR, and hence inflation.

19. Other arguments on the opposite side argue for potential instability out of such diversification.

20. The 1972 arrangements in the EEC involved relationships with each other which implies keeping up with the best performances, assuming that the latter do not reflate to ease adjustment costs of less successful members. Certain governments of the major participants were not ready to submit to such costs. Further, the alternative to achieve a common unemployment level and solve XB problems arising from inflation differentials through transfers could create political problems if such willingness is lacking among the members.

21. Hines's results are not accepted by many economists. Nor are his critics confined to the ranks of monetarists, see Trevithick (1977, p 94).

22. Wiles's view (1973) of socio-political forces, trade union militancy and the spilling over of the criterion of compatibility to encompass inter-country wage rivalry.

23. See Parkin and Zis (1976a), Laidler and Nobay (1974), Trevithick and Mulvay (1975), Gray, Parkin and Summer (1975),

Cross and Laidler (1974), Perry (1975), Phelps (1967), Spinelly (1976), Parkin, Summer, Ward (1975).

24. External factors involve both cost-push and monetary factors. In the concept of international cooperation the latter could be avoided although the former could still create inflationary pressures.

25. Timing evidence and regression analysis is provided, see Friedman (1961), Friedman and Schwartz (1963), Cagan (1965), Andersen and Jordan (1968), Goodhart and Crockett (1970), Walters (1966), Artis and Nobay (1969), Friedman and Meiselman (1963), Edge (1967), Ando and Modigliani (1965), Barett and Walters (1966).

26. Although the fact that the given economy is open should be taken into account.

27. Although with respect to the Snake members, the need to intervene in the FEM and the non-sterilization need of such intervention may necessitate monetary target overshooting.

28. Additional evidence for the UK indicates that monetary expansion has now a much smaller effect on unemployment and feeds more quickly into inflation rates, see Financial Times, October, 22, 1979, January, 14, 1980, July, 31, 1980.

29. While such consideration could even make the MU case unfavourable, it should be realised that the long-run need to reduce high inflation rates is inescapable whether a country joins an MU or not.

30. See chapter seven.

Chapter Four

1. Apart from political considerations i.e. EMU is a step towards political unity.

2. More serious concern with such aggregates was taken in 1976, when the government adopted a range for sterling M3 - cash and bank current and seven day deposit accounts.

3. Other major structural changes should be taken into account, see Foot et al (1979), throwing the adjustment burden into the financial markets. Authorities would then have the delicate task of weighting between a sufficient degree of rigidity of the MB system and the need to aleviate the public's uncertainty. On the MB debate in the UK see also, Midland Bank Review (1980a, pp 3-6), (1980b, pp 22-5), Rose (1979), (1980), Davies (1980).

4. In March 20, 1980 it was officially recognised that the SSDS and the reserve asset ratio had come to the end of their useful life for monetary control, see Green paper (1980). A six month consultation period was allowed lending emphasis on cash requirements and special deposit schemes. MB control was not favoured, firstly because of lack of a stable link between MB and M3 and secondly because the authorities did not want to abolish the lender of last resort of the Bank. They maintained that in the UK no single definition was sufficient and also explained why M3 should be used as a target to influence expectations, opting at the same time for an indicator system, where automatic MLR changes would take place when M3 is off the range. It would reduce the bias towards delay although political and technical reasons would still exist to create delays. The question still was on how interest rate decisions are made, although there would be greater automaticity compared to the previous system where the onus was placed on those who wanted to intervene. A stronger presumption of economic response might help confidence. In this system authorities would have to justify delaying a change rather than in the present discretionary system where the presumption is that the authorities must justify making a change. Short-term interest rates would then be the sole effective partner of fiscal policy to control M3.

5. Given n instruments, arbitrary values can only be assigned to n-1 of them.

6. See Whitman (1975), Grubel (1976). Here the government constraint becomes:

$$G + P + T = dB + dH + dR$$

The deficit can also be financed by the disposal of foreign exchange reserves, besides the mechanism for a closed economy.

7. See also Triffin (1972) and Lutz (1972). Others - Scitovsky, (1972), Lundberg (1972) - support harmonisation to avoid fiscal policies being carried out ambitiously and so creating XB problems.

8. The dispute on the strategy to be followed led to the creation of the Werner group. It was the division between "monetarists" and "economists". While both accepted the coordination need, the former asserted that effective coordination could be forced by an early exchange rate margin narrowing. "Economists" argued that under this approach an MU could be reached de facto, without effective coordination having been achieved at the end where resource transfers take place to deficit members without the latter taking any corrective measures. Monetary arrangements should wait until coordination started proving itself successful.

9. The 1970-2 dollar crisis apart from being a cause, served also as an immediate motive towards the new EEC exchange rate arrangement at that particular time.

10. That could at times imply sharp interest rate changes to preserve orderly market conditions while at times of other domestic liquidity disturbances it may warrant holding interest rates stable. The effect on money supply control due to these sharp changes, depends on whether the situation is reversible. Interest rate changes could be compatible with such control,

although at times could risk interest rate and money stock variability. Institutional and political factors may inhibit interest rate adjustment, creating a large source of exchange rate disturbance. Large institutional shifts of deposits and borrowing take place through the banking sector and the behaviour of rates in domestic markets relative to those in international markets could be an influence of considerable importance. Forward exchange rates seem to adjust mainly to deposit rates, so that any tendency of the latter to vary relative to those in international markets gives rise only to short-lived incentives to move funds. Bank lending rates on the other hand are often less flexible and differences may arise even on a covered basis, which may lead to persistent one way flows with significant implications on both exchange rates and monetary control. In trying to resolve conflicts between targets and interest rates there may be considerable scope in manipulating the structure of rates. As it will be seen in 1977 when Snake strains developed some members were ready to push up short-term rates to remarkably high levels in defence of their parities. France kept bank lending rates at fairly low levels for domestic reasons while money market rates adjusted upwards on external grounds.

11. Agreement on monetary growth for one member and obliging others to maintain fixed exchange rates with it by adjusting their policies would be the easiest way. Implications of such a dominant role are analysed below.

12. It should be mentioned that even if countries want to sterilize, it is sometimes self-defeating for various reasons, see Argy and Kouri (1974, p 221).

13. The Balance Sheet of a National Central Bank

Liabilities	Assets
(d) Coin and currency held by the Public	(a) Government securities from OMO
(e) Reserves of Commercial banks	(b) Net foreign exchange reserves
MB=(d)+(e)=D(=(a)+(c))+R(=(b))	(c) Discounts (Loans) to commercial banks

14. However given the reasons for which the SDR failed to become a major reserve currency - see Crockett (1977, pp 121-31) - and the dollar prevailed, it was felt that the USA would remain the most important reserve currency country. Accepting that an asymmetry existed between the US and the European financial systems - see Cooper (1972, p 327) - a highly-sophisticated capital market in Europe would be needed for a real change to be brought about.

15. The provision to intervene in EEC currencies had perhaps also the role of limiting the possibility of a member currency becoming a major intervention medium. However the possibility of a dominant currency under fixed exchange rates exists.

16. The possibility existed in fact for the Snake agreement to undermine the dollar e.g. a problem on the DM/Fr Fr cross rate could lead people to sell dollars for DMs.

17. All implications should be considered at the background of exchange rate developments in the year of agreement. All members had made full use of the permitted exchange rate flexibility where EEC currencies did not show any tendency to move as a group towards the dollar. Also the significance of the implications for each member and the EEC as a whole should be distinguished.

18. "Economists" considered it as a disadvantage at such an

early coordination stage. "Monetarists" suggested though that it would be another driving force for more effective coordination.

19. The effects of such interest rate coordination could be important e.g. tight monetary policy in Germany could oblige others to adopt the same policy which may be undesirable at least for some of them.

20. For "monetarists" this was the start of a lessened dependence on the dollar both as a reserve and vehicle currency.

21. Many of the difficulties of the BWS apply to the Snake, in the absence of sufficient coordination, like those of intervention and currency borrowing by weak countries from strong ones. The EEC arrangements turned to be far from solid. The Snake too included a policy of potential borrower subsidisation. However, the joint float, since March 1973, could be an important safety valve.

22. The problem could be mitigated only to the extent that a member country could prove more successful to its partners' representations than the US proved to be.

23. See also Bergsten, Halm, Machlup and Roosa, (Eds), (1970) on the need for exchange rate flexibility.

24. The amount of credit facilities is important. A low amount could push further coordination as members do not have adequate finance to defend their parities.

25. Members may also be willing to accept new commitments for policy coordination in other areas. It should be easier to reach agreement on policy objectives and instruments.

26. Regional problems were also present in other countries, see Swan (1975, pp 167-8). New structural problems were being created due to world competition endangering traditional industries. The Rome Treaty took regional considerations into

account - Articles 80, 92, 39. The European Investment Bank was set up under the Articles 129, 130, specifically charged with regional development. Article 226 allowed members to take transitional measures incompatible with other parts of the Treaty, to solve difficulties which seriously impair the economic situation of a region.

Chapter Five

1. See footnote No. 16 of chapter three. Also see Schadler (1977), Bilson (1978a), (1979), IMF Annual Report (1977), (1979) and de Grauwe and Peeters (1978).

2. A covered IRD between two countries would require to deduct from the uncovered IRD the forward premium or add the forward discount, say on the DM if that referred to UK and Germany. Uncovered IRDs will approximate to the forward premium or discount obtaining between the two exchange rates, (cost of forward cover), so that profitable arbitrage operations will be avoided, in the absence of exchange controls.

3. Financial Times, March 27, 1980.

4. See Porter (1972), Kouri and Porter (1974), Kouri (1975), Argy and Kouri (1974), Hodjera (1976), Herring and Marston (1977).

5. The effect of using dollar intervention can be neutralised only if France intervenes by selling its dollar reserves to buy FrFr, putting back into the system the dollars taken out by Germany and so the rise in the DM supply is matched by a fall in the FrFr supply. The circle of FEM intervention is completed. The net supply of dollars is unaffected as is the weighted exchange rate of the Snake currencies against the dollar. It is clearly difficult in practice to ensure that dollar interventions cancel each other out in the Snake. It is also not known to what extent the net effect of Snake interventions is internal on the values of the Snake currencies

relative to each other or external, i.e. their values against the dollar.

6. Unfortunately the insignificance of the interest rate variable does not allow us to see the XB fluctuation, if the Bundesbank wanted to maintain the domestic interest rate fixed, in case of a one percentage change in the Eurodollar rate.

7. The ΔNDA coefficient is between -0.61 and -0.82 indicating that to increase the MB by DG100 m the central bank must increase its domestic assets by DG256m to DG555m to allow for the decline of foreign reserves by DG156m to DG455m.

8. The use of this variable is put into question for all countries concerned. Zolotas (1979, p 29) suggests that its measurements have been rendered unreliable to a great extent, mainly due to dramatic increases in the cost of energy since 1973 which affected investment plans adversely, conservation and environmental considerations implying increased marginal capital output ratios, adding to costs of new investment.

9. Within the Danish monetary policy - based on controlling credit expansion with the vital instrument of ceilings on loan commitments by the banks - high interest rates are used to ensure that short-term trade credits and a substantial proportion of medium term business investments are financed in foreign currency, helping to finance the current account deficit.

10. The money call rates are said to be at interest parity if the return on Euro-dollar deposits $(1 + i_e)$ is equal to the covered return on money call X deposits $(1 + i_x)$ Fx/Sx, where S is the spot exchange rate and F is the forward exchange rate expressed in dollars per unit of currency. This condition for interest parity reduces to $i_x = i_e - FP_x$, if second order terms are neglected.

11. Further, the above use of the interest parity departs somewhat from traditional usage. In the literature of the forward exchange market, it is the forward premium (FP) that is said to be at interest parity with respect to the two interest rates. Here the money call interest rate of the European country is said to be at interest parity with respect to the Eurodollar rate and the FP. The same interest parity condition is of course involved in both instances.

12. The evolution of domestic short-term rates was paralleled by a more or less similar evolution in the discount rates. The mini-Snake countries and Italy were closer up to 1976 I. Also with respect to the time that discount changes took place. Smaller Snake countries undertook more changes than Germany keeping almost throughout the period higher rates than those of the latter, largely due to their attempt to remain within the Snake, at a moment of less satisfactory performance compared to that of Germany. Furthermore, on certain cases abrupt changes took place. Denmark, since the Frankfurt realignment in 1976 undertook a continuous discount rate reduction, despite its rising economic divergence. The fact that from that time on it counted on more frequent devaluations has to do with this behaviour. Generally the choice between interest rate and exchange rate changes depends on whether pressure is produced by a once and for all portfolio adjustment or is the result of permanent inflation differentials. The latter seemed the case between 1973 and 1976. EEC members did not have the freedom or did not want to alter their exchange rates, trying to protect their citizens' living standards. They only postponed their inevitable cut, achieved largely through an exchange rate fall in the 1976 crisis. SSC though devalued less for reasons explained above.

Generally interest rate evolution was not solely due to the necessity of remaining inside the Snake. The PSBR contributed a lot to their rise in Belgium and Denmark.

Finally the possible deflationary effects of such interest rate rises are analysed in chapter six.

13. In Holland, May 1977, to stop regional aid on S. Holland. In Denmark, early '77, to stop aid to Jutland. In France, Dec '76, not to extend aid to N. France. In Italy to stop what the Commission considered subsidies for social security payments in Mezzogiorno. Italians modified the scheme in 1976. In the UK there was a similar case with respect to the regional unemployment premiums. A payrol subsidy paid in development areas was abolished in 1977 under EEC and IMF pressure.

Chapter Six

1. Competitiveness - or the real exchange rate - is the product of the relative wholesale price and the nominal effective exchange rate indices. Changes in competitiveness are computed on an annual basis. One should be careful in drawing conclusions out of these calculations. At least five different indices of costs and prices are used. These are unit labour costs, "normal" unit labour costs - i.e. wages adjusted for the productivity trend - value added (GDP) deflator, wholesale prices and export unit values. The conclusions reached are highly sensitive to the cost or price index.

2. Sweden, an associate member, provides another example, where real exchange rate appreciation together with the pursuing of independent objectives, led to a rapid deterioration of its competitive position to the point of not being able to finance its current account deficit. Finally it left the Snake.

3. Evidence on sterilization for the Netherlands and Denmark, indicated in earlier analysis, would also suggest that these

economies did not allow their XB deficits to create deflationary pressures in their economies and is compatible with comments here, on the expansive policies they undertook.

4. Professor Thygesen, after a private communication agreed that real adjustment is unavoidable in the long-run for exchange rate stability in the SSC.

5. Conclusion after a discussion with other participants in the EMS conference at the University of Reading, July 11-3, 1979. If there is, for example, a question of realignment between the DM and the BFr, then if the two central banks agree, there will not be any problem with the other members.

6. One reason that has perhaps facilitated more timely realignments was the existence of MCAs in CAP so that any realignment did not have any direct and quick impact on the formers' incomes. The abolition of MCAs agreed for the future could increase political resistance on realignments.

7. See Ypersele de Strihou (1979), Spaventa (1979), Thygesen (1979), First Report from the Expenditure Committee (1979, p 49).

8. Excessive real appreciations, while real dollar depreciation was taking place, had the danger of giving rise to cumulative appreciations, reducing exports and profits and investment, bringing stagnation, aggravating Europe's structural difficulties, raising unemployment, protectionism and producing more inward looking currency blocs.

9. The ECOFIN suggested though to its members to undertake studies on exchange rate matters and also establish an indicator to trigger automatically policy coordination discussions. In the Duisenberg plan this role was assigned to the exit of a country's effective rate from its target zone.

10. See also the EMS part in chapter eight.

11. The German government's commitment to intervene more within

the EMS and the determination of the new British government to make inflation control its paramount priority, were encouraging signs at the end of the seventies.

12. An interesting exposition of such problems is provided by Jacquemin and de Jong (1977).

Chapter Seven

1. Although for the Fund to operate efficiently multilateral compensation, the use of the EUA as a reference currency and reserve pooling should be pursued from the outset.

2. Keeping aside structural factors.

3. See Magnifico-Williamson (1973), Magnifico (1978a), (1978b).

4. It should be said that Magnifico-Williamson emphasised cost-push factors of inflation. However later Magnifico (1978b, p 72) recognises the importance of monetary and credit policy coordination as well as fiscal policy harmonisation for exchange rate stability. Their proposal is compatible with the coordination process established in the earlier chapters.

5. Other technical complications are involved here too, see De Grauwe and Peeters (1978), (1979, p 42). Also in the EMS case an additional problem would be that of a currency which is not part of the system but is counted in the CPC.

6. The alternative method of adjusting the CPC parities following a change in CPC parity of currency 1 by selecting one currency - n^{th} - and have it undertake all necessary adjustments allowing all other currencies in the basket to keep their CPC parities unchanged - i.e. keeping CPC parities and bilateral currency rates other than currency 1 and n unchanged - has the political disadvantage of introducing financial asymmetry into the financial status of currencies.

7. See Economist, London, November 1, 1975, pp 32-8.

8. An international CPC role gives the ability to EEC

authorities to run higher balance of payments deficits; a policy that may not be inconsequential in the future.

9. The MU involves a loss of national money supply control and power transferred to a central decision making body. Questions on power responsibility and mandate of this body would have to be cleared. The degree of its independence, the number of its objectives, the role of national central banks would have to be clearly specified in the form of a monetary constitution for the European MU before significant steps are taken towards MU, providing guidance on more transitional measures. Prior commitment to a monetary constitution would assume that EEC did not find itself developing a momentum towards MU without the necessary consensus to take the final step. Such reform may not be without problems and economists are still divided on that. See Triffin (1978), Parkin (1978), Kloten (1978), Murphy (1978), Allen (1978).

Chapter Eight

1. For a detailed presentation of the arrangements see the EMS Resolution and the Twelfth Annual Report of the European Communities (1979, pp 75-8).

2. The effects of floating exchange rates was one of them. An interesting study by Sumner and Zis (1980) on the relative inflation bias of flexible rates concludes that they are more conducive to inflation than fixed ones - with the possible exception of the key currency country - while countries become more inflation prone than under a fixed exchange rate system. Moves to exchange rate stability indicate some recognition that an externally imposed constraint offers some protection against both domestic pressures and international uncertainties which dominated the last decade.

3. It was explained in chapter seven that in order to avoid

speculative runs with respect to the choice of the intervention currency, bilateral margins may have to be established, compatible with the ECU margins. The intervention system becomes identical to the one in the Snake. Intervention in EMS currencies could bring symmetry in adjustment.

4. The maximum divergence spread is reached only when a currency is standing at its bilateral limit of ±2.25 percent against all other currencies. On the technical EMS features see also de Grauwe and Peeters (1978), Shone (1979b), (1979c), (1980c), Leipold (1979).

5. Renewable swaps which are to be unwound after two years except where a decision to the contrary is taken unanimously. (In fact the renewal took place in the Luxembourg summit, December 1980.) ECUs will be utilised only by central banks within the EMS with the possibility of not accepting more than 50 percent of the settlement amount.

6. Assuming that while the threshold has been reached, bilateral margins have not been reached.

7. On the other hand strict conditionality could discourage recourse to EMF credits - especially in a world where they own abundant reserves and could also obtain credits elsewhere - avoiding adjustment.

8. The danger of a two-tier Europe should be kept in mind.

9. An interesting analysis on the question of EMF and ECU on the one hand and the IMF and SDR on the other took place in the seminar on the EMF, see Banca Nazionale del Lavoro, September, 1980.

10. Another important question is raised, referring on the appropriate balance to be struck between the requirements of XB finance and adjustment and the extent to which the EMF will fulfill such a task avoiding undesirable implications in the future.

11. Europeans emphasised the need to stop potential exchange rate instability.

12. The MB target was 6-9 percent between 1978 III and 1979 III and 5-8 percent between 1979 III and 1980 III, while it will be 4-7 percent for the 1980 III - 1981 III period. Germany has now resorted to ranges since the substantial overshooting in 1978.

13. See C. Johnson (1980), Emerson (1980), de Vries (1980), and the proceedings of the seminar on the EMF, Banca Nazionale del Lavoro, September 1980.

14. Computed on the basis: nominal rate of depreciation (-) or appreciation (+) of the exchange rate plus rate of domestic inflation - wholesale prices - minus German rate of wholesale price inflation.

15. The larger real appreciation though occurred outside the EMS.

16. See Financial Times, March 13, 1980.

17. See Footnote No. 13 above.

NOTES

Appendix II

1. See Rhomberg (1960), (1964), Helliwell (1969), Helliwell and Officer and Shapiro and Stewart (1969).

2. The extent to which this is true at least for certain countries is questioned. This level of correspondence could be likely to reflect the influence of general monetary and business cycle conditions affecting financial markets rather than interdependence of interest rate movements. To discover a country's dominance over another, analysis of short-run cyclical movements may be additionally needed. Bohi (1972) has carried out such a study for ten developed countries using spectral analysis. He suggests that international interest rates are not highly interrelated. However one should not assume that the countries' money markets are successfully insulated from foreign influences, since he uses Treasury bill rates where there is less international interdependence among them since these rates are more determined by domestic factors. Domestic monetary conditions are more important to them than external ones, while the opposite may be true in the case of inter-bank rates.

3. For the derivation of the model see Kouri and Porter (1974, pp 444-52).

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