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US - EC MONETARY RELATIONS

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Preface

This study has been requested by the Chairman of the German Members of the Socialist Group of the European Parliament, Mr. Gerd WALTER.

Since the request was made, some progress has been achieved in monetary cooperation in the international field, in particular after the G-5 Agreement in October 1985 and the recent Tokyo Summit. Much has still to be done in this field, and it is hoped that the present study, with the specific proposal it contains, may make a useful contribution.

It demonstrates also the great interest that the European Parliament has always shown, and continues to show, in the field of international relations and cooperation in general, and in particular in the international monetary order, better monetary relations, increased stability, the development of the EMS, and increased monetary integration in the Community.

Any opinions and recommendations contained in this paper are those of the authors. They are not necessarily those of this Directorate General, or of the European Parliament or any of its organs or Members.

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I. US ECONOMIC POLICY AND ITS INTERNATIONAL REPERCUSSIONS

The new US administration of President Reagan introduced in 1981 a policy of strong fiscal expansion, which coupled with a non-accommodating tough monetary policy of the Federal Reserve resulted in high current account and budget deficits, and high nominal and real interest rates¹. During the period 1981-1984 the exchange rate of the dollar appreciated substantially towards all currencies. In 1985 the dollar's exchange rate started to fall, but remains still in high levels.

The dollar's appreciation and the expectations it fed during the period 1981-1984 that it would continue to appreciate, related to the high real interest rates in the USA resulted in a major capital inflow to the USA. The American budget deficits have thus been financed in part by non-US capital.

During the 1970's the dominant position of the dollar weakened somewhat in its role among central banks but increased in the private markets due to the developments that took place in international private banking. The dollar enhanced its position as the US financial markets offered to its participants a considerably higher degree of liquidity simply due to their size and the financial markets took over the job of financing balance of payments deficits especially for non-oil exporting but also for some oil exporting LDC's. As long as inflation prevailed private banks did not encounter any real difficulties, since floating interest rates seemed to reduce the risk of lending and allowed bank profits to soar. But the situation changed dramatically with the reduction of inflation and increasing interest rates in the 80's, coupled with the appreciating dollar and the deep worldwide economic recession. Savings that were directed previously to LDC's and some Eastern Block borrowers increasingly went to the USA. The USA thus absorbed more and more world private savings. This permitted the US administration to treat the budget deficit not as a constraint but as exogenous. The Federal Reserve's commitment to a tough monetary policy that would limit inflation almost under any conditions gave the US administration another degree of freedom: Not fearing a reoccurrence of inflation and not having any difficulties with the financing of the budget deficits the administration does not have any

compelling reason to reduce the deficit drastically and this although many intentions to do that have been announced on many occasions. At the same time, capital inflows have helped to finance the US trade and current account deficit² which also no longer was a constraint to the domestic policy aims followed by the US administration. Under the actual situation, the US administration was able to pursue internal policy aims without having to take into account the external repercussions of this policy. The high capital mobility in the international financial market has given the possibility to the US administration in the period 1981-84 to treat the US as a closed economy.

There are basically three explanations for the dollar appreciations:

1. The sharp increase in the international competitive strength of the US as a producer of financial assets (a safe haven) and services. The USA proved to be during 1981-84 more dynamic than most other economies in the world, having at the same time one of the freest capital markets and a government considered to be stable.
2. The rise in interest rates has made the US a preferred place for international portfolio investments, leading to capital inflows, and since the exchange rate is set in the short to medium run in the asset market, also to appreciation. In the standard model of exchange rate determination securities are considered to be perfect substitutes but goods are not. Prices adjust slowly to excess demand or supply in the goods market. Interest parity implies that the home nominal short-term rate of interest is equal to the foreign interest rate plus the anticipated rate of depreciation. The same relationship is also valid for real interest rates: The real interest rate differential between countries is equal to the rate of change of the real exchange rate, defined as the exchange-rate adjusted ratio of national price levels.

The real exchange rate is assumed to adjust to its long-run equilibrium level over time. The rate of adjustment is proportional to the deviation from long-run equilibrium. When the current real rate is below the long-run rate, then there will be real depreciation which is the faster the larger the current deviation. When one combines the dynamics of the real exchange rate and the requirement of interest rate parity, one

obtains a link between the long-run equilibrium real exchange rate, the real interest differential and the current real rate. If there is a real interest differential in favour of the one country, for example the USA, then the real exchange rate level will be below the long-run level. On the other hand, with an adverse differential the real rate will exceed the long-run equilibrium level. Since the long-run equilibrium level corresponds to the full employment real exchange rate, it follows that the country that has a relatively high real interest rate will find its goods over priced in world trade on account of an over-appreciation of the exchange rate. This is exactly the case with USA goods in the period 1981-85. Conversely, the low real interest countries enjoy a transitory under-pricing of its goods.

This interpretation implies further that these misalignments of real exchange rates are transitory. Real interest rates under the impact of monetary disturbances diverge only transitorily, therefore real exchange rates are out of line only transitorily. If the real exchange rate is low, then it must be also rising. If it is high, it is also falling. To explain a sustained or persistent real appreciation of the dollar, as experienced during 1981-84, one has to consider either a succession of monetary surprises or look for factors that change both the long-run equilibrium real exchange rate and real interest rate. Fiscal policy is such a factor.

3. The US long-term fiscal expansion implies an increase in current and future demand for US goods and hence a real appreciation. Forward-looking asset and exchange markets lead to increases in current long rates and exchange rates.

During 1981-84 Europe and the US followed different fiscal policies. Fiscal expansion increased rapidly in the US while in Europe (with the exception of France in 1981) it was in a rather contractive phase. This asynchronization resulted in a net fiscal stimulus to world demand, because the US expansion outweighed the European tightening. The resulting world excess demand for goods forced up the real interest rate (combined as it was with restrictive monetary policy both in the US and Europe) there being at the same time a shift of the composition of world demand. The demand for US goods increases, while the demand for European

goods declines relatively. Therefore, the full employment long-run relative price of US goods must rise, or the US real exchange rate must appreciate. Thus the complete, long-run or full employment adjustment is a higher world interest rate and a real currency appreciation for the US. The real appreciation assures that the deflationary effects of higher world interest rates on European spending are offset by a shift in demand towards Europe's goods as a consequence of the European real depreciation and increased European exports to the USA.

In the short-run rational, forward looking asset markets anticipate the rise in real interest rates and the prospective real appreciation. The world long-term interest rate will therefore rise immediately and the expanding country's currency appreciate ever ahead of the full fiscal stimulus.

Taking into account the above, it can be expected that the appreciation and high real exchange rate of the dollar will remain as long as fiscal expansion in the US is high and in Europe is low. There are, however, some qualifications: 1. Trade deficits lead to a transfer of wealth to Europe and this leads to depreciation tendencies because as US residents become relatively poorer and European relatively richer, the composition of world demand shifts in favour of Europe's goods. 2. If investors are risk averse and the dollar and European securities are not considered perfect substitutes (as they are assumed to be in standard models) then the relative supplies will be important. Large US deficits imply a growing accumulation of dollar debts in portfolios, leading to long-run risk premia on US securities and to a depreciation of the dollar³.

It is obvious, as Triffin remarks⁴ : "that the strength of the dollar should not, and cannot, remain indefinitely dependent, as is the case today, on such continued capital inflows into one of the richest and most capitalized countries of the world. We must certainly face the possibility of a decrease, cessation, or even reversal of such inflows, in the event - deeply to be hoped - of an abatement of the fears of war and of a decline in interest rates. Although successful price-wise, the administration programme has also so far vastly increased the fiscal deficits whose correction was previously deemed imperative. Finally, the persistence of such capital movements would be bound

to raise increasing objections abroad, and to prompt the adoption of policies distasteful to all: domestic deflationary measures, and/or protectionism and exchange controls".

One of the main difficulties in the actual economic situation was the inability of the present US administration to recognise the problem that the US budget deficit and the resulting capital inflows represent for the rest of the world. According to the administration's view, the dollar's exchange rate was a market phenomenon and was not influenced (or very little influenced) by the US budget deficit and the resulting high interest rates. The strength of the dollar was due to the strength of the US economy which was in turn due to sound US economic policy. The cause of slow growth around the world has nothing to do with the strong dollar and the capital inflow to the US, which on the contrary has been beneficial through the impetus given by the American trade deficits to the rest of the world. The cause of slow growth has been inferior economic policies in Europe and in other countries⁵.

From the point of view of Europe, the dollar appreciation had repercussions on capital movements, interest rates, investment, inflation and trade flows.

Capital export from Europe to the USA put the European policy makers before the following dilemma: They had either to continue a restrictive monetary policy in order to avoid further capital export that would lead to more rapid depreciations of their currencies vis-à-vis the dollar so as to avoid imported inflation, mainly through an increased bill for oil payments. This would lead to higher interest rates which would bring adverse effects on investments, particularly in the low-inflation European countries, and would reinforce the stagnation in Europe. Or they could relax monetary policy and follow the US in a more expansionary fiscal policy that would presumably keep interest rates down in Europe but would bring even stronger capital export, depreciation of their currencies and increased inflation. Although both options presented serious disadvantages for Europe, all Community countries (with the exception of France for a relatively short period of expansionary policy in 1981 which was reversed in 1982) chose to continue with tight monetary and fiscal policies to restrict inflation. Still, some decoupling of real interest rates took place, leading to lower real interest rates in Europe, further capital exports and continuous appreciation of the dollar up to the beginning of 1985.

The appreciation of the dollar facilitated the export of the rest of the world to the US market, from which the Community has also benefitted. The trade deficits of the USA have thus acted as a fiscal stimulus for the rest of the world and the Community Member States in particular. It is quite difficult to estimate the net effect of the US fiscal expansion to Europe this involving the estimation of the magnitudes of two contrary effects: the fiscal stimulus of the US trade deficits as against the depressing effects on European investment of higher interest rates and capital export. According to one empirical study⁶ the net effect on non-US GNP may have been moderately positive, but the results obtained depend greatly from the specification of the model used.

The appreciation of the dollar had a disadvantage for the competitive position of some US industries. It was only a question of time for the trade issue to emerge. The US administration in fact claims that restrictive practices pursued by the US trading partners and not the overvaluation of the dollar deprives the competitive US economy from thriving in the world market place. The increasing imports pressure on some US industries like the steel industry led to the adoption of some protectionist measures by the US and the threat of an even more protectionist stance in the future, unless favourable to the US agreements were to be reached.

The threat of protectionism and the increasing exchange rate volatility have contributed substantially to the foreign investment in the US. Instead of continuously exporting goods and services produced abroad, foreigners had to provide employment in the US economy in order to assure their share in the biggest market. This trend has been hailed by the US administration as a proof of their successful economic policies and not as an abuse of economic and political power to dislocate investment.

By the mid 1985 the dollar started to fall and this trend continues through the first half of 1986. Still, even after this realignment, it is argued that the real exchange rate remains too high to be consistent with a substantial narrowing of the external deficit. Failing further adjustment the US foreign debt would increase as a percentage of US GNP and exports in a manner that ultimately becomes unacceptable to portfolio holders, whose preferences would change and who would back out of dollar denominated assets. Therefore either now or later the dollar must take another corrective plunge,

or else US interest rates must rise relative to those abroad to maintain investors in their dollar positions. Were this to happen, it would influence negatively investment and ultimately growth in the US⁷.

At the same time the US launched a campaign for further trade liberalisation, not for the global good but for the benefit of the US, this campaign being designed to improve the US terms of trade through the choosing of sectors and industries where the US economy is thought to be strong, as for example, high technology, agriculture and services. The US authorities, both Congress and administration seem to give a new meaning to the old principle of reciprocity that stands at the very core of the world trade order. Reciprocity should now mean that the US is to be treated in other economies in the same way as these other economies are treated in the US. But this means that the US economic order, as it results from the US economic structure, is the standard to be accepted by all her trading partners, under the threat of effecting retaliatory measures. Not enough reciprocity should also mean that perceived distortion in bilateral trade relations should be resolved on a bilateral basis⁸.

The result from the US fiscal expansion is that the US cannot have foreign capital without disadvantages for the export and import competing industry, while the Europeans and Japanese cannot have strong exports to the USA without parallel capital transfer, high interest rates and protectionist pressures that build up⁹.

II. THE INTERNATIONAL MONETARY SYSTEM AND THE COMMUNITY

The actual international monetary system is characterised by highly variable exchange rates and high mobility of capital.

The move to floating rates in 1973 was welcomed by most economists, supported mainly by the argument that floating would permit each country to choose its own rate of inflation and pursue an independent monetary policy, while being insulated from imported inflation from other more inflation-prone countries. The scepticism about the consequences of floating that were voiced by some economists, such as R. Triffin, concerning (a) the possibility of loss of discipline on fiscal and monetary authorities with respect to anti-inflation policies; (b) turbulence in price-cost relationships leading to protectionist actions and; (c) disintegrative impact on economic and political relations between nations, seems to have been only in part well-grounded, because floating was shown to be viable.

Although the present exchange rate regime is commonly referred to as a "floating" one and the IMF in describing the exchange rate arrangements of members has detected a broad tendency over the years towards "more flexible" arrangements, there is in reality a wide diversity of exchange rate arrangements among countries. The international monetary system shows the following main characteristics:

1. Exchange rate arrangements: Peggers far outnumber floaters, but most of world trade and finance is conducted among countries whose exchange rates float against each other. In mid-1983, 93 countries, almost all of them developing, were pegging their currencies. Seventeen countries had opted for what the IMF calls "limited flexibility vis-à-vis a single currency or cooperative arrangements." These include the 8 members of the exchange rate arrangement of the EMS. Thirty five countries had adopted "more flexible" exchange arrangements including "independent floating" by 4 of the largest industrial countries. During the period of flexible rates since 1973, there has been a trend away from pegged exchange arrangements and, within these, from single currency to composite pegs.

Despite the larger number of countries that peg their currencies, in trade-weighted terms the current system is better classified as floating because most of the largest traders maintain more flexible forms of exchange arrangements. In trade-weighted terms about two-thirds to four-fifths of world trade is conducted at floating rates.

2. Exchange rates continue to be viewed as a domestic policy variable and a matter of international concern. With regard to the role of exchange rates in macroeconomic policies, many countries have assigned greater weight to the exchange rate as a tool for domestic and external adjustment, since the switch to floating. The exchange rate has continued to rank high among the targets and/or the instruments of macroeconomic policy, and in many cases the authorities have managed their exchange rates with fair success through some combination of aggregate demand policies and official intervention in exchange markets. As a result, exchange rates have varied more frequently than previously and have, in many cases, moved in the direction required to correct external imbalances and offset inflation differentials, although there have also been notable exceptions, the case of the dollar being prominent among them.

Internationally a stable system of exchange rates is seen as dependent more on stable macroeconomic policies at the national level than on the form of the exchange rate regime itself. Present codes recognise explicitly that a system of stable exchange rates can be jeopardised as much by insufficient as by excessive exchange rate flexibility. The main difference to the previous Bretton Woods system is the absence of agreed rules. In the present situation, stagflation makes policy choice very hard, consultations are a difficult and fragile instrument to deal with interdependence. In such circumstances, consultations have to deal with a wide range of policy objectives, instruments and techniques.

3. Exchange rate variability is perhaps the most marked characteristic. This has been substantial both for nominal and real exchange rates, bilateral and effective exchange rates and short and longer-term horizons, so that more and more observers have been alarmed by the violent swings in exchange rates, thus voicing increasing doubts as to the desirability (as against the viability that is in general no longer doubted) of the present exchange rates regime.

Exchange rate variability has been significantly greater than under the adjustable par value system and greater than variability in national price levels, but less than the variability of other asset prices like stock market prices, changes in interest rates and commodity prices, suggesting that the floating rate period has been sufficiently turbulent to make all asset prices and not just exchange rates fluctuate widely. At the same time, the floating rate period has not shown a sustained tendency for exchange rate variability to decline over time, while the failure of the purchasing power parity to hold has been very marked in the short and medium-term. The standard deviation of daily percentage changes in the bilateral rates among key currencies has been close to 0.5% for the entire period of floating, with daily changes often above 1% in some periods. Variability has remained substantial in spite of the considerable progress made in reducing divergences in economic conditions and policies among the major countries, as exemplified in the convergence of rates of inflation.

4. Official intervention in exchange market persisted and the evidence points to the fact that demand for reserves has not diminished to a great extent under floating rates. Intervention arising out of the above-mentioned fact that most countries regard the exchange rate as a policy objective has not been aimed solely at countering disorder but has also included resisting rate movements that bear no relation to the fundamentals and resisting depreciation out of concern for its inflationary consequences or appreciation in order to maintain competitiveness.¹⁰.

An evaluation of the actual regime can be done on the following lines:

1. The most critical problem has been the great variability of the exchange rates. Here it is important to distinguish between short-term volatility, e.g. the amount of short-run variability in the exchange rate from hour to hour, day to day, week to week, or month to month, and misalignment, e.g. a persistent departure of the exchange rate from its long-run equilibrium level. According to Williamson,¹¹ these misalignments have been high, permanent, and there is no indication that they are subsiding over time as experience with floating accumulates. The reverse seems to be true. Thus, the dollar could be overvalued by as much as 18% in the first quarter of 1983, sterling by 11%, while the German mark, the yen and the French franc were undervalued during the same period.

The high variability of exchange rates involves substantial costs. The costs of volatility relate to increased uncertainty which can lead to a reduction in trade and other international transactions. Uncertainty regarding the domestic currency value of receipts from foreign transactions could lead to a bias against foreign trade coupled possibly with a bias towards increased direct foreign markets less exposed to the vagaries of volatile exchange rates. The empirical evidence as to the effects of volatility on trade are mixed. Some studies (Hooper and Kohlhagen 1978, Cushman 1983) find that uncertain percentage changes in real exchange rates are risky in international trade, thus having a negative effect on trade quantity¹². A study by M. Canzoneri, P. Clark and others suggests that exchange rate variability is not always necessarily costly to firms but the specific outcome depends on some additional factors that have to be taken into account¹³.

Nevertheless, volatility between the currencies of the industrial countries complicates the task of economic management in the developing countries, confronting them with the need to choose between stabilising their effective exchange rates in order to minimise macroeconomic shocks and stabilising their bilateral rate against a major trading currency in order to minimise the risk of traders, who must invoice in a specific currency. Furthermore, volatility diverts considerable managerial talent to the commercially necessary but socially unproductive activity of covering not only trade risks but also balance-sheet positions. However, as Williamson remarks, "Exchange rate volatility is a nuisance rather than a major source of concern: if this were the principal drawback in present arrangements, it is doubtful whether it would be worth contemplating major changes."¹⁴

The costs of misalignments are much more serious and have been systematically analysed by Williamson. He discusses six types of costs, several of which are alternative in nature:

- (a) **Consumption variations:** The misalignment of exchange rates leads to variations in consumption which leads to a dissatisfaction resulting from alteration of splurge and austerity. This is a welfare cost of living with misalignment.

- (b) **Adjustment costs:** This is the cost of shifting resources between industries producing tradeable goods and those producing non-tradeables. They can be high.
- (c) **Unemployment:** A major reason that adjustment is costly is that it does not start instantaneously, implying waste of resources until these resources are employed again. Where it is expected that an overvaluation will prove temporary, unemployment in the tradeable goods industries is a rational response to misalignment. Whether it is at the same time socially optimal depends on how temporary the misalignment will be. One of the problems of floating is that it leaves every economic decision-maker to make his own, often inexperienced, judgement as to whether a change in the exchange rate represents a signal that should influence resource allocation or a temporary signal that can safely be ignored. Consequently, it may well be that a change in the real exchange rate that is needed to effect adjustment is initially largely ignored, leading to larger unemployment costs that are necessary. Thus, it would appear that the dollar's over-valuation during 1981-85 has maintained higher US unemployment than it need have been.
- (d) **Productive capacity:** Under uncertainty, firms cannot be sure when an overvaluation is sufficiently temporary to merit adjustment rather than a decision to ride out the period of slack demand. An overvaluation of the exchange rate can therefore induce a firm to reduce capacity that could be productively employed at equilibrium levels. Multinationals may, on the other hand, shift investment overseas and come to rely on foreign sources of supply. Overvaluation may thus lead to de-industrialisation.
- (e) **Ratchet effects of inflation:** Depreciation produces strong inflationary pressures while appreciation does not induce equivalent pressures to cut domestic prices and wages. Thus, a sequence of overvaluations and undervaluations tends to ratchet up the price level more than would occur with the maintenance of a similar pressure of demand and a constant real exchange rate.

(f) **Protectionism:** This is a well-known phenomenon and has manifested itself again in the relations of the US with its trade partners and the EC in particular.¹⁵

2. **Insulation.** Against the expectations of its proponents, floating rates have not provided complete or even satisfactory insulation against all types of external disturbances, nor have they eliminated or even substantially reduced the demand for international reserves. Furthermore, they have not provided rapid and automatic equilibration of external payments imbalances (the US being the most important example) and they have not encouraged enough stabilising speculation to keep real exchange rate movements within narrow bands corresponding to permanent changes in the terms of trade; on the contrary the large capital inflows to the US indicate rather a destabilising influence of speculation. It could even be argued that in this case floating has produced perverse medium-run effects on current account imbalances. On the positive side, floating has not led to a collapse in international trade (though protectionism tendencies have strained the system, they have not destroyed the discipline to fight inflation), although it has facilitated more lax and inflationary policies than would have been possible under fixed exchange rates in many developing countries, in particular in Latin America, and they have not reduced the size of price elasticities in international trade.

On the other hand, the importance of discipline and coordinated macroeconomic policies for the successful operation of floating rates is still dominant. Floating rates have allowed more autonomy than fixed rates did in the use or control of policy instruments, but in a situation of free trade of goods and especially assets, and where assets are close substitutes across countries, this increased autonomy cannot be translated into more effective policies if domestic monetary and fiscal policies are unstable, unbalanced and lack some degree of coordination with those of the main trading partners. Wrong domestic policies will eventually destabilise the exchange rate because current rates are heavily dependent on expected exchange rates; the latter are closely tied to expected future macroeconomic policies and these, in turn, are strongly influenced by past

policy behaviour. It is an illusion for a small or even medium-size open economy to pursue an expansionary policy when its main trade partners follow the opposite course.

Floating rates might avoid or reduce balance of payments deficits (although even this has proved in many situations not to be the case, the balance of payments deficit increasing rather under floating rates, as happened for example to Greece after Greece adopted floating) but they do so at the cost of increases in import prices, which are quickly transmitted to general levels of prices, costs and wages. Speculation accelerates and amplifies these movements leading to increased capital exports - even in situations of capital controls - putting more pressure on the exchange rates, without on the other hand correcting in itself the internal economic policies causing them. At some point restrictive monetary policies will become indispensable in avoiding a currency collapse, but intervening price and wage rises are likely to be irreversible and so make depreciation of the currency irreversible too - the ratchet effect mentioned above.¹⁶

Deflationary policy mistakes will result, on the other hand, in currency appreciation, similarly accelerated by speculation. This may reduce or eliminate balance of payments surpluses on current account but it will not reduce sticky wages, tending instead to reduce economic activity and employment and thus lead the economy into a recession.

Furthermore, as has been pointed out,¹⁷ supporting measures are less likely to be taken with floating than with fixed exchange rates, because the promise of speedy adjustment of payment imbalances functions as an anti-incentive to take corrective policy measures at the appropriate moment because it has diminished political pressure to adopt the necessary fiscal and monetary policies. To that must be added that under floating capital movements make it difficult for a country to keep under control an inflationary process that would at least be disciplined by the external constraint under fixed exchange rates.

3. Still the existence of exchange rate arrangements does not imply a total lack of logical foundation, a non-system of anarchic relations. The optimal degree of exchange rate flexibility differs across countries in

large part because of differences in their economic structures. Both theory and empirical evidence indicate that exchange rate changes in the smaller, more open, more highly indexed economies have a proportionally larger impact on domestic prices and give them a less lasting relative price advantage than changes in the larger, less open and less indexed economies. Therefore the latter, like the USA, favour increased exchange rate flexibility while the former, like most EC countries, try to avoid frequent or substantial movements in exchange rates. It follows that uniform judgements about whether exchange rates fluctuated too much over the past decade are not likely to be valid across countries, and for reasons that go beyond inter-country differences in the theory prevailing about the efficiency of markets. At the same time, these same cross-country viewpoints concerning optimal exchange rate flexibility strengthen the case for better coordination of policies, since in the absence of such consultation and coordination, it is unlikely that "common" views about the proper distribution of the adjustment burden between exchange rates and other policy instruments will emerge on their own.

4. In order to appraise correctly the present-day system, it is important to distinguish the effects of floating rates from other developments occurring during the period of floating. No exchange rate regime would have emerged unscathed from the combination of shocks, portfolio shifts and structural and institutional changes of the last ten years. Even if major changes in the exchange rate system could be brought about, such changes would not by themselves be likely to reduce unemployment significantly, and lead to a fast world recovery. A different exchange rate system could have facilitated economic coordination and thus could contribute more to recovery but would not be sufficient by itself to bring it about.
5. Some authors¹⁸ defend floating on the grounds that it brings about competition of economic and monetary policies among countries with beneficial effects. Fixed rates (or even managed rates) and greater international cooperation could increase the inflationary bias in the system. Under the current non-cooperative system of flexible exchange rates, a monetary authority that follows an expansionary monetary policy faces the inflationary consequences of a currency depreciation. The fear

of depreciation weighs against unilateral monetary expansion with the consequence of mitigating the inflationary bias arising from the time inconsistency problem¹⁹. If, on the other hand, a group of countries decided to coordinate their monetary policies, they could undertake a joint expansion, because the common action would eliminate the fear that any particular currency would depreciate relative to the others. A joint action of the various countries would thus bring about a monetary expansion that any one of them would be unwilling to undertake on its own. According to this view, "currency competition" rather than "currency cooperation" is the best check against over-inflationary politicians and this is only possible under flexible exchange rates.

These fears appear to be exaggerated. This argument assumes symmetry among the cooperating countries (i.e. absence of a policy setter for the group whose currency would assume the role of the n-th currency) and also the absence of objective criteria that would permit to point out the diverging country, which would then have to bear the burden of adjustment.

If, on the other hand, there is an asymmetry, then all depends on the stance of the country whose currency has the n-th currency status. In this case the stance of the cooperating group would depend primarily on the stance of the leading country. This is what happened in the EMS with the DM having the n-th currency status. Germany's leading role in the EMS has brought about a stronger anti-inflationary bias among the EMS countries than would have been the case under floating²⁰.

Furthermore, in a system with relatively fixed exchange rates, there is an asymmetry between an inflation prone and a deflation prone country of nearly equal size, because the inflation prone country sustains losses of reserves that sooner or later will force a reversal of policy, while the deflation prone country can pursue this policy during a much longer period without facing any direct constraints. Criticism that fixed exchange rate regimes leading to coordination are more inflationary is not correct if there exists a deflation prone country²¹.

More generally, the "competition" argument postulates that all countries being free to choose their own and possibly different policies, after some periods a learning process occurs and the countries that have originally

chosen wrong policies change them and follow or adopt the correct policies that some other countries have chosen from the beginning. This means that after some periods, a de facto ex post cooperation is achieved through the convergence of policies towards those that have proved to be correct. But in this case it is clear that the countries having made originally wrong policy choices sustain welfare losses. Even the countries that have chosen correct policies from the beginning, can sustain welfare losses due to their interdependence with the countries having made wrong choices. Thus, the "competition" case brings about de facto ex post cooperation as against the ex-ante cooperation of the target zones case, and accepts welfare losses occurring through non-cooperation, in order to avoid potential welfare losses that could arise if all cooperating countries chose originally wrong policies.

Viewed thus, the "competition" argument becomes much weaker, since it also entails welfare losses and since its merit over the cooperation case depends on a comparison of the magnitude of loss of the "competition" case with the potential loss occurring in a wrong choice in the cooperation case, this last weighted with the probability of such a wrong choice really occurring.

In the case of a managed bi-polar or tri-polar exchange rate system with the Dollar, the ECU and the Yen, the outcome of the system would ultimately depend on the controls built into the system. If one of the three countries (the EEC taken as one country) were to be more inflationary than the others, then the possibility of realignment of central rates would always remain open.

Furthermore, it seems that the actual situation of currency competition has brought a deflationary bias into the system leading to a deeper recession and loss of growth that would have been the case under cooperation with managed exchange rates.

6. The political business cycle arguments are closely related to the above. To the extent that politicians manipulate the economy for electoral purposes, as argued under this view, international rules of behaviour could help to keep such proclivities in check. On the other hand, to the

extent that the resulting global rules can be manipulated jointly by all politicians of the coordinating monetary area, the problems of the political business cycle might be exacerbated rather than diminished²².

Even if the last argument were to be correct, there is one point which makes it irrelevant for an international system: Elections are national and in the major industrial countries that would cooperate they fall apart, so that global manipulation for electoral purposes becomes well nigh impossible. Thus, the existence of a political business cycle supports the argument in favour of international rules.

Even if one does not make a purely negative evaluation of the actual regime and even if one recognises that past US policies are justified from an American point of view, the fact remains that these policies in relation to the actual exchange rate regime represent serious disadvantages from a European standpoint.

Firstly, for most European countries the level of real interest rates necessary to keep their currencies from depreciating to a level inconsistent with economic fundamentals is much higher than the level required for domestic reasons.

Secondly, the overvaluation of the dollar has contributed to EC growth through increased exports but has led also to protectionist measures in the US which hamper US-EC trade relations.

Thirdly, the uncertainty of an about-turn of the dollar's exchange rate, coupled with fears about the long-run unsustainability of the US deficits, have brought about a climate of insecurity. The actual US situation has been compared to the policy package that evolved under President Lopez Portillo in Mexico, although the scale of borrowing relative to GNP is much less for the US. Until 1982 the market was happily financing what has since been recognised to have been an unsustainable policy course in Mexico (and the same has happened for some other Latin American countries). The mere fact that the market was equally happily bidding the dollar up during 1981-84 does not prove either that the market is infallible, as the American administration seems to

believe, nor that the current US policy is on a sustainable course. If confidence were to collapse, the result would be very unpleasant for everybody.²³

The factors which have preserved the role of the dollar until now as an anchor for the international monetary system may not be counted upon to preserve it indefinitely in the future. The financial resources derived from it by the US have been used since the 1960s, and particularly today, for purposes increasingly questioned by a large fraction of public opinion in the rest of the world, but also in the USA itself. Most people cannot justify the drain of capital from the world and especially from poor developing countries in one of the richer countries of the world. Resources that should have been earmarked for collectively agreed high-priority goals of the international community are used instead for other objectives which may be distasteful even to those who ultimately finance them. One of these is the over-financing by commercial banks of lax policies of all sorts, unduly postponing anti-inflationary readjustments in a large number of countries. Together with US military aid these have made possible an absurd level of military expenditure, often devoted to keeping in power corrupt and military and political dictatorships abhorred by public opinion.²⁴

Another weakness of the system that has manifested itself again recently²⁵ is that it amplifies psychological upheavals in the markets that are not justified by underlying economic conditions. The actual regime has very weak defences against such upheavals, unilateral or at best hastily agreed upon multilateral intervention by the Central Banks on an ad hoc basis.

As has been suggested by Sachs,²⁶ the EC could take measures to decouple foreign monetary policies from the US ones, by reducing the international role of the dollar. Through such a strategy, the US monetary authorities could pursue more inward looking policies, without having to worry much about the policy reaction abroad. Such reactions would presumably be much weaker than actually, since the international repercussions of US monetary policy would be much less, were the dollar to lose its actual international hegemonic position. An enhanced international role of the ECU could go a long way in breaking the dependence of European monetary and financial policies on corresponding US policies. The emergence of a bi- or tri-polar international

monetary system, centered around the Dollar, the ECU and the Yen would thus bring advantages not only to the EC but also to the US if it were to lead to a better sharing of international monetary responsibility.

The fast depreciation of the dollar starting in July 1985 confronts the Community with a different set of problems for the future than during the period 1981-1984.

The depreciating dollar should help keep inflationist pressures in Europe low and also ease protectionist pressures in the USA by making US export and import competing industries more competitive. The US current account should also improve. On the other hand, an increased reversal of capital flows can be expected, with capital seeking placements with the dollar substitute currencies, in particular the German mark. Appreciation of the DM and the other EC currencies against the dollar will make EC goods less competitive vis-à-vis American goods, reducing EC exports and so export induced growth in the Community. Capital flows towards the DM will also strain the exchange rate mechanism in the EMS. After two and a half years of calm, the longest period without realignments of the central rates of the EMS, pressures for realignment have manifested themselves.

This happened actually with the realignment of the Italian lira in July 1985 and the major realignment of April 1986.

Less clear is the effect of dollar depreciation on interest rates. With depreciating dollar and capital outflows from the US, the US budget deficit can no longer be treated as exogenous, since if capital outflow from the dollar continues, then the financing of the deficit will encounter limits. The US administration will have to decide on one of the following policy options, all of which necessitate a painful adjustment:

- a) The administration opts for a drastic budget deficit reduction, while monetary policy remains tight. Interest rates can be expected to fall, thus having an expansionary effect on the US economy and, through the international transmission mechanism, lowering world interest rates may contribute further to some recovery in the Community and the rest of the world. On the other hand, the tightening of fiscal policy in the US could

bring about a reduction of economic activity in the US and could further weaken the dollar, bringing some inflationary pressures to bear on the US economy.

- b) The administration opts for no or a very slow budget deficit reduction combined with easier monetary policy. In this case lower interest rates will be the outcome, both in the US and in the rest of the world with a positive effect on recovery through reduced cost of investment. On the other hand, this policy would lead to higher inflation in the US, increased depreciation of the dollar and higher capital outflow from the US.

- c) The administration opts for no or a very slow budget deficit reduction combined with tight monetary policy, i.e. continues its present policy course. In this situation, interest rates will remain high and the dollar's depreciation will be slower, inflation being held under control. On the other hand, crowding out will be much stronger on the US capital market due to the lack of foreign capital that has put this pressure out till now. A recession might result. Interest rates can be expected to remain at high levels or even start rising again. If no unforeseen events take place in the near future, the high real interest rates might in due course reverse capital flows again and bring about a new appreciation of the dollar, transmitting the recession through capital exports to the USA and high real interest rates to the Community and the rest of the world.

Although each situation and policy option of the US has different effects on the Community, all relatively sudden changes of policy and the economic situation in the US are fraught with the necessity of painful adjustments in Europe.

In the actual exchange rate regime the US and the European countries can be seen as oligopolists producing and offering one good, their currency, on the world market. The currencies are close substitutes and their relative prices, the exchange rates, vary according to the demand for them, both from private and official sources. Demand for each currency depends on the currency's main characteristics like the extent of its use (depending on the size of the national economy), the real interest rate of the assets denominated in this

currency, expectations concerning its future exchange rate (depending on expectations about the rate of inflation in the national economy and its real interest rates) and its quality.²⁷

The demand function for the dollar is characterised by asymmetry; other things being equal, there is a higher demand for the dollar than would be the case for any currency showing at any particular moment the same interest rate, expectations and quality. This is due to the difference in size of the national economies and a certain stickiness in currency preference for the dollar, due to its established position. A part of the demand is "locked in" in the dollar, coming for example from institutional reserve holders (Central banks) who cannot switch their total reserves at short notice from the dollar to another currency, and also some special users like the receivers of oil revenues who show a reluctance to switch to another currency for the denomination of oil prices and so also in part for the placement of these revenues. This reluctance to change is due to a lack of alternative which would offer the same advantages from their own point of view as the dollar.

Thus, the US has the position of an independent oligopolist on the world currency market that can set the price of its good, the dollar, independently from the other countries, the dependent oligopolists. The other countries, the EC Member States among them, can only wait for the US actions and only then react. It is clear from past experience that even correct reaction is less advantageous for the EC Member States than if they had the possibility of independent action. But it could even be that cooperation, e.g. a kind of joint profit maximisation of profits (profits being the seigneurage accruing to a national economy from the international use of its currency) could be better under certain assumptions both for the US and the EC Member States.

The political prospects for some kind of coordination of policies and also of the introduction of cooperation in the international monetary field have improved after the G-5 September 1985 agreement. In this, the finance ministers of the US, Germany, France, Japan and the UK agreed to cooperate to produce an "orderly appreciation of the main non-dollar currencies against the dollar". It seems that the US administration has moved from the position it had so far, of non-intervention in the exchange market and neglecting (or ignoring) the external effects of its policies. On the other hand, the longer-term aspects of the G-5 are unclear, because the ministers agreed on a

target, but said almost nothing about how policies should be implemented in the future in pursuit of that target. The G-5 agreement could thus initiate an era of increased cooperation, but could also remain an isolated case of ad-hoc agreement.

On the other hand, the G-5 agreement provided important signals about future policies in the USS and this seemed to be sufficient to bring about a 10% trade weighted depreciation of the dollar in the two months following. The signal is, that the US committed itself to tie its monetary policy in part to an exchange rate target, rather than to a strict money growth rule, while Japan committed itself to tighter monetary policy, thus helping the Yen's appreciation vis-à-vis the dollar. The result has been some convergence in short-term and long-term interest rates in the major economies following the agreement²⁸.

III. THE EXTERNAL RELATIONS OF THE EMS

Undoubtedly most of the European efforts towards joint exchange arrangements express their response to the very unstable environment which has been created since the end of the Bretton Woods system. The recent European exchange rate arrangement, the EMS, which aims to create a **"zone of monetary and exchange rate stability"** in Europe by enhancing the intra-coherence of the EMS currencies, is the response of the EEC to the bad experience of the independent floating exchange rates of certain major currencies and to the undisputed recognition that such a monetary situation negatively affects European integration and European economic recovery.

However, the viability of the above **"zone"** depends not only on the efficiency of the mechanism which provides intra-EMS cohesion and credibility, but also on the existence and the efficiency of an **"outward-looking mechanism"** which can protect this intra-EMS cohesion from external disturbances originated from third currencies, and in particular, the US dollar.

In fact the cohesion of the system has very often been exposed to the sudden and erratic changes in US interest rates and the dollar exchange rates. In particular after the decision of the Regan administration for non-intervention in the foreign exchange market, the above risk has been further increased since most of the Community's central banks have shown an inability to control the value of the dollar; and the dollar interventions, taken individually, have been proved, among other things, ineffective and uneconomical to the extent that larger and larger amounts of foreign reserves are required. Thus it is clear that the viability of the system requires a shared view of, and attitude to, the dollar, that was explicitly called for in all the exchange rate arrangements in Europe and in particular in the Bremen annex and the Brussels resolution.²⁹

Consequently the role of the above mentioned "outwards-looking mechanism" is to provide an **external** stability of the EMS exchange rates by allowing a coordination of the exchange rate policies of the EMS member states with regard to third currencies or a common European exchange rate policy vis-à-vis third currencies, and in particular, the US dollar.

In spite of the growing necessity for a common European strategy vis-à-vis the US dollar, and the despairing calls for a common attitude to third currencies, the Community still has no definite common policy towards major non-EMS currencies.

On the contrary, an indirect European policy vis-à-vis the US dollar has been developed, according to which the Bundesbank has determined for the most part the snake's and the EMS dollar policy.

The following deals with the reasons which have led the DM towards a de facto reference standard for monetary coordination between the Community and the USA and the function and weakness of that system. However, the study of the DM/Dollar will be more complete if firstly we analyse the main reasons for the lack of a common European dollar policy which has caused the Community's inability to play the role asked of it as one of the poles of a multiple reserve currency system.

A. The reasons for the lack of a common EC-Dollar Policy

The most important reasons for a non-defined common European attitude towards the US dollar are :

1. By comparing the importance of each of the EMS countries as export or import suppliers in manufacturing relative to the main non-member competitors, and in particular the US, it can be concluded (by looking at the US competitive weight) that the competitive position of each of the EMS members is affected **differentially** by a change in the dollar value. According to Tables 1 and 2, the US's weight in measuring export and import in manufacturing vis-à-vis each EMS country, ranking between 11.5 for the Netherlands and 22.3 for Ireland on the export side, and 7.6 for Denmark and 15.1 for the United Kingdom on the import side. The fact that

"the effective exchange rates, and hence the competitive positions, are affected differentially, within the EMS according to the importance of the dollar area in the trade in goods and services", it can also be concluded by looking at the effective exchange rates and specifically at the MERM³⁰ weight of the dollar vis-à-vis each of the EMS currencies - see Table 3.

Table 1 :

Competitor's weight in measuring export competitiveness in manufactures

Suppliers	Competitors														Total	Of which EMS	Snake 2	
	D	F	I	NL	BL	IRL	DK	UK	NOR	SWE	AUS	SWI	US	JAP				Other 1
D	0	17.5	11.1	6.0	6.0	0.3	1.8	9.3	1.1	1.4	3.9	3.9	18.3	8.1	8.3	100	12.7	14.9
F	26.3	0	13.4	6.6	5.0	0.4	1.1	9.4	0.9	2.7	1.5	3.5	11.5	7.1	7.3	100	52.8	39.9
I	25.2	16.5	0	4.7	4.1	0.3	1.1	8.1	0.8	2.5	2.0	2.9	16.8	7.5	7.5	100	51.9	35.9
NL	31.9	15.3	7.8	0	4.6	0.4	1.4	9.7	0.9	3.1	1.3	2.1	11.5	4.3	5.7	100	61.4	38.8
BL	27.9	20.7	7.1	5.4	0	0.3	1.2	7.1	0.8	2.8	1.2	2.1	13.4	4.6	5.1	100	62.6	35.3
IRL	11.6	6.9	3.6	4.7	3.1	1.6	1.9	0	1.2	4.6	1.5	2.6	22.3	9.9	10.7	100	31.3	21.8
DK	19.4	7.6	6.3	4.3	3.3	0	1.4	31.9	1.0	2.7	0.7	1.9	16.2	3.8	7.5	100	41.5	29.1
UK	18.0	10.9	6.4	4.4	4.0	0.6	0	15.1	2.1	10.5	1.6	2.2	13.5	5.8	7.7	100	47.2	29.5
NOR	18.4	7.8	5.2	4.4	3.5	0.5	4.1	11.8	0	10.6	1.4	1.9	13.4	6.1	7.9	100	43.9	30.4
SWE	19.5	9.3	5.6	4.7	3.7	0.5	4.4	13.6	2.4	0	1.7	2.4	11.3	6.5	11.4	100	47.7	34.7
AUS	26.6	8.4	11.3	4.4	3.6	0.3	1.7	8.6	1.1	4.2	0	4.5	11.7	6.8	6.8	100	56.3	37.4
SWI	20.7	11.5	9.2	3.8	3.2	0.3	1.3	8.6	0.9	3.3	3.6	0	16.4	9.4	7.8	100	50.0	29.9
US	15.0	7.8	5.7	3.5	3.2	0.3	0.9	8.9	0.8	2.3	0.8	2.0	0	24.0	24.8	100	36.4	23.4
JAP	13.2	6.8	4.5	2.8	2.6	0.2	0.9	8.0	0.8	2.0	1.0	1.9	13.1	0	12.8	100	31.0	20.3

1 Canada, Australia, Spain and Finland.

2 Let. miniature of 1978 (D, NL, BL, DK, NOR).

Source : Effective Exchange Rates and Competitiveness, Commission of the European Communities (Doc. II/578/78-E), August 1978.

Table 2 :

Bilateral import weights in trade among industrial countries in manufactures

Suppliers	Market													
	D	F	I	NL	B-L	IRL	DK	UK	NOR	SWE	AUS	SWI	US	JAP
D	0	28.9	29.7	38.1	27.6	9.2	23.2	12.9	17.1	23.3	51.8	33.6	11.0	5.9
F	16.9	0	22.0	6.6	21.5	6.4	4.7	9.0	3.7	4.9	4.7	15.8	3.9	2.4
I	12.1	11.2	0	1.5	1.7	2.5	3.3	1.8	1.8	3.7	9.1	10.6	4.4	1.9
NL	20.3	8.4	7.2	0	20.1	1.1	7.5	11.0	4.9	6.1	4.1	1.7	2.5	0.8
B-L	12.8	15.2	5.6	19.3	0	2.6	4.5	4.9	3.3	5.4	2.8	3.9	2.9	0.9
IRL	0.3	0.2	0.2	0.2	0.3	0	0.1	5.1	0.1	0.2	0.1	0.2	0.1	0.1
DK	2.0	0.8	1.4	0.9	0.6	1.1	0	3.9	6.7	9.0	1.3	1.3	0.8	0.5
UK	4.8	6.7	5.1	7.2	7.2	55.1	13.7	0	11.9	13.8	5.5	6.7	6.9	3.5
NOR	1.5	0.7	0.7	0.9	0.6	0.7	5.6	2.7	0	8.5	0.7	0.6	0.5	0.4
SWE	3.5	2.7	1.9	2.7	2.4	2.9	17.2	6.2	22.1	0	3.2	3.2	1.5	1.0
AUS	2.8	0.5	2.8	0.9	0.1	0.4	1.9	1.1	1.3	2.2	0	5.7	0.8	0.3
SWI	3.5	3.8	3.4	1.7	2.0	0.8	2.2	4.8	2.0	2.7	8.9	0	1.5	1.8
US	11.2	11.9	12.8	11.9	8.1	7.7	7.6	15.1	9.7	8.1	3.7	7.6	0	51.3
JAP	2.8	2.7	1.8	1.7	1.4	1.6	3.3	3.8	7.5	3.1	1.8	2.8	21.2	0
OTHER	5.5	6.3	5.4	3.1	3.1	1.6	5.2	14.1	7.6	9.0	2.3	3.3	11.7	29.2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Of which EMS	61.4	64.7	66.1	69.6	74.8	51.9	25.9	43.3	37.6	52.6	73.9	70.1	25.9	12.1
Snake (2) ...	36.6	51.0	44.6	59.2	48.9	35.1	17.7	40.8	32.0	52.3	60.7	44.1	17.7	8.5

Source : Effective Exchange Rates and Competitiveness, Commission of the European Communities (Doc. II/576/76-E), August 1976.

1 Canada, Australia, Spain and Finland.

2 I.e. mini-snake of 1978 (D, NL, B-L, DK, NOR).

Table 3 : Weights derived from the Multilateral Exchange rate Model MERM

	USA 1972-based	USA 1977-based
Belgium	0,1716	0,1624
Denmark	0,1497	0,2398
France	0,2497	0,2267
Germany	0,2558	0,2164
Italy	0,2590	0,2071
Netherlands	0,1248	0,1934
United Kingdom	0,3277	0,2463
Japan	0,5713	0,4974

Source: IFS, Supplement on Exchange Rates, 1985.

For all these cases, a change in the value of the dollar has different implications on the effective exchange rates and competitive position for each EMS member. Consequently, although the upward and downward swings of the dollar affect the effective rates of the EMS members in the same direction, the degree for losses or gains in the competitiveness is not the same for all the members³¹. Therefore, in the short-term the EMS members do not share a common degree of interest vis-à-vis the US dollar as far as their competitiveness is concerned. However, in the long-term, the member states are aware that such a situation negatively affects the convergence of their economic and monetary performance. These tendencies for further divergence of their economies may expose the monetary and exchange rate stability which they found as a necessary instrument for their economic recovery and integration. Therefore, potentially a common degree of interest for a common or a coordinated policy, vis-à-vis the USA, can be concluded.

2. An other reason which can explain the lack of a common European dollar policy is derived by the observation that the dollar exposure varies from one EMS currency to another according to the share of the dollar in foreign trade. By looking at Table 4A (Imports) this share varies from 50% for Italy to 10.5% for Ireland and (Exports) varies from 31.6% for Italy to 7.2% to West Germany.

Table 4(A): Invoicing currencies as a percentage in the share of nine countries' Export Invoicing currencies as a percentage in the share of nine countries' Import

	Year	Dollar	DM	Sterling	Own	Dollar	DM	Sterling	Own
Belgium	1979	12,5	17,9	2,6	42,4	23,4	18,3	9,9	28,4
Denmark	1979	16	12	8	51	27	17	5	27
France	1979	11,6	10,2	3,2	62,4	28,7	14,1	3,8	35,8
Germany	1980	7,2	-	1,5	82,3	33,1	-	3,1	42,8
Ireland	1981	21,6	1,5	40	23,5	10,5	3,8	53,4	26,9
Italy	1976	31,6	21,5	2,7	31,3	50,6	20,2	5,1	9,1
Netherlands	1980	16,5	21,7	4,2	43,5	29,4	22,9	4,7	27,9
United Kingdom	1979	17	3	-	76	29	9	-	38
United States	Estimated	-	1	1	98	-	4,1	1,5	85

Table 4(B): The dollar share in the export invoicing practices of 5 European countries

	1971	1972	1973	1974	1975	1976
Belgium	14,5	11,9	9,7	8,2	10	11,4
Denmark	22	16	15	14	13	14
France	-	10,3	8,7	8,8	8,2	9,4
Netherlands	16,7	13,2	10,1	13,2	15	13
W. Germany		6,5	5,3	3,8	4,4	5

Source: Table 4(A) and Table(B)

S.A.B. Page (1977) (1981)

"Currency of invoicing in Merchandise Trade"

National Institute Economic Review.

Consequently, changes in the dollar value have different short-term effects, in size, on the net trade balance of the EMS members, which also means that hedging against the dollar exposure is not equally important to every member. In so far as dollar hedging is not free of charge, a stability and predictability of the dollar (which could be the outcome of a common European dollar policy) is always desired by the EMS members, especially by those countries whose imports and exports are more exposed to the US dollar volatility.

3. Another, and even the most important reason for the lack of a common European dollar policy, is the differential financial implication of a change in the dollar value on the component currencies of private and official portfolios.

According to the currency substitution models a demand for any one currency is tied to the demand for all other portfolio currencies by the investor's desire to diversify the risk.

Whenever the demand for one currency changes - and consequently its expected exchange rate - the demand for, and the exchange rate of, the rest of the portfolio currencies will change as well. Because of this interdependence, a depreciation of one currency may cause an appreciation of a second and a depreciation of a third.

For reasons which will be explained later, the DM has been considered as the most substituted currency (reserve currency and transaction currency) to the US dollar, relative to the rest of the EMS currencies. Therefore, a decline in the demand and consequently an expected depreciation of the US dollar will induce an increasing demand and an expected appreciation of the DM which is particularly sensitive to changes in the demand for dollars.

In so far as the rest of the EMS currencies are not substituted among themselves and to the DM, or do not share the same high degree of substitutability, as the DM does to the US dollar; the DM will strengthen its position not only vis-à-vis the US dollar but also vis-à-vis the rest of the EMS currencies, since it takes most or even the total of changes in currencies compositions between the dollar and the Community currencies.

Therefore, the financial implications of a weakening of the US dollar will be more critical to the DM than to the rest of the Community currencies and the dilemma between revaluations (realignments in the central rates) or inflation will affect the Bundesbank decision-makers more than the other EMS monetary authorities.

Consequently, as long as the EMS currencies are not perfect substitutes, the need for a dollar policy during the downward swings of the US dollar will be more necessary and beneficial to the DM than to the rest of the currencies in the group.

- . Another reason which can explain the lack of a coordinated or common European policy vis-à-vis the US dollar is derived from the fact that each EMS member state is highly vulnerable and interdependent vis-à-vis the US. A state is vulnerably interdependent, if it is unable to reverse the influence of outside events except at a very high cost to itself.

A highly vulnerable and interdependent Member State vis-à-vis another lacks the "state power", or the ability to control or to influence the behaviour of the other³². Its power of overriding the effects of events occurring elsewhere is a function of all the country's resources (military, industry, population, natural resources, financial and diplomatic skill, etc.) relative to the other countries resources. It can be argued that the ability of each EMS member state, taken separately, to persuade or to force the Reagan administration to abandon the decision of non-intervention in the foreign exchange market, and to keep the real interest rate down, is rather low. This is true to the extent that, the defense of the Community Members is still dependent on American military and advanced-technology industry, and on the fact that since Reagan's presidency, East-West relations have substantially deteriorated.

Each EMS member state is aware of this and it has, together with their domestic, economic and political capabilities, affected their political calculations. These political calculations have affected their behaviour which in turn affects the world economic and monetary issues.³³

It seems that these political calculations differ substantially among the governments of the European Member States³⁴. There are contradictions within governments on a number of political events, (such as the Afghanistan invasion, the crisis in Poland, the Persian Gulf, East-West relations) with the British ministers inclined more towards the American position. It seems that the EC Member States have not abandoned their role of the traditional nation-state with their loyalties, prestige and autonomy. In spite of their potential attitude to increase their bargaining power collectively vis-à-vis the US and thus to facilitate and accelerate an international monetary reform which they could not realise acting alone and to face together the transatlantic misunderstanding and mistrust which has been enhanced since the end of the Bretton Woods system their governments still behave as the short-run maximisers do in oligopolistic models.

B. The DM-Dollar policy

As has been mentioned, the DM has been a de facto reference standard for monetary coordination between the Community and the USA since the end of the Bretton Woods system and the Bundesbank has determined by far the greatest part of the snake and the EMS dollar policy.

The following deals with three reasons which have assigned an indirect European policy vis-à-vis the US dollar with the DM in the centre of gravity.

These reasons are:

- 1) The better "quality" of the DM relative to the rest of European currencies;
- 2) The expanding role of the DM as an international reserve currency in spite of the efforts of the Bundesbank to forestall such a development;
- 3) The transmission of monetary disturbances from the US to the Community members, via W. Germany, since 1979, and the response of German monetary policy to these monetary shocks.

All the above reasons are derived from efforts to explain the international monetary interdependence under a floating exchange rate regime.

1) The quality of the DM and its substitutability for the US dollar

It will be argued that the better price performance in W. Germany relative to the rest of the Community countries has made the DM a high "quality" currency in Europe and elsewhere and that this factor of the

"quality" has paved the way for the DM to expand its international use in the private and official portfolios and also, it has contributed to making this currency the best and probably the exclusive alternative to the US dollar.

Since the second half of the 70s, efforts to explain international monetary interdependence through the theory of the currency substitution have grown rapidly.³⁵

As was already mentioned, the currency substitution theory presumed interdependence of the demand for money in different countries. In particular, changes in the demand for a currency and its expected exchange rates affect the demand and the exchange rate of another currency, other things being equal and regardless of the exchange rate regime. High substitutability between domestic and foreign assets in the private and official portfolios has the following outcome on the national macroeconomic policies³⁶.

First, high asset substitutability reduces the effectiveness of monetary policies in small and medium open economies regardless of the exchange rate regime³⁷. Under the extreme of the perfect currency substitution³⁸, monetary authorities are unable to change the real yield of the above assets in the long-run, because their demand curve will be horizontal.

Second, high assets and currency substitutability under a floating exchange rate regime make a change in the exchange rate, in response to a change in monetary policy, more excessive than would be allowed by a current account position, because in the aggregate portfolios weaker currencies tend to be replaced by the stronger currencies, in the absence of capital controls and other restrictions³⁹.

Third, high asset and currency substitutability reduces the effectiveness of the flexible exchange rates to insulate the home economy against some types of foreign disturbances⁴⁰.

Models of the open economy have shown that domestic prices are also affected by world variables - under certain assumptions domestic and world money is determinant of domestic output and prices - which implies that monetary authorities, in spite of their autonomy which has been allowed by the floating exchange rates, cannot fully control national prices and output. The governments who consider the exchange rate as the outcome of national macroeconomic policies and who also recognise that the reduction in the effectiveness of their monetary policies and their inability to insulate fully their economies against external disturbances is due - at least partly - to their close currency substitution, have to do something, if they really want such an insulation and a more effective monetary policy.

They will require stable fiscal and monetary policies and also a better coordination and convergence of their macroeconomic policies including the use of exchange market intervention, in their belief that such an option will stabilise expectations about exchange rates, to the extent that the latter is influenced by recent and past policy behaviour.

In so far as monetary interdependence among countries is explained by their currency substitution, the substitutability of the DM vis-à-vis the US dollar⁴¹ is one of the reasons why the Bundesbank has supported proposals for further coordination and convergence of W. Germany macroeconomic policies with the US and it has participated more than any other European central bank in the exchange market interventions vis-à-vis the US dollar.

The concept of the "quality" of a currency in relation to the price performance of the issuing country has already been mentioned by academic and professional economists⁴².

Recently Padoa-Schioppa and Francesco Papadia⁴³, by equating the quality of a currency to its predictability (predictability defined as the discrepancy between realised and expected values of the price of money - and this in turn to its stability - the latter being accompanied by the stability in all other real variables as real rate of interest and exchange rates) have concluded the following:

- a) The average rate of inflation seems for the countries and the period concerned a good substitute for the overall "quality" of the various currencies. Countries with a low average inflation rate over the period have shown a tendency towards lesser volatility in all variables examined. This fact has been interpreted by the social-political argument according to which a monetary authority which is capable of keeping the rate of inflation constant and is willing to do so, is also capable of keeping it low.
- b) There is a strong positive correlation between the international use of a currency both for financial and trade purposes, and its "quality". Over and above the use implied by the size of the issuing country, high quality currencies are over-used and low quality ones are under-used. There are several arguments to interpret this conclusion.

First, the demand for non-interest bearing monetary assets, will go down if the opportunity cost of holding those balances - in terms of lost interest rates - increases. This presupposes that nominal interest rates will rise due to inflation. According to the above, a rational investor will use or demand less the currencies with a high opportunity cost, that is currencies where the issuing countries have bad inflationary performance and he will tend to use more "cheap" currencies with a lower opportunity cost, ceteris paribus⁴⁴.

Second, it has been argued that the contribution that money gives to welfare, through "greasing" the economic activity depends on the currency quality⁴⁵. The higher the quality of a currency, the larger is the share of assets denominated in this currency - which will be used as arguments of the production of the consumption function.

Third, the low level of the inflation and/or the high predictability of the inflation of a country makes one unit of its real money more effective in producing monetary services. This will tend to increase its demand⁴⁶.

Fourth, the higher the "quality" of a currency (the lower the level of the average inflation or the more predictable the inflation of the issuing country) the greater the use of that currency as a "unit of account" by the international transactors will be, since this currency can increase the overall economic efficiency by lowering the transaction costs.

Taking into account the above, an attempt will be made to investigate the "quality" of the DM.

In particular, by employing the "average level of inflation" the "SD of inflation" and the "SD of expected inflation"⁴⁷ as proxy variables of the overall quality of a currency, we can compare the overall quality of the DM to the quality of other European currencies and the dollar.

Next, we will investigate the contribution of the quality of the DM in its international financial use. Particularly, by using regression analysis, we will test whether the factor of the quality of the DM can explain first its high share in the external liabilities of Reporting European Banks to BIS and second, its higher share in the external liabilities of Reporting European Banks, relative to the share in other currencies (Pounds sterling French Francs and HFL).

Table (5) shows the higher "quality" of the DM over the quality of other European currencies and the US dollar, regardless which proxy variable and period is concerned. For the period 1972(I) - 1984(IV), W. Germany had the lower average inflation, (4,7840). Also, during the same period the variability of the German inflation as well as the variability of the German expected inflation had been relatively low at the levels of 1,6016 and 1,4610 respectively. The United Kingdom and Italy had the highest average inflation and the highest variabilities in their actual and expected inflation. France followed with an average inflation of 9,333 and with a variability of actual and expected inflation of 2,8184 and 2,3910 respectively. The average inflation and the variability of the actual inflation for the Benelux countries is clearly better than that of France but still is far from

the level of W. Germany. The US has a higher average inflation and a higher variability of actual and expected inflation than that of W. Germany. Consequently the overall quality of the US dollar is lower than the quality of the DM but clearly higher than the quality of the other currencies, as set out in Table 5.

Table 5 :

Private Final Consumption Price: Quarterly Data

	1972(I)-1984(IV)*			1979(I)-1985(I) ^o		
	(1)	(2)	(3)	(1)	(2)	(3)
W. Germany	4,784	1,6016	1,4610	4,292	1,4305	1,3270
France	9,333	2,8184	2,3910	10,7541	2,2055	1,9073
Italy	14,957	5,1717	4,5912	16,2250		
Netherland	7,6130	2,2830	2,2003	5,8384	1,4801	1,3289
Belgium	7,3857	2,7235	2,6038	6,6388	1,8840	1,7581
U.K.	12,2775	5,6307	5,2349	9,8840	4,6047	4,1962
USA	6,5923	2,4152		6,7875	2,7855	

* For Netherland 1972(I)-1982(I) ^oFor Netherland 1972(I)-1982(I)
 * For Belgium 1973(I)-1983(V) ^oFor Belgium 1979(I)-1983(II)

(1) : Average Inflation
 (2) : Standard Deviation of Inflation
 (3) : Standard Deviation of Expected Inflation

Source: Eurostatistics: data for short-term economic analysis.

During the period 1979(I) - 1985(I), the DM had the highest quality in the sample, in spite of the relative improvement in the price performance of the United Kingdom, Belgium and the Netherlands. During the above period the price performance of the US deteriorated, but taking into account the period 1981(I) - 1985(I), it improved substantially.

The contribution of the quality of the DM in its international financial use will be investigated by regressing the log of the external liabilities of reporting European banks to BIS denominated in DM, on the log of the quality of the DM and on the log of a second variable which expresses the log of W. Germany's export in the world export market weighted by the share of W. Germany's export in its own currency.

Also the contribution of the quality of the DM in its international financial use, will be investigated by regressing the log ratio of the external liabilities of reporting European Banks to BIS, denominated in DM, to the external liabilities in pounds, French Francs and Florins respectively, on the log of the relative quality of the currencies which are concerned and on the log of a second independent variable which expresses the relative larger share of W. Germany's export in the world export market.

The log-linear equations 1 to 4 summarize the above:

$$\log M_{DM} = a_0 + a_1 \log P_{DM} + a_2 \log S_{WG} E_{WG} \quad (1)$$

$$\log \frac{M_{DM}}{M_E} = a_0 + a_1 \log \frac{P_E}{P_{DM}} + a_2 \log \frac{S_{WG} E_{WG}}{S_{GB} E_{GB}} \quad (2)$$

$$\log \frac{M_{DM}}{M_{FF}} = a_0 + a_1 \log \frac{P_{FF}}{P_{DM}} + a_2 \log \frac{S_{WG} E_{WG}}{S_{FR} E_{FR}} \quad (3)$$

$$\log \frac{M_{DM}}{M_{HFL}} = a_0 + a_1 \log \frac{P_{HFL}}{P_{DM}} + a_2 \log \frac{S_{WG} E_{WG}}{S_{HOL} E_{HOL}} \quad (4)$$

where M_{DM} , M_E , M_{FF} and M_{HFL} is the external liabilities of Reporting European Banks to BIS denominated in DM, Sterling Pounds, FF and HFL respectively. P_{DM} , P_E , P_{FF} and P_{HFL} is a proxy variable of the quality of the corresponding currency. Notice that P_{DM} , P_E , P_{FF} and P_{HFL} is a smoothing average of the period which is examined: 1972(I) - 1981(IV).

S_{WG} , S_{GB} , S_{FR} , S_{HOL} is the share of each country's export in its own currency. And E_{WG} , E_{GB} , E_{FR} , E_{HOL} is the total export in the world market of W. Germany, the United Kingdom, France and the Netherlands respectively.

It is very important to notice that the above test will be approximate, because as Padoa Schioppa and S. Papadia⁴⁸ have mentioned, first there is not a particular reason to assume a linear specification, and second there are many factors other than size or export shares and quality which influence the international use of a currency.

Regression of the financial use of the DM

Dependent Variable	Independent Variable	Constant	X ₁	X ₂	X ₃	X ₄	R ₁ ²	R ₂ ²	DW ₁	DW ₂
Log of external liabilities of Reporting European Banks to BIS, denominated in DM		-5,578 (-7,640)	-0,0873 (-1,141)	1,462 (24,74)			0,9540		1,199	
Log of the ratio of the external liabilities of Reporting European Banks to BIS, denominated in DM to the log of external liabilities of Reporting European Banks to BIS, denominated in sterling pounds		0,205 (2,113)			0,2928 (5,175)	1,7111 (6,207)		0,6328		1,205

X₁ = The log of the quality of the DM, that is the log of a smoothing average of the private final consumption price in W. Germany.

X₂ = The log of W. Germany's export in the world export market, weighted by the share of W. Germany's export in its own currency.

X₃ = The log of the ratio of the quality of the Sterling Pound to the quality of the DM.

X₄ = The log of the ratio of the weighted by the share of W. Germany's export in its own currency, Germany's export in the world market to the weighted by the share of Great Britain's export in its own currency, Great Britain's export in the world market.

"t" statistics in parentheses. All variables refer to 1972-1981 quarterly data. The external liabilities of Reporting European Banks to BIS, denominated in DM, E, as well as W.Germany's and Great Britain's exports in the world market are expressed in SDR.

As it is derived from Table 6, (first equation), the quality of the DM, and the size of W. Germany's exports in the world export market explains by 95,4%, the international financial use of that currency, the latter being the external liabilities of reporting European banks to BIS, denominated in DM.

As far the variable of the "quality of the DM" is concerned the negative sign is consistent with the above mentioned theory. It implies that as the smoothing average inflation in W. Germany becomes lower, the higher are the external liabilities of the European banks denominated in DMs. This variable is also statistically significant. The size of W. Germany's exports in the world export is also a statistically significant explanatory variable of the international financial use of the DM. Its interpretation is quite simple. As W. Germany expands its exports in the world and it invoices a high percentage of those exports in DM importers will tend to increase their deposits in DM in order to meet their transactions. Also, it can be argued that as the DM is a high quality currency it is also an attractive quotation currency for other non German exporters, and this forces importers to hold balances in this currency.

According to the second equation the relative higher quality of the DM to the Sterling Pound and the relative larger share of W. Germany's export in the world market to the share of Great Britain's export in the world market explains by 63,28% the higher international financial use of the DM over that of the Sterling Pound.

The positive sign of both the independent variables is consistent with the hypothesis. Both variables are also statistical significant. However, the results of the attempt to investigate the contribution of the relative quality of the FF to the DM and the quality of the HFL to the DM on the higher financial use of the DM over the FF and that of the DM over the HFL are not satisfactory. As it has been found, both signs are negative and thus, the hypothesis is violated. Paradoxically, both variables had been found statistical significant.

2) The expanding role of the DM as an international reserve currency

Since the end of the Bretton Woods system, the DM has started to expand its role as a reserve asset, in private and official portfolios, and after 1975 the DM replaced Sterling as the world's second reserve currency after the US dollar. Many reasons have contributed to the speed of the above development.

Apart from the high quality of the DM⁴⁹, the recent large share of German exports in the world exports and the efficient network of financial facilities in W. Germany⁵⁰ which are the basic conditions that make for the emergence of a country as a reserve centre, other short-run market reasons have contributed directly in making the DM the second international currency in a period of less than ten years.

The most important of these reasons is the desire of the private financial agencies and to a minor extent, the monetary authorities, of countries to diversify part of their dollar reserve into a portfolio of other currencies, of which the DM has played the predominant role.

This shift away from the dollar was the response of the private financial agencies and central banks to reduce the risk which has been increased by the end of the Bretton Woods system and to improve the returns in so far as a somewhat higher interest rate could be obtained in Euro-deposits⁵¹. For the monetary authorities there are some additional reasons, among which are the anonymity afforded by such deposits, and the assessment that chances of Euro-deposits being frozen would be smaller than that of dollars held in the United States⁵². The diversification out of the US dollar and towards the DM, the Yen, the SF etc has been described as the evolution of a multi-currency reserve system and in the beginning, it has been considered as inherently unstable.

The growing role of the DM as an international currency - as far as its store of value function is concerned - in the diversified portfolios of private and official agencies has certain disruptive effects on German domestic monetary conditions, as well as the

exchange rate policy. Movements in and out of the dollar have focused more on the DM than on the other European currencies with the result of pushing the DM to its limits with respect to currencies of the other members whenever a growing trust (mistrust) of the US dollar has been developed.

While it is more the movements "out" of the dollar which may cause conflicts with policy objectives in W. Germany - the authorities cannot simultaneously maintain the exchange rate, control monetary growth and achieve external balance - movements "in" the dollar not only modify the inherent strength of the DM within the EMS and consequently improve the competitiveness of W. Germany in Europe, but also contribute to permitting more liberal monetary and fiscal policies and relax temporarily the German monetary authorities from their inherent dilemma.

The German monetary authorities have very often manifested their opposition to the growing reserve role of the DM⁵³. They have argued that the DM lacks the main characteristics of a real fully fledged reserve currency. Its functions as an intervention currency, transaction currency, unit of account and quotation currency, in third countries are very small in size, and that the German money market, does not have the depth to absorb sizeable sales or purchase without disruption. Also, they argued, that the Federal Reserve cannot directly offset the effects of changes in foreign reserves holdings on the American financial system, because the Bundesbank has not a developed policy instrument, similar to the US of open-market transactions in government securities.

The negative response of the Bundesbank to the growth of DM as an international currency is thus realistic and, if somewhat conservative, is fully understandable.

During the 70s, the Bundesbank has imposed certain restrictions especially on non-residents acquiring DM assets in Germany with short-maturity and also, it has attempted to limit the holding of liquid DM assets on the Euromarket.

However, although German monetary authorities have succeeded in restricting foreign (official and private) holdings of DM assets in Germany, placings of Euro-deposits denominated in DMs increased rapidly, without the German authorities being able to do anything against this development.

According to Kruse⁵⁴: "The growth of the DM is thus a process over which the Bundesbank and other community central banks have little control. The Bundesbank may be able to restrict DM holdings in Germany, but this will only channel funds into the Euro-DM assets. Furthermore, the major factor affecting the rate of reserve diversification into DM, namely the relative attractiveness of alternative assets depends mainly on the relative economic performance and policies of the United States. In other words, the magnitude of upward pressure on the DM and hence the degree of strain on exchange rates in the EMS caused by a growth in foreign official DM holdings will be determined in large part by forces external to the Community."

As it can be concluded from table (7), the share of official investments of exchange reserves in national markets, other than that which has been identified with banks held in USA is relatively low, for the whole period under review. Particularly the share of investments of exchange reserves in W. Germany, although the largest in size after the investment in the US, is considerably lower, if it is compared with the official investments of foreign exchange reserves in the Euro-market, where still the Euro-DM is the second currency after the Euro-dollar. One of the reasons which can explain the difference in the share of official investment of foreign exchange between national and Euro-market, and especially between the domestic DM, and the Euro-DM, is that the Bundesbank has succeeded in controlling and restricting official DM holdings in Germany, but not in the Euro-market.

The Pattern of Investment of Exchange Reserves

	1977	1978	1979	1980	1981	1982	1983	1984
1. Currency composition of official deposits with banks in Europe, in Canada and Japan and with certain offshore markets. In %								
1A) In National Markets. In %	9,15	9,77	6,76	12,08	12,95	13,44	12,31	11,86
DM	2,65	3,25	2,61	3,29	2,62	2,52	1,69	1,16
SF	1,56	0,63	0,46	1,10	2,14	1,47	1,12	0,87
Yen	1,08	2,83	0,69	3,15	4,26	3,18	5,31	6,12
Sterling	1,92	1,26	1,46	2,06	1,74	2,52	2,48	2,52
FF	--	--	--	--	--	0,52	0,56	0,48
Other Currencies	1,92	1,78	1,53	2,47	2,14	1,15	1,12	0,63
1B) In Euro-Market. In %	35,54	34,22	38,48	34,06	33,06	33,19	33,95	33,36
US Dollars	63,85	55,52	56,15	54,53	56,04	60,13	57,06	57,29
DM	14,45	17,66	13,53	16,32	15,13	12,31	15,70	16,24
SF	3,85	4,83	4,61	5,49	5,48	4,09	4,06	3,50
Yen	1,03	2,31	3,23	1,51	1,74	1,47	2,32	2,82
Sterling	0,36	0,73	1,15	1,51	0,37	0,52	0,45	0,48
FF	--	--	--	--	--	0,42	0,33	0,38
Other Currencies	1,92	3,15	4,53	4,18	3,73	3,67	3,50	2,62
1C) Deposits with certain offshore Markets. In %	5,30	5,99	4,92	3,84	3,97	3,36	3,72	4,76
1A + 1B + 1C	100	100	100	100	100	100	100	100
2A) % of exchange reserves identified with banks held in USA, to total foreign reserves	60,28	62,27	47,31	47,25	50,85	61,33	58,53	62,09
2B) % of Eurodollars to the total foreign exchange reserves	25,35	20,94	25,62	25,06	23,22	22,37	3,06	21,21
2A + 2B + other = Total foreign exchange reserves	100	100	100	100	100	100	100	100

Annual data, at the end of December.

Source: BIS Annual Report.

Table 8 :

External Liabilities of Reporting European Banks in foreign currency
(Eurodollar and other currencies)

In %

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982*	1983*
US.\$	81,2	77,9	70,2	73,3	68,3	70,5	73,2	74,05	73,2	68,2	65,5	68,5	71,07	77,7	78,17
DM	8,1	12,9	14,5	14,8	16,6	15,5	15,4	15,2	17,3	18,2	19,2	15,6	13,19	9,3	8,68
SF	7,0	7,5	7,7	6,6	8,9	8,2	5,9	5,1	5,7	5,2	6,1	6,44	7,66	4,9	4,80
Sterling	1,4	1,2	2,0	1,6	2,3	1,6	1,2	1,2	1,7	2,02	2,27	2,97	2,06	1,29	4,80
HFL	0,6	0,7	0,85	1,03	1,1	1,2	1,3	1,1	1,2	1,4	1,32	1,03	--	0,86	0,89
FF	--	0,5	0,43	0,81	1,1	1,2	1,2	1,03	1,2	1,4	1,70	1,80	--	0,80	0,87
Yen	--	--	--	--	--	--	--	--	0,67	1,21	1,55	1,40	1,82	1,36	1,64
Other	--	--	--	--	--	--	--	--	--	--	--	--	--	3,57	3,86
	100,00	100,0	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

* External Liabilities of Reporting B.I.S. Banks (Eurodollars and other currencies)

Source: B.I.S. Annual Report

Table (8) shows the share of the DM in the Euro-market. For the whole period, the DM is the second Euro-currency after the Eurodollar. The expansion, and the large size of the DM in Euro-market is due to the attractiveness of the DM, as a store of value, combined with its appreciation vis-à-vis the US dollar until 1980.

The expansion of the Euro-DM is also due to the attitude of certain oil exporting countries, which during the weakness of the US dollar, have invested a part of their outstanding dollars in the Euro-market and particularly in Euro-DMs. By the end of the 70s and with the strength of the US dollar vis-à-vis other currencies the share of the official deposits in national markets other than in the United States declined. Exceptions were the yen and the pound.

The increase in official placements in the non-dollar sector of the Euromarket was limited to Euro-DM and to Euro-Yen deposits.

The share of the DM in the external liabilities in foreign currencies of reporting European banks to BIS, has been declining, but it is still very large in relation to the share of other non-dollar currencies.

The relatively large size of the DM after the US dollar and Eurodollar in private and official portfolios reflects among other things the preference of investors towards an attractive "store-of-value" currency. As has been mentioned, changes in their preferences lead towards substantial shifts in such holding, and this can cause serious disturbances in so far as these changes influence flows and reserves stocks.

How can German monetary authorities deal with this problem⁵⁵? First, as it has been mentioned, their attempt to counteract such a development by imposing restrictions on non-residents etc, has not been successful to the extent that they can not influence the Euro-market. Perhaps, they could promote an orderly investment of funds in secondary reserve currencies by offering special investment opportunities to foreign central banks⁵⁶ ensuring that such transactions do not pass through the foreign exchange market. At the

same time they could develop a bilateral understanding between them and large reserve holders, under which the latter supply information to the former of their intentions and thus make it possible for the Bundesbank to take off setting actions, if this is considered necessary. But still, it is doubted that such an option can influence the private Euro-currency market.

Alternatively, they could promote the establishment of an attractive, artificial currency, which could influence the diversification process acting as a substitution account. The SDR and/or the ECU can be the two candidates which can absorb any existing dollar overhang. However, the SDR is still not significant in private and official businesses and the ECU is still limited by a regional role, although since 1983 it has appeared as a currency in its own right, and it has started being used in settlements with third countries.

Finally if monetary authorities in the US refuse to do anything against monetary disturbances which have originated in their country - to follow sound and confident domestic financial policies and be responsive to the rest of the world and thus to iron out the disturbances at the source or to forestall the spreading of these disturbances - then the rest of the world and in particular W. Germany, have to undertake active policies against the above disturbances, including large exchange market interventions. This is because the large size of the DM in the private and official portfolios makes W. Germany more vulnerable and sensitive to external disturbances than any other country.

3) The role of W. Germany in the transmission of monetary disturbances from the US and the response of the Bundesbank.

The role of W. Germany in the transmission of monetary disturbances to Europe from the US and the response of the Bundesbank to external monetary shocks, since the transition to floating and especially since

the inception of the EMS, is another reason which can explain why the DM has become a de facto reference standard for monetary coordination between USA and Europe.

As it has been shown from several studies⁵⁷ the economic and monetary linkages between the two sides of the Atlantic and among European countries have not eroded since 1973. Although there is a decoupling of several important economic variables, short-term monetary interdependence has not diminished. New channels of monetary transmission which co-exist with a floating exchange-rate regime make the insulation properties of that system less effective.

Since 1980, a new external US interest rate constraint on Europe has emerged. Padoa-Schioppa and Stefano Micossi in their influential empirical work⁵⁸ have found a strong and significant contribution of US interest rates to the predictive performance of German and French interest rate equations, while little influence is detected for the United Kingdom and Italy. They also have found that the German interest rate improves the performance of Italy and French interest rate equations and when the German interest rate is included as an explanatory variable together with the US interest rate, the latter becomes insignificant. See table (9) and its explanatory footnotes. This table summarises the result of the estimation of various vector autoregression models of money market interest rates in selected countries⁵⁹.

**VECTOR AUTOREGRESSION MODELS OF INTEREST RATES
IN SELECTED COUNTRIES**

period of estimate: 14.11.1979 - 28.3.1984
(weekly data)

dep. var. (1)	independent (lagged) var.s (2)		FPE _{AR} (3)	FPE _{MV}	χ^2 (4)
RUS	RUS(2)	RGE(1)	.926	.965	1.9
	"	RUK(2)	"	.921	5.1
	"	RGE(1) RUK(1)	"	.924	1.3/4.5
RUK	RUK(13)	RUS(1)	.343	.344	0.8
	"	RGE(1)	"	.341	3.2
	"	RUS(1) RGE(1)	"	.344	0.1/2.5
RGE	RGE(18)	RUS(1)	.207	.200	9.7°
	"	RUK(1)	"	.206	3.7
	"	RFR(1)	"	.207	2.2
	"	RUS(2) RUK(1)	"	.194	16.2°/8.3*
	"	RUS(2) RFR(1)	"	.197	14.5°/5.1*
RFR	RFR(4)	RUS(4)	.115	.113	12.7*
	"	RUK(10)	"	.116	
	"	RGE(20)	"	.106	71.0°
	"	RUS(4) RUK(1)	"	.112	15.5*/2.9
	"	RUS(4) RGE(1)	"	.114	9.2/0.3
RIT	RIT(7)	RUS(1)	.021	.021	0.7
	"	RUK(2)	"	.021	7.7*
	"	RGE(5)	"	.020	19.1°
	"	RUS(3) RUK(2)	"	.021	4.8/8.1*
	"	RUS(1) RGE(5)	"	.020	1.8/20.2°
	"	RUS(1) RFR(1)	"	.021	0.3/2.6

Source: Servizio Studi della Banca d'Italia. Temi di Discussione, Agosto 1984, No 33.

(1) Natural logarithm of money market rates respectively in the US, the UK, Germany, France and Italy.
 (2) In parentheses the number of lagged values included for each variable. (3) $FPE = \frac{[(I+m+1)SSR / (I-m-1)]}{I} \times 100$, where I is the number of observations, m is the number of lagged variables and SSR the sum of squared residuals. The subscripts AR and MV refer respectively to the autoregressive and multivariate models. (4) Under the null hypothesis, the log-likelihood ratio of the best MV and AR equation residuals -- $L = -2 \ln \left(\frac{SSR_{MV}}{SSR_{AR}} \right)^{1/2}$ -- is asymptotically distributed as a central χ^2 with degrees of freedom equal to the number of restrictions. * indicates rejection of the null hypothesis (that the additional variable or variables do not improve FPE) at a 5 per cent significance level; ° indicates rejection at a 1 per cent significance level. For trivariate equations, the χ^2 values refer to the variables in column (2) in the same order.

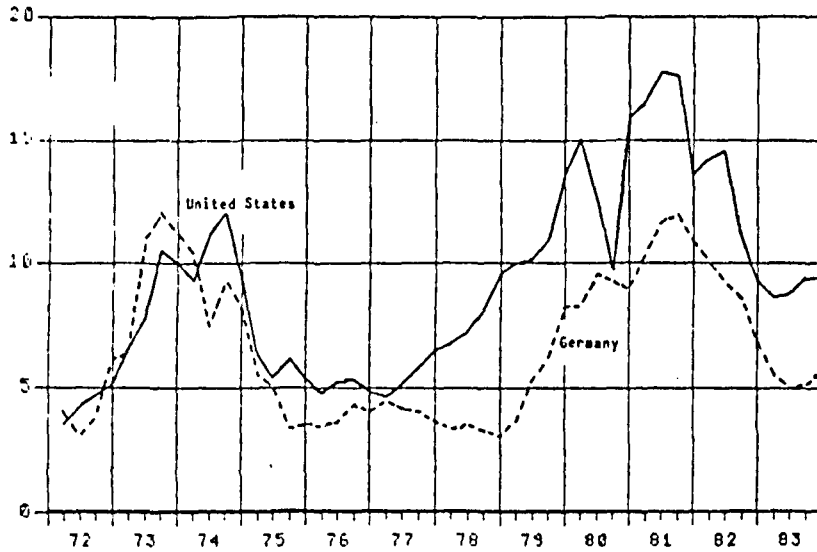
These results have two important implications:

- a) Interest rates in Europe were to an extent "uncoupled" from those in the US by letting the exchange rate take up the balance of adjustment.

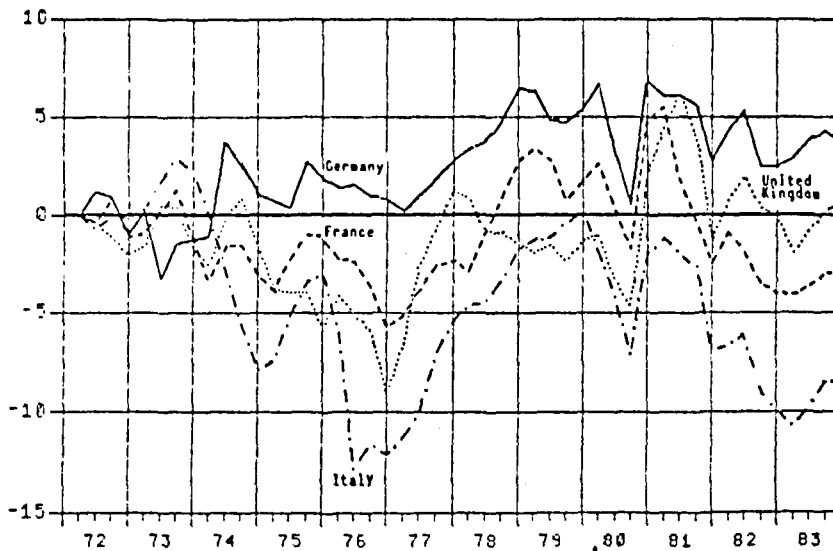
See chart (1).

Chart 1

SHORT-TERM INTEREST RATES IN THE UNITED STATES AND GERMANY



SHORT-TERM INTEREST RATE DIFFERENTIALS IN SELECTED COUNTRIES
VIS-A-VIS THE UNITED STATES
(US - foreign countries)



Source: Servizio Studi della Banca d'Italia.
Temi di discussione, August 1984, No 33.

Also, this is verified by the evidence that the variability of the European interest rates were lower during the 1979-83 period and this was not the case for the US interest rates. See Table (10). Also, according to the same table, it becomes clear that the European countries response to the US interest rate variability has been reflected in the dollar exchange rates. For the period 1980-83, dollar bilateral exchange rates are strongly associated with interest rates in the US rather than to the foreign markets.

Table 10

VARIABILITY OF MONEY MARKET INTEREST RATES AND OF
EXCHANGE RATES IN SELECTED COUNTRIES (1)

	1973-83	1973-79	1980-83	1983
variability of money market interest rates				
- United States	1.13	0.74	1.81	0.48
- United Kingdom	1.44	1.57	1.22	0.67
- Germany	1.02	1.10	0.87	0.39
- France	1.25	1.31	1.15	0.21
- Italy	1.50	1.93	0.75	0.60
correlation coefficient between exchange rates and money market interest rates (2)				
- \$ effective (a)	0.336	0.097	0.371	0.392
- £/\$ (a)	0.010	0.113	-0.326	0.217
(b)	0.177	-0.175	0.303	0.109
- DM/\$ (a)	0.089	-0.052	0.056	0.013
(b)	0.309	0.018	0.327	0.427
- FF/\$ (a)	0.251	0.044	0.077	-0.317
(b)	0.326	-0.012	0.327	0.260
- Lit/\$ (a)	0.139	-0.076	0.037	-0.220
(b)	0.238	-0.163	0.391	0.495

Source: IFS.

(1) Variability is measured by the standard deviation of monthly percentage changes. (2) (a) Correlation with national interest rates. (b) Correlation with US interest rates.

b) The "information" stemming from US interest rate is conveyed to France and Italy via the German interest rates. In the EMS external monetary shocks tend to be transmitted via W. Germany. This can be seen in Table (11). According to this table interest rate correlations are stronger between W. Germany and the USA and between German and either France or Italy, than they are between USA and either France or Italy.

Table 11

CORRELATION COEFFICIENTS BETWEEN INTEREST RATES IN SELECTED COUNTRIES

(a) 1960 I-1972 I (b) 1972 II-1979 I (c) 1979 II-1983 IV

	United Kingdom			Germany			France			Italy		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
nominal interest rates												
US	.77	.40	.52	.63	.62	.89	.92	.58	.44	.56	-.21	.27
UK				.46	.24	.57	.73	.52	.04	.39	.11	-.27
GE							.64	.49	.57	.67	-.72	.41
FR										.61	.08	.88
real interest rates (1)												
US	.44	.76	.72	.15	.59	.31	.20	.64	.75	-.18	.43	.80
UK				.30	.57	-.27	.25	.51	.73	.00	.35	.83
GE							.65	.71	.06	.39	-.29	.03
FR										.62	-.03	.78
interest rate innovations (2)												
US	.13	.03	.00	.14	.27	.44	.38	.18	.60	.09	.36	.41
UK				.10	-.24	-.30	.14	.12	.12	.08	.23	-.29
GE							.05	-.10	.00	.27	-.14	.12
FR										.14	.38	.78

Source: IFS

(1) Nominal interest rates deflated with the CPI growth rates in the four quarters up to and including the reference quarter. (2) Innovations for each subperiod are the residuals from regressing (nominal) interest rates on a constant, a time trend, three seasonal dummies and four lagged values of the dependent variable $i_t = a_0 + t + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 i_{t-1} + a_5 i_{t-2} + a_3 i_{t-3} + a_4$

In so far as W. Germany is the channel of monetary disturbances from the USA to the EMS countries, it can be concluded that deliberate and responsible policies of W. Germany vis-à-vis the US may smooth out the intensity of those disturbances in the Community Member States, and consequently may contribute to the external stability of the EMS. This could be one reason why other EMS countries have "allowed" W. Germany to determine, to a large extent, the European policy vis-à-vis the US.

However, the Bundesbank has another reason, to seek to coordinate its monetary policy vis-à-vis the US.

As it has been mentioned above, information stemming from the US reaches W. Germany long before it reaches other EMS members. Consequently, in the absence of continuous consultations by the Bundesbank with other EMS central banks the policy response of W. Germany to forestall capital outflows during the strength of the US dollar may lead to an upward pressure on the DM relative to other EMS currencies, and this could reduce the benefits already derived from the appreciation of the US dollar, that is by the improvement of German competitiveness vis-à-vis the US⁶⁰.

Since the breakdown of the Bretton Woods system, the European versus dollar policies have passed through three phases:

The first phase spanned the period 1973-1979 and was characterized by a prolonged dollar weakness and the consequent strength of the DM. The second phase covered the period from January 1980 to October 1980. During that time the performance of the US dollar was mixed. The third phase has been marked by the pronounced dollar strength and it covers the period between November 1981 to September 1985.

The first phase of the European-Dollar policy: 1973-1979

Generally speaking, during the whole period of the first phase the US dollar was under severe downwards pressure, except for an 8-month period of eight months, between April 1975-November 1976, which is

considered as a calm period for the dollar exchange market. The first phase may be divided into three parts. The first covers the period until March 1975, the second covers the above-mentioned calm period, and the third covers to the period between Dec.1976-Dec.1979. During the first part of the first phase, the US dollar weakened sharply vis-à-vis other currencies. In February 1975, the market rate of the DM per US dollar was 2,2845, i.e. the US dollar had devalued against the DM by 38,2%, since January 1973 by 16,7% since February 1974, and by 11,8% since October 1974 (see Chart A1 and A2 in Appendix). This weakness of the US dollar was mainly due to the uncoordinated and unsynchronized monetary and fiscal policies of the US vis-à-vis the rest of the industrialised countries, to the impact of oil imports on the US balance of trade, and to the desire of private and also official investors, especially from OPEC countries to diversify part of their reserve holdings towards currencies other than the US dollar and pound sterling.

In particular the decline in the interest rate differential against the US rates since mid-1974, the widening of the inflation gap between US and its main industrial competitors in favour of the latter (see Chart D in Appendix), the increasing pessimism about the US balance of payments position and decline in the industrial production of the US since the end of 1974, at levels lower than in Europe, had affected expectations about dollar exchange rates and had resulted in making the US dollar-denominated assets less attractive for OPEC and other investors. Shifts "out" of the dollar and towards other currencies in particular the DM, had intensified tensions in the exchange markets and affected expectations for certain important European currencies. These expectations had been further reinforced, when, in January 1975, and in an atmosphere of anti-inflation announcement, statistics showed that Germany's current account surplus for 1974 had been impressive.

After a calm period, from April 1975 until November 1976, the US dollar had begun to weaken vis-à-vis other currencies. During the whole of the third part of the first phase, the US dollar had followed a sharp downward trend. By the end of December 1979, the US dollar had plunged 38,8% against the DM, 36,7% against the S.Fr., 26,3%

against the HFL, 25,16% against the BF, 20,8% against the FF, 14,16% against the Dkr and 9,17% against the Italian Lira, from its highs of 25 months before (see Chart A in Appendix).

Effectively, in December 1979 the US dollar had been devalued by 9,85% from its levels of November 1977 (see Chart B in Appendix). The main reasons for the new, severe dollar weakness were the emergence of a US current account deficit as the result of the rapid expansion of the US imports due to the continuous recovery of the US economy, the heavy short-run capital outflows and the fears for a further deterioration of the US inflation differential with other countries.

By late 1977, unlike to W. Germany and Japan, the US current account was again in deficit, after a surplus of 4,4 billion dollars in 1976. An increase in the US demand for oil and manufactured imports was the natural consequence of rapid US growth and in spite of the efforts of the US administration to reduce the oil imports by new energy programmes, the US trade deficit had swollen by 42 billion dollars at the end of 1977.

Interest rates in the US increased, but at levels below those in earlier postwar recoveries and the European interest rates remained nearly the same until the end of 1978, so that the interest rate differential favouring the US dollar was not able to attract short-term capital in the US and thus to finance the ongoing US current account deficit.

Expectations for a sizeable depreciation of the US dollar and appreciation of a number of European and non-European currencies, in particular the DM and the yen, had prevailed in the market, with resulting in a reduction in confidence in the US dollar. Therefore, capital continued to flow out of the US dollar denominated assets and the dollar continued to depreciate progressively against other currencies deteriorating inflationary performance in the US at a time when other industrial countries had succeeded in curbing their inflations. Additionally, the second oil shock aggravated the severe inflation problem in the United States.

Therefore, during the third part of the first phase, there were increasing expectations among the market participants about major realignments in the exchange rates, which made the US dollar denominated assets even less attractive.

In particular, the persistent huge current account deficit in the US, the difficulties in financing it, the faster pace of inflation in the US than that of other industrialised countries coupled with the market participants doubts that Carter's administration could curb effectively the accelerating inflation, the inability of US interest rates to halt capital outflows and the prevailing attitude in the exchange markets from mid-1977 to late 1978 that the United States would welcome a sizeable depreciation of the US dollar, were the main reasons affecting expectations of a depreciation of the US dollar, and made US dollar denominated assets less attractive to investors. At the same time, the huge current account surpluses of W. Germany and Japan, coupled with an OECD statement in late June 1977 that countries with current account surpluses should allow their currencies to appreciate, the adherence of the US to this decision as a means of rectifying trade imbalances, the success of certain European countries in controlling their inflation, and the increasing real interest rate differential between the United States and W. Germany in favour of the latter, influenced expectation for appreciation of certain European and non-European currencies, and in particular the DM, and made assets denominated in that currency unusually attractive.

Since the transition to the floating exchange rate system and the end of the efforts of the Community countries to maintain fixed margins against the US dollar, West Germany has mostly determined the momentum of the currencies of certain small and open European countries, vis-à-vis the US dollar. At the same time, Great Britain, Italy and in certain periods France, have chosen to manage individually their exchange rates vis-à-vis European currencies and the US dollar⁶¹.

So far, the exchange rates of the pound sterling, Italian Lira and the French Franc were determined by market forces or by an individually managed floating system, and as a result the comprehensiveness of the

European exchange rate system was under severe threat. There were several efforts to enhance the comprehensiveness of this arrangement. The most important ones are: a) The Fourcade Plan; b) The Duisenberg Plan and c) The Commission and ECOFIN Plan.

While all these attempts are referred as intra-exchange rate arrangements by introducing some reference standard or target zones for intrapolicy coordination, it was only the Fourcade Plan which foreshadowed a joint-dollar policy by introducing a crawling tunnel for the Community exchange rate level to the dollar, and also positive intervention obligations. The Fourcade Plan was submitted in May 1975 but it met little positive response from countries participating in the arrangement and from European individual floaters.

European policy vis-à-vis the US dollar rather relied on a bilateral basis, during that period, except on three occasions: First, in early July 1973, a joint Community operation with the Federal Reserve Bank of New York, in the form of an extended swap arrangement, took place in order to halt the downwards swings of the US dollar. Second, in March 1975, a decision was taken to limit the daily movements in the dollar rate of EC currency to 0,75% or 1%. And, the third, on November 1, 1978, where the US administration, in cooperation with the Governments of W. Germany, Japan and Switzerland, announced measures designed to correct the excessive exchange rate movements, which were not justified by fundamental economic forces.

As mentioned above, the favourable price performance of W. Germany and consequently the high overall quality of the DM, the expanding international role of that currency, and the role of W. Germany in the transmission of monetary disturbances from USA to Europe, made this country a natural candidate for the system's nth currency country and the DM a reference standard for monetary coordination between the two sides of the Atlantic.

On the other hand, the main reasons which led the above small and open European countries to tie their currencies to the strong and appreciating DM, and thus to float jointly against the weak dollar, losing in the short-run part of their freedom to increase growth and employment are:

- a) The strong currency option⁶². The governments of the above countries wished to chose an inflation target with great precision and high credibility. In the context of a floating exchange rate regime, and world monetary instability, W. Germany's price performance could guarantee such a target. The strong currency option of the small and open European economies during the relevant period is fully consistent with the discipline hypothesis: Under fixed exchange rates⁶³, a country that inflates at a rate higher than its trading partners will, ceteris paribus, suffer a deterioration in its balance of payments, i.e. a loss in international reserves. Since a devaluation will be regarded as an indication of the failure of government policies, the high inflation country will have to discipline itself by restraining aggregate demand so as to bring its inflation rate into line with those of its trading partners⁶⁴.
- b) According to Thyggesen⁶⁵ membership in the above exchange rate arrangement has yielded double benefits to the participant small and open European countries. These benefits, which have offset the deflationary impact of keeping their currencies externally stronger through linkages to the DM, are:

"Relief from short-term nervousness about exchange market developments, because the resources for intervention were adequate to the task, and avoidance of a deterioration in the creditworthiness which would probably have set in otherwise, given the persistent current account deficits. The greater freedom of action has been used to keep real demand and employment higher than would otherwise have been feasible."

Although, during the first phase all European central banks intervened in the dollar foreign exchange market, in order to dampen fluctuations in the exchange rate of that currency against their currencies, W. Germany, Japan, Switzerland and the United States, had undertaken the bulk of the intervention operations. These interventions had been further reinforced by opening and extending swap credit lines among the central banks of the above countries. W. Germany, apart from the intervention in snake currencies, had carried out the largest proportion of the Community intervention vis-à-vis the US dollar.

Table 12 shows the interventions of the Bundesbank to correct disorderly markets. The third column especially shows the interventions of the Bundesbank in the US dollar. The net increase in its foreign assets implies the purchase of US dollars, whenever the German monetary authorities found that the DM/US dollar exchange rate downward fluctuations were excessively large or erratic. As the table shows, the Bundesbank had intervened heavily in the US dollar market to support this currency and less in the snake currencies, except in 1976, which was a calm period for the US dollar.

During the first phase, the Bundesbank, together with the National Bank of Switzerland and the Bank of Japan, intervened heavily to stabilize expectations about exchange rates of their currencies vis-à-vis the US dollar. Also, during the same period the Federal Reserve and in particular the Foreign Exchange Trading Desk (The Desk) acted several times to check sharp rate declines on individual days but not to alter the dollar's overall trend.
See Table 13.

Changes in the Bundesbank's net external position

Period	Total	Interventions in the snake	Other foreign exchange movements
DM billion			
1973 January-March	+ 19.9	- 0.6	+ 20.5
April-May	- 0.9	- 1.5	+ 0.6
June-July	+ 8.5	+ 5.8	+ 2.7
August-September	+ 3.4	+ 4.3	- 0.9
October-December	- 4.5	- 1.1	- 3.4
January-December	+ 26.4	+ 6.8	+ 19.6
1974 January	- 2.5	+ 0.2	- 2.8
February-June	+ 5.4	+ 4.1	+ 1.3
July-September	- 6.4	- 3.5	- 2.9
October-December	+ 1.6	- 0.7	+ 2.3
January-December	- 1.9	+ 0.2	- 2.1
1975 January-March	+ 5.0	-	+ 5.0
April-September	- 6.6	- 1.8	- 4.8
October-December	- 0.6	-	- 0.6
January-December	- 2.2	- 1.8	- 0.4
1976 January	+ 0.1	-	+ 0.1
February-March	+ 9.7	+ 8.7	+ 1.0
April-July	- 4.6	- 1.4	- 3.2
August-mid-October	+ 7.7	+ 8.0	- 0.4
Mid-October-December	- 4.1	- 3.5	- 0.6
January-December	+ 8.8	+ 11.9	- 3.1
1977 January-June	- 0.8	- 1.5	+ 0.7
July	+ 2.0	+ 0.0	+ 2.0
August-September	- 2.0	- 0.3	- 1.7
October-December	+ 11.3	+ 3.1	+ 8.2
January-December	+ 10.5	+ 1.3	+ 9.1
1978 January-March	+ 4.5	- 0.7	+ 5.2

The following data, from April 1978 until June 1979, is approximate and has been estimated by M. L. Greene research studies. It reflects active intervention of the Bundesbank to counter disorderly dollar market.

1978 April-July	+2.07 approx.
August-October	+3.81 "
November-December	+3.30 "
1979 January-June 14	-5.99 "

The column "Other foreign exchange movements" reflects interventions in the US dollar exchange market.

A(+) sign signifies a net increase in foreign assets.

A(-) sign signifies a net decrease in foreign assets.

Source: Annual Report, Deutsche Bundesbank and M.L.Greene: US experience with exchange market interventions, Sep. 1977-Dec. 1979. Staff Studies 12B. Board of Governors of the Federal Reserve System. August 1984.

Table 13:

US intervention in selected currenciesJanuary 2, 1975 - December 31, 1979

	<u>Operations to counter disorderly markets</u>					<u>Operations to repay market related debt and reconstitute reserves</u>				
	In the market and from customers					In the market and from central bank of issue				
	DM	SF	HFL	BF	YEN	DM	SF	HFL	BF	YEN
Jan. 2 - Mar. 31 1975	-705,3	-157,5	-49	-16,7	-	-	-	-	-	-
Sep.30 - Dec. 31 1977	-857	-	-	-	-	+2,2	+382,1	-	-	-
Jan. 3 - Mar. 31 1978	-2 063,8	-70	-	-	-	+68,3	+401,2	-	-	-
Apr. 1 - Jul. 31 1978	-247,3	-32,1	-	-	-	-2 251,1	+612,4	-	-	-
Aug. 1 - Oct. 31 1978	-2 205,8	-294,1	-	-	-	+11,60	+486,5	-	-	-
Nov. 1 - Dec. 29 1978	-5 705,8	-734,7	-	-	-207,4	+419,7	+566,7	-	-	+95,4
Jan. 1 - Jun. 6 1979	+3 395	+71,1	-	-	+334,4	+3 258,5	+2 325	-	-	-
Jun.15 - Aug.29 1979	-5 545,5	-117,9	-	-	-	+8 817,9	+67,1	-	-	-
Aug.30 - Dec.31 1979	-4 642,2	-44,2	-	-	-	+1 523	+46,4	-	-	-

In million of dollars equivalent. A minus sign signifies a net sale of the designated currency or a purchase of dollar.

Source: M. L. Greene, "US experience with exchange market intervention, January-March 1975 and September 1977-December 1979. Staff Studies 127, 128. Board of Governors of the Federal Reserve System, August 1984.

In the face of the downward swings of the US dollar and the excessive strength of its currency, the Bundesbank bought a large amount of US dollars which resulted in an increase in its net foreign assets by 7,3 billion of DM during the period of October 1973-March 1975 and by 14,49 billion DM during the period of January 1977-March 1978. See Table 12.

Moreover, by the end of July 1978, when expectations for sizeable depreciations of the US dollar and appreciations of the DM and yen had prevailed and had been reinforced in the market, the Bundesbank, together with the central banks of Switzerland, Japan and the Bank of England, bought sizeable amounts of dollars. According to Table 12, from April 1978 until December 1978, the Bundesbank had bought 9,29 billion US dollar equivalent in DM. At the same time the Desk intervened by selling 8 158,9 million DM equivalent in US dollars.

The Bundesbank had attempted to coordinate its active intervention policy (to correct the disorderly US dollar market) with the Federal Reserve and with other major central banks, either by continuous consultations among their officials or by opening credit swap lines, in particular to the Federal Reserve.

According to M. L. Greene⁶⁶, in 1973, German monetary authorities opened a swap line to the Federal Reserve. In mid-1978 they doubled this line. On January 27, 1975, an agreement had been reached, that the Bundesbank should intervene heavily in Frankfurt, and the Desk should move quickly to prevent a further decline in the US dollar/DM rate in New York by selling large amounts of DM in the market.

Also, on February 1-2, 1975 officials of the Federal Reserve, Bundesbank and Swiss National Bank met in London and agreed to coordinate their intervention policies.

It is worth noticing that on 1 November 1978, President Carter and the FED announced various actions to correct the excessive decline in the dollar. The programme featured a further tightening of monetary policy and a 30 billion dollar package of foreign currency resources to finance US participation in coordinated intervention in the

exchange market. Of these \$30 billion, \$6 billions concerned swap arrangements of the Federal Reserve with W. Germany, 5 billion with Bank of Japan and \$4 billion with the Swiss National Bank. Announcement of this programme resulted in an improvement of the position of the US dollar vis-à-vis the yen and SFr immediately, and the DM later.

In 1979, the US dollar was under recovery. In addition to President Carter's programme to correct the decline in the United States dollar, the oil shortage caused by the political upheaval in Iran was temporarily helping the dollar. The rise in oil prices increased the demand for the US dollar by oil importers. Also, interest rate differential between US dollar and W. Germany favoured the US dollar. According to Table 12, during 1979, the Bundesbank intervened in the dollar market by selling \$5,99 bn dollars in DM, in order to limit the decline of its currency and to absorb some of the liquidity created by earlier interventions.

However, after mid-June 1979, expectations of a new decline of the US dollar had grown substantially. During that period the German and Swiss central banks and the Desk intervened forcefully and quickly. According to Table 13, the Desk intervened heavily during the period of June 15, 1979 - December 31, 1979. They bought 10 187,7 million dollars equivalent in DM and 162,1 million dollars equivalent in SF, and finally they succeeded in stabilising the US dollar. See also Table 14.

Table 14:

US and W. Germany selected interventions: Oct. 1, 1980 - Sep. 30, 1981

	US and German operations to counter disorderly markets		US and German operations to repay market related debt and reconstitute reserves	
	U.S.	W. Germany	U.S.	W. Germany
Oct. 1, 1980-Feb. 19, 1981	2 459	2 269	4 358	-1 353
Feb. 19, 1981 - Mar. 31, 1981	4	171	25	-100
Apr. 1, 1981 -Aug. 12, 1981	-	5 601	-	-320
Aug.13, 1981 - Sep. 30,1981	-	41	-	41
	Both countries		Both countries	
Oct. 1, 1980- Feb. 19, 1981	4 728		+3 005	
Feb.19, 1981- Mar. 31, 1981	175		-75	
Apr.11, 1981- Aug. 12, 1981	5 601		-320	
Aug.13, 1981- Sep. 30, 1981	41		41	

In million of dollars. A positive number indicates a purchase of marks or a sale of dollars.

Source: M. L. Greene : US experience with exchange market interventions. Oct. 1980 - Sep. 1981. Staff Studies 129. Board of Governors of the Federal Reserve System. August 1984.

The second phase: January 1980 - October 1980

During the second phase, the US dollar had followed a different pattern than that of the first phase. As mentioned above, after a relative improvement in the first half of 1979, the dollar weakened again, but thanks to sizeable coordinated intervention by the Federal Reserve, the Bundesbank and other central banks, the dollar had been stabilized, however at historically low levels.

During the second phase, i.e. between January 1980-October 1980, the US dollar had fluctuated widely, but it showed a tendency to appreciate against other currencies.

Dollar rates during that time reflected political uncertainties arising out of the Iranian and Afganistan situations, coupled with severe adverse shifts in trade and current account balances of other countries and in particular W. Germany.

During the second phase, inflation reached its peak in the United States, increasing the inflationary gap with W. Germany and other industrialized countries, which also suffered from inflationary pressures due mainly to the second oil shock. The monetary and fiscal policy of President Carter during that time resulted in an increase in short-term interest rates, but the interest rate differential which had been favourable to the US, hardly explained these foreign exchange developments. Industrial production declined sharply in the United States but relatively less than in other countries, while the current account balance of W. Germany shifted to a sizeable deficit of 13 billion dollars during the first half of 1980. As inflationary pressures grew in Europe, coupled with tendencies for the US dollar to appreciate, the oil bill increased and European countries and in particular W. Germany reacted by increasing the interest rate, in order to halt inflationary pressures and also to finance the ongoing current deficits.

During the first half of 1980, the Bundesbank made a massive intervention in the exchange market, in order to moderate a temporary - as they thought - but significant tendency for the dollar to appreciate against the DM and to curb the upsurge in interest rates, in W. Germany and in the Community in general.

According to Table (15) and Chart (2), the EMS countries had sold approximately 12 billion dollars in the market during the first half of 1980. A large part of this intervention had been undertaken by the Bundesbank. Also, the Desk during that time, in coordination with the Bundesbank and other major central banks, intervened heavily in the market to stabilise the unusually fluctuating US dollar exchange rate.

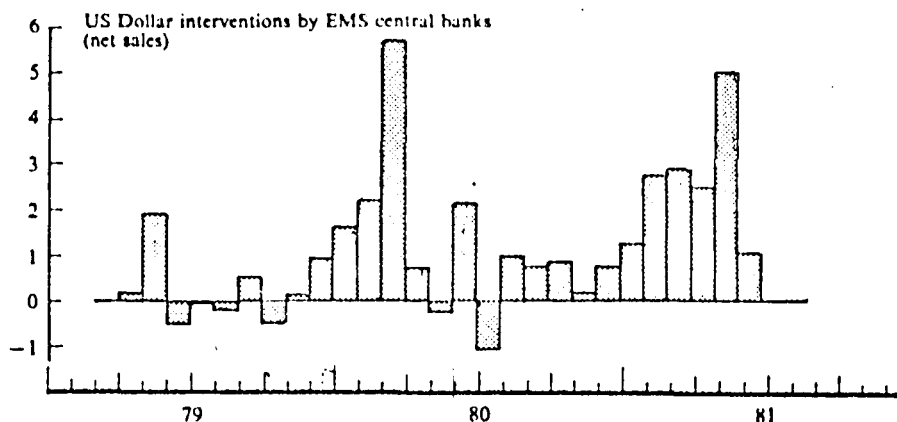
Intervention by the EMS central banks

Semester	Net dollar intervention (USD '000 million)	Gross intervention in Community currencies (000 million ECU)	
		Total	Of which: notified to FECOM
1979 I	1.6	n.a.	1.0
II	1.0	n.a.	2.0
1980 I	12.0	n.a.	2.2
II	2.0	n.a.	2.3
1981 I	15.8	n.a.	7.6
II	10.0	n.a.	2.3
1982 I	14.9	7.0	1.9
II	11.0	6.0	0.5
1983 I	3.0	22.0	5.3
II	7.0	7.0	1.1
1984 I	4.5	10.0	2.1

Source: FECON, "The EMS", J.van Ypersele de Strihou/J.C. Koeune, COM 45.298/1, 1984.

Up to a point the comparison between dollar intervention and intervention in Community currencies which this table shows can be misleading. Indeed, the amounts of dollar intervention listed represent net interventions. Gross sales of dollars were more important: for the period April 1979 through June 1981 they might have reached USD 50.000 million, as against 32.400 million for net sales. The amounts listed for intervention in Community currencies represent gross intervention: thus they include, among others, the operations by which central banks repurchase their creditors' currencies in order to settle debts arising from interventions carried out previously.

Chart (2)



Source: European Economy. Annual Economic Report 1981-1982, No 10, Nov. 1981.

The third Phase : November 1980 - September 1985

By the end of the second phase, the US dollar resumed a continuous upwards trend, which lasted until the third quarter of 1985.

The main reasons for the strengthening of the US dollar against other currencies and in particular the DM, has already been mentioned.

As is known, during that time, the US followed a policy-mix of expansionary fiscal policies (expansionary tax and expenditure policies) and a tight monetary policy by giving more emphasis to bank reserves than to interest rates as a means of controlling the growth of money and credit aggregates. The result was an increase in the nominal and real interest rates in the United States, which attracted investments leading to capital inflows and since the exchange rate was set in the short to medium run in the asset market, it also led to appreciation (see Chart C in Appendix).

The strength of the US dollar had been further reinforced by several other factors, of which the following are the most significant:

a) The current account of the US was pushed into surplus by the end of the second quarter of 1980, while the current account of the major industrialised countries turned into sizeable deficits, in particular in W. Germany (see Table A in Appendix).

The main reasons for this development were:

- i) The different effects of the second oil shock on the current account of the US, W. Germany and Japan (the US had succeeded in reducing the percentage of its consumption of energy to GNP);
- ii) US non-oil trade had been improved substantially vis-à-vis EC and non-oil producing developing countries.

As this situation in the US current account had been backed by the announcement of a fiscal expansion in terms of an expansionary tax expenditure policies, anticipations of an increase in current and future demand for US goods was further intensified. This fact gave

further impetus to the strengthening of the US dollar, to the extent that forward looking assets and exchange markets led to an increase in current long rates and exchange rates.

- b) Several OPEC countries and other international financial investors who had been diversifying out of the US dollar, found that they had to liquidate their holdings in other currencies and in particular in the US dollar. Also international financial investors tended to favour this currency as they found the US the most free capital market, with the most efficient banking system, and found the new administration to be very stable. At the same time, oil importers increased their demand for US dollars, in order to pay their ongoing oil bills, also the result of the second oil shock.
- c) Inflation in the US began to decline from its peak of 1978 and at the same time the European countries, including the low inflation countries, suffered from severe inflationary pressures, rising unemployment and a decline in industrial production (see Chart D in Appendix).

As mentioned before, US dollar appreciation has several repercussions on capital movements, interest rates, investments, inflation and trade flows to the rest of the world and consequently on Europe. In this sense, each Community country has derived certain advantages and disadvantages from the appreciated dollar. Therefore, as the system has no common policy towards major non-EMS currencies, and in particular towards the US dollar, each member organises its dollar policy on a cost-benefit analysis. Generally, since the inception of the EMS all the members have allowed their exchange rates vis-à-vis the US dollar to absorb a part of their real interest rate differential with the US - the degree of which differed from country to country - and thus they had the opportunity to ease their monetary policies. However, EMS countries have coupled their interest rates with that of W. Germany which, by applying a more 'autonomous' monetary policy, determined to extend their monetary policies and for reasons which have already been mentioned, a part of the external position of their currencies vis-à-vis the US dollar.

Also, EMS members intervened heavily in the foreign exchange market by purchasing their currencies against the US dollar. According to Table 15, from the second half of 1980 until the end of the first half of 1984, the EMS central banks had intervened by selling 68,2 billion dollars - net dollar intervention. A large portion of this intervention was undertaken by the Bundesbank. From November 1979 until June 1981 the Bundesbank's net dollar interventions totalled 18.700 million US dollars, that is around 2,3% of Germany's 1980 GDP.

According to Table 14, from October 1980 until March 1981, W. Germany intervened by selling 2 440 million dollars, in order to counter disorderly markets, while the US sold 2 463 million US dollars. At the same time the Bundesbank bought 1 453 million dollars to reconstruct reserves etc while the US sold 4 383 million dollars to repay market debts etc.

In May 1981, the US administration officially confirmed that apart from exceptional circumstances they no longer intended to intervene on foreign exchange markets. Although in the Versailles Summit, in July 1982, American attitude, as far as the intervention operations concerned, was quite different, the Bundesbank carried out the bulk of the interventions, sometimes in coordination with other European central banks and Japan.

The reasons for the US authorities' unwillingness to intervene in the exchange markets is based on the assumption that the exchange rate produced by market forces must constitute the economically desirable rate. Contrary, in Europe and elsewhere, the willingness to intervene rests on the assumption that market participants are unable or unwilling to assess properly the equilibrium value of exchange rates.

Far from these theoretical and also ideological differences, Americans objected to foreign exchange interventions for the following three reasons⁶⁷:

- a) US resources to finance interventions were regarded as limited. Federal Reserve had to borrow through swap arrangements all currencies it sold in the exchange market.

- b) Any drawing on a swap line required the consent of other central banks and also required repayment within 3-6 months.

- c) As long as there is no any common policy vis-à-vis the US dollar, the different bank approaches to intervention may reflect different and possibly conflicting objectives. Thus the effectiveness of the intervention is undermined.

From these three objectives the first two concern the period when the dollar was weak, while the third emphasizes the period of the dollar weakness and strength.

The ineffectiveness of the dollar intervention has also been emphasized by Europeans and others. It has also been pointed out that the efficiency of intervention will be increased, if the discretionary operations are replaced by a mechanical rule, an indicator, which will give signals, when and to what extent central banks should intervene. Thus central banks will exert a stabilizing influence in the market, as long as they do not try to go against fundamental market trends, and to the extent that the above indicator is consistent to an exchange rate 'norm'.

A part from the 'automaticity' as an organizing principle on the dollar interventions, others, such as the European Commission⁶⁸ proposed the following action in response to increasing demand for a common attitude to the US dollar.

- (a) Reinforcing the regular consultations should be proposed to the US and Japanese authorities. The various Community bodies (Council, Commission and specialist committees) should take part in these consultations, which would provide a regular forum, with periodicity to be decided, for an exchange of views on financial and monetary problems of common interest. The procedure should also be able to be used when the situation on the foreign exchange market appeared to be unrelated to the underlying economic data - i.e. manifestly outside the limits that economic likelihood would

suggest - or when interest rate differentials caused excessive and undesirable strains on the Community's money and financial markets.

- (b) The Community monetary authorities should encourage American and Japanese monetary authorities to participate in meaningful cooperation on exchange and interest rates. The US authorities in particular should be invited to abandon their *laissez-aller* exchange rate and interest rate policy. Also, discussions with the US authorities should be started with a view to replacing the existing network of swaps between certain Community central banks and Federal Reserve Bank of New York by a single credit line between the latter and the EMCF. This would provide tangible evidence of European determination to avoid appearing disunited from the United States point of view.

- (c) The coordination of Community central banks' interventions in third currencies should be improved. The central banks should make regular and frequent common assessments of the ECU's exchange relationships, paying attention to the average level of interest rates desirable in the Community. Their intervention policy should be based on this assessment.

- (d) With the same objective in view, it is important to organize the use of Community currencies in intra-marginal interventions. At present, a central bank's use of a Community currency for intervention inside the margins is subject to the good will of the central bank whose currency is requested. Interventions are instead made in dollars and this often has the effect of emphasizing an undesirable movement of the US currency or of undermining the coherence of the participating central banks' attitudes towards that currency. Alternatively, if no intervention is made inside the margins, the currency under threat slides until it reaches its bilateral margin, at which point the intervention amounts may be far greater than those that would earlier have been necessary to reverse the trend.

Since 1983, the external relations of the EMS vis-à-vis the US dollar have improved as central banks are in touch round the clock with exchange information. Concerted action has taken place on specific occasions as part of the day-to-day management of exchange markets, and more recently thorough discussions have been held in the appropriate committees on common approaches in response to actual or foreseeable disturbing international developments in interest rates and exchange rates⁶⁹ .

Specifically the Bundesbank consults the other EMS members about actual developments in DM/US dollar exchange rates, and nominal interest rates. The result of this continuous consultation and negotiation among the Bundesbank and the other central banks of the EMS members make the policies in the region more predictable, and thus alternative policies which can lead to a misallocation of resources are avoided. This promotes the economic efficiency of the system, but it can also increase its consistency, that is the minimising of policy conflicts among the members if the outcome of these negotiations and consultations lead to a better understanding among the participants, a shared responsibility and decision-making for all, and finally towards a better distribution of the adjustment cost among the members of the Community.

At the time of writing, a new development took place in US dollar exchange rates, which has been considered as chronically overvalued. After the earthquake in Mexico, the threat to the US banking system from the ongoing debt of the third world, due mainly to the overvalued dollar and the increasing disappointment of American farmers and exporters, due to the continuously appreciated dollar, forced President Reagan to authorize Mr. J. Baker, US Treasury Secretary in New York, on September 22, 1985, to try to improve the coordination of economic policies decision among the five leading industrial countries - The Group of Five -.

On Sunday, 22 September 1985, the leading industrial countries decided to work towards lowering the value of the dollar by closer coordination of their macroeconomic policies. At the same time President Reagan launched the second plan of his two pronged strategy to head off protectionism.

On the day following this announcement, foreign exchange dealers sold dollars and sold them quickly. As the foreign exchange market did not wait for the intervention, the dollar fell to its lowest point, since June 1984.

However, the success of this operation depends on the strength of the US commitment to concerted intervention. On the same day, the White House said it might be ready to intervene in foreign exchange markets in cases other than when those markets were disorderly. Also, the success of those interventions is dependant upon whether interventions are followed by consistent policies. "Interventions can be useful only when are supported by other policies", had been said during the Williamsburg meeting.

However, no indication exists of a reduction in the US budget deficit. Also, there are some suspicions that massive intervention by the US authorities would boost the US money supply and could increase inflationary pressures in the economy. This concern is very much on the mind of Mr. Paul Volcker, the Fed Chairman.

These two factors have made foreign exchange managers in other countries, sceptical of President Reagan's initiative.

IV. PROPOSALS FOR A REORGANISATION OF THE INTERNATIONAL MONETARY ORDER AND THE POSITION OF THE COMMUNITY

A. Options for an International Monetary Order

Before proceeding to some proposals of our own for a reorganization of the international monetary order that take into account an increased role that the Community as such could play, it is useful to review the main proposals already put forward. These proposals fall into the following main categories: 1) Return to fixed exchange rates; 2) Exchange rate formulas; 3) Adjustable exchange rates; 4) Capital controls; 5) Convergence of domestic macroeconomic policies; 6) Establishment of target zones; 7) Combinations of two or more of the above mentioned.

1. Fixed exchange rates:

The advantages to be expected from this option are: a) There is already a significant convergence of inflation rates that would facilitate the maintenance of fixed exchange rates, at least among the largest industrialised countries. The establishment of fixed rates among them would give considerable impetus to the discipline necessary to coordinate policies among the other countries. b) The loss of policy autonomy should not weigh much since it is largely illusory also under floating. c) Even a partial, i.e. infrequently adjustable, rate would have a strong positive effect on domestic stability and the resumption of world trade growth.

On the other hand, some important arguments can be brought to bear against a reintroduction of fixed exchange rates: a) The major countries would be unwilling to completely subordinate monetary policy to the dictates of a fixed exchange rate. b) Even though there has been some convergence of inflation, structural differences among countries are large enough to preclude the emergence of a common rate

of inflation, so that realignments would be both frequent and sizeable. c) Real exchange rate adjustments would be needed to reflect changes in comparative advantage. d) Prices and wages are too sticky, in particular downwards, to obtain the requisite real exchange rate movements without changes in nominal exchange rates. e) In a system of fixed exchange rates the problem of the nth currency that will take on the function of numeraire is much more important than under flexible exchange rates. At present, there seems to be an absence of a willing or readily acceptable candidate for the central currency in the system.

For these reasons a return to a fixed exchange rate system like the Bretton Woods system is not seriously contemplated at present.

2) Exchange rate formulas:

These are trying to give an answer to the following questions: If nominal exchange rates need to be adjusted to reflect fundamental changes, is there any rule or formula that could help determine the right structure of rates? How useful are "presumptive indicators" for indicating the need for adjustment?

The main advantage of establishing a set of multiple indicators is that they could help to detect problems at an early stage and induce a more timely and symmetrical pattern of adjustment than would otherwise occur. They could trigger discussions of policy among countries that make coordinated surveillance workable. Opposition to them is usually based on the arguments that there is no simple indicator that will consistently transmit reliable adjustment signals, and that even if one existed, practical problems over its precise definition, measurement and monitoring would limit its applicability. Still, criticism against the use of indicators seem to be mainly technical in nature, and not a criticism of the principle of introducing indicators as such. Being technical in nature, the counter-criticism argues that technical solutions can be found for a technical problem. The difficulty of identifying good indicators is not an argument against their use, but rather an argument for trying to develop better and more reliable sets of indicators.

The main arguments for the introduction of rules follow Friedman's legacy that rules are better than ad hoc policy measures and intervention because they permit steady development in economic variables, the build up of correct long-term expectations which in their turn exercise a stabilising influence. Furthermore, they are seen as representing a reasonable middle ground between the excessive rigidity of fixed exchange rates and the excessive variability of floating exchange rates. The main counter argument is that the factors calling for change or which are symptoms of maladjustment are too varied, too unpredictable and too unstable to be contained ex ante within any formula or rule. Another problem is that, unlike indicators, which are less restrictive because they do not specify which combination of adjustment measures a country should adopt, but only indicate a necessity for adjustment, rules are more restrictive as they imply a certain policy which must be adhered to. In this sense monetary, and in great part fiscal, policy is no more independent under rules than it would be under fixed exchange rates. Due to this, together with the lack of an international method of supervising their application and imposing efficient sanctions in case of non-application, in some situations countries may have a strong incentive to cheat, particularly if they are convinced of the strong commitment of the other countries to their application.

Sachs⁷⁰ has pointed out that any reforms of the international monetary system introducing rules must take into account the sources of monetary instability. Different types of shock are not neutral on their effects on different types of rules. Any rules or new system should also help to accommodate the major exogenous (non-policy) shocks that the system is likely to face, whether they are of the portfolio switching sort or of other types, like policy mistakes or oil shocks.

The most articulated proposal in this sense has been put forward by Ronald McKinnon⁷¹. McKinnon's central position is that world and national inflation does not depend on national money growth, but is the sum of money growth in some key industrialised countries, mainly the USA, Germany and Japan. "World money" is the sum of transactions balances in hard currency countries. The exchange rate is a highly

sensitive indicator and can be used as such by the central banks. Information provided by the exchange rate can be harnessed to increase the efficiency of domestic monetary policy.

To mitigate the cycles of worldwide inflation and deflation the proper coordination of monetary policies has two complementary aspects:

1) In response to continual and unpredictable shifts in international portfolio preferences, nations can adjust their domestic money supplies to stabilise exchange rates. In particular the US should alter its long standing postwar tradition of paying little or no attention to the foreign exchanges in formulating its monetary policy. Orienting national money growth toward the exchange rate can be a powerful instrument for securing stability and a better balance of the national money supply with the direct and indirect demand for it. Surprise inflations or deflations of a purely national origin would be dampened.

2) Cyclical fluctuations in "world money" must also be avoided. The Federal Reserve needs to make US monetary policy more symmetrical with respect to other important hard currency countries such as Germany and Japan. Instead of being synchronised with money growth in the rest of the world, US M1 should vary in an offsetting fashion through mutual agreement. Growth in "world money" would then be stabilized.

The monetary authorities in the hard currency countries should be prepared to deviate symmetrically from their medium-term non-inflationary monetary target, in order to allow interest rates, rather than exchange rates to play a greater role in coping with shifts in international portfolio preferences. Money growth in the industrial world should be concentrated in that hard currency country whose currency is unduly strong in the foreign exchanges.

A target for joint money growth, based on normal money growth in each of the three countries, can be introduced before specifying some method of varying money supplies in each country to secure better exchange stability. Controlling growth in world money is necessary in order to stabilise the joint price level. The international rule is of the form:

$$\dot{M}_W = 0.45 \dot{M}^{US} + 0.35 \dot{M}^{GE} + 0.20 \dot{M}^{jA}$$

with a dot over a variable denoting percentage change on an annual basis.

The simplest and least structural format for any tripartite monetary agreement then suggests itself:

Each central bank would deviate from normal money growth according to whether its currency was strong or weak in the foreign exchanges. These deviations in national money growth rates would be subject to the constraint that world money be kept within its target range. If one central bank is substantially above its normal money growth path, at least one other should be symmetrically below.

From McKinnon's previous empirical analysis, the demand for world money - the joint money supply of the three reserve-currency countries - is more stable than the demand for any one of them. This remains true in the absence of exchange controls or other undesirable impediments to international capital.

The adoption of his proposal necessitates the calculation of rough equilibrium exchange rates. Prices and costs in domestic commodity markets -largely those in the diversified manufacturing sector- should be kept aligned across the three countries. Applying this principle requires some purchasing power parity calculation: An appropriate base year must be selected as well as price or cost indices for deflating subsequent changes in nominal exchange rates.

McKinnon proposes the introduction of monetary rules in two stages. The first stage would be in the form of "soft" target zones, zones the three countries are not immediately obligated to achieve. Stage one offers some important advantages:

- a) New exchange parities within narrow margins are not required. The three central banks need only respond to gross exchange rate misalignments.

- b) How each national money supply is altered from its norm is unspecified. Domestic open market operations or unsterilized intervention in the foreign exchanges could be used.
- c) How Germany and Japan might best manage their dollar exchange reserves -with possible implications for each monetary base- is left open.
- d) Preexisting monetary agreements or exchange rate pacts, such as Germany's membership in the European Monetary System, are not contravened.

The second stage entails a more complete financial unification among the reserve currency countries. Instead of adjusting purchasing power parities continuously, nominal exchange rates would be fixed within narrow hard margins. Official intervention in the foreign exchanges would be designed to eliminate short-run exchange and interest rate volatility for any one country, to equalize interest rates across countries and to fully stabilise a broad index of international tradeable goods prices. The following rules would have to be observed under the second stage:

- a) Recognizing the existing exchange intervention practices under the dollar standard, the Bundesbank and Bank of Japan would have the primary responsibility for direct intervention, whereas the Federal Reserve system would stay passive on a day-to-day or week-to-week basis.
- b) Neither German nor Japanese interventions would be sterilized in their domestic monetary consequences.
- c) Symmetrically, when official intervention occurs, the Fed would allow its monetary base to change in the opposite direction to that of the other two countries. To ensure that this American response was automatic, the Bundesbank and Bank of Japan would hold their working exchange reserves directly on deposit with the Federal Reserve Bank of New York (at a market rate of interest).

In effect, each of the three countries would divide its monetary base into a **domestic** and a **foreign** component. The domestic component would grow according to a prespecified rule so as to achieve the long-term money growth targets, i.e. 5.5 percent in Germany and United States, and 8 percent in Japan. Open-market operations in domestic currency bonds would be the principal instrument for achieving this steady growth in the domestic component of the base. In contrast, the foreign component of each country's monetary base would vary with the ebb and flow of the international demand for each currency--as accommodated by official intervention to stabilize the two exchange rates.

In order to apply the second stage, some additional major conceptual problems must be taken into account:

First, some broad mutual constraint should be negotiated on the use of fiscal policy: preferably a balanced budget rule for each country over some four- or six-year moving average. Because fixed exchange rates establish a degree of monetary unity, central banks in any one country should not be put in the position of financing fiscal deficits elsewhere. One government should not be able to drain savings from the system on a massive scale and generally increase interest rates, as American fiscal policy was doing in 1983-84. Because the monetary pact is meant to include only "hard" currency countries, fiscal restraint is necessary to discourage any one of them from using the inflation tax in the future, which, of course, is inconsistent with the very idea of fixed exchange rates.

Secondly, provision must be made to tailor "world" money growth to secure full stability in the prices of tradeable goods. Much statistical work would have to be done in constructing mutually agreeable prices indices for tradeable goods, the stability of which is the ultimate target of the monetary triumvirate.

Although McKinnon's proposal is theoretically attractive it cannot avoid some serious criticism.

Firstly, its theoretical acceptance depends on the acceptance of monetarism, according to which inflation is a purely monetary phenomenon and so "world" inflation depends on the developments of the money base of some key countries. Although it cannot be denied that inflation depends on the development of monetary aggregates, it is not unanimously accepted that it depends on them only. Inflation is not a purely monetary phenomenon, but depends also on structural characteristics, like rigidities in the labour and capital market. If this is so, monetary rules would be not sufficient to keep "world" inflation in check and so establish stable exchange rates.

Secondly, convergence of monetary and fiscal policy as proposed by McKinnon is certainly a necessary condition for establishing stable exchange rates. But is it a sufficient condition, or to put the question differently, what degree of convergence must be achieved in order for it to result in stable exchange rates? Would it not be possible to achieve stable exchange rates without having first to wait for a very high degree of convergence which might take a long time before it is realised? Could not more stable exchange rates achieved not through monetary rules but through some kind of management help to bring about a greater degree of convergence?

Thirdly, is such a clear distinction between the domestic and the foreign component of the monetary base possible, as McKinnon postulates, so that the one varies in accordance to domestic and the other to international demand? It seems doubtful that the foreign component of the monetary base could vary without affecting the domestic component and in this case hinder domestic economic policy. If the dichotomy in a domestic and foreign component is blurred, then McKinnon's proposal becomes very difficult or impossible to apply in practice.

Fourthly, from a political point of view, his proposal seems impossible to realise in the near future, since it puts, at least in the second stage, a major constraint upon the use of fiscal policy, requiring some broad mutual constraint in its use. If fixed or managed exchange rates imply a loss of national autonomy in the field of monetary policy, McKinnon's proposal implies a major loss of

national autonomy both in monetary and fiscal policy. National economic policy aims could thus be realised only through the attainment of "international" policy aims. Despite the fact that this would in the end be an advantage for the national economies, national governments are certainly not for the the time being willing to face such a drastic curtailment of their autonomy, or to accept important reductions in public deficits in order to comply with the monetary rules. The US government would certainly be the first to refuse.

Sachs⁷² criticises the McKinnon proposal on the ground that in each case the global money shifts were less inadvertent than Mc Kinnon portrays. He cites two cases (1971-2 and 1977-8) when monetary policy in the US was expansionary by design and the tight monetary policy of the Volker era which was part of an explicit anit-inflation program. In these cases, the exchange rate of the dollar changed not due to an autonomous portfolio adjustment (the McKinnon explanation) but because of the public's accurate perception that US monetary policy had substantially changed. In all of these cases the FED designed a strong movement in the direction that occured, although the global ramifications of those changes were underestimated.

Thygesen (1984) expresses his general sympathy to McKinnon's proposal which gives to monetary policy an international orientation, through a policy rule related to the exchange rate. However, he mentions that an application of McKinnon's proposal is not easy under the present situation. Severe misalignments in the exchange rates around sustainable levels and the lack of understanding in the United States do not allow a constructive dialogue on monetary coordination à la McKinnon.

He proposed, that in a world with excessive misalignments between the dollar the European currencies and the yen and the lack of any prospect for global arrangements, the following scenario, may be the best alternative.

"Maybe a market process could bring the United States and Europe to a point where monetary coordination became feasible. The scenario I have in mind is the following: Assume a substantial dollar

depreciation (at approximately parallel growth rates on the two sides of the Atlantic), but not so far as to fully remove the present overvaluation of the dollar in terms of the European currencies. At some point the US interest in avoiding additional inflation through allowing the dollar to continue to slide will converge with European interest in avoiding a further loss in competitiveness vis-à-vis the United States through continued real appreciation and create the basis for some common action to stabilize exchange rates at a level which is seen by both sides as sustainable. There is an asymmetry between upward and downward movements in the dollar; the former may be criticized on both sides of the Atlantic, but it is hard to address in a coordinated manner, because it contains compensating features that are attractive to both: inflation fades in the United States, and export-led growth picks up in Europe. The opposite scenario of a depreciating dollar is more likely to be met with joint alarm and a certain willingness to cooperate. That was in evidence in 1978 when the Carter Administration cooperated with Europe in interventions and some reorientation of monetary policy. That occurred, however, at a very low level for the dollar. It is a major task for policy makers in both the United States and Europe to respond jointly the next time while the main exchange rates are closer to a longer-run sustainable level, hence avoiding a new long cycle of initially undervaluation and subsequently renewed overvaluation of the dollar."⁷³

Williamson ⁷⁴ has also made a proposal to introduce rules, although he later favoured managed exchange rates and in particular the establishment of target zones⁷⁵. He proposed the deliberate and formal coordination of monetary policy through an agreed set of rules governing domestic credit expansion (DCE) rather than through control of the stock of reserves, because world money supply rises only as a result of domestic credit expansion in another country. Thus, a uniform and consistent ruling DCE would permit international control of world monetary growth. The following advantages would accrue: a) Given the large margin for shippage in the reserves to money supply ratio, control could in fact be far more effective if sought directly by targeting DCE; b) This approach would not require the prior establishment of effective control over international reserves, which

seems to be a lost cause; c) A combination of DCE limits and effectively unlimited reserves for countries respecting those limits would offer the possibility of making the system invulnerable to confidence crises, thus removing the great doubt about the feasibility of pegged rate systems in an era of high capital mobility.

The similarity of Williamson's and McKinnon's proposals are obvious. The same criticism put forward against McKinnon's proposal is valid also for Williamson.

3) Restrictions of capital flows:

Such proposals were discussed in the Community during 1981-84 and have found some official support, as for example by the then French Minister, Jacques Delors. Due to the continuing recession it was felt that the EEC countries should try to cut European interest rates from the increasing US interest rates in order to promote recovery. In this case exchange rate depreciation and inflation would follow. In order to prevent this, exchange rate controls should be imposed to hinder capital outflows from the Community while allowing the intra-Community capital flows to continue.

Serious criticisms can be levied against this measure.

a) The first problem concerns efficiency and effectiveness. Exchange rate controls cannot be imposed on non-residents, yet non-resident capital is considered more mobile and interest-sensitive than domestic capital. So, in this case, capital outflows would take place exercising pressures on EEC currencies despite the existence of exchange controls. The question then arises of the size of the non-residents holdings of EEC denominated assets relative to those of residents. If these are not so large, then the imposition of exchange controls might work. Even so, other serious disadvantages would remain.

- b) Exchange controls tend to disturb efficiency, particularly if they are maintained for long. There is in fact no strong presumption that the costs in terms of resource misallocation from impending the international flows of capital would be less serious than those arising from restrictions in the flows of commodities.
- c) A constant danger of escalation and retaliation with damaging spillovers for other international transactions would exist unless uniform restrictions or taxes could be negotiated and accepted by all parties, a totally unlikely possibility for the time being.
- d) There is no reliable method of separating in advance productive from non-productive capital flows, so as to allow the productive ones and restrict purely speculative capital flows.
- e) Any tax on capital flows would make it more difficult for a country to finance a current account imbalance because it would have to raise interest rates enough not only to create a favorable interest rate differential, but also to offset the cost of the tax.
- f) Experience with controls during the early 70s shows that even tough control programs often failed to stem private capital flows. The subsequent development of offshore banking markets makes their efficacy today appear even less likely.

The strong support of these counter-arguments by countries like Germany, the UK, the Netherlands and Luxemburg did not allow an introduction of common policy of exchange controls, and made countries like France and Italy which were favorable to the introduction of such measures decide against the unilateral imposition of controls to restrict capital outflows from their own currencies to the dollar. It was appreciated that unilateral controls would be hampered because they could have been circumvented partly through the intra-Community capital mobility for the kinds of capital for which the free circulation of capital applies and partly through illegal means.

4) Stable domestic macroeconomic policies

According to this view, greater stability of exchange rates should not be sought in any form of managed exchange rates but primarily in a system of floating rates with more stable domestic macroeconomic policies and in better coordination of these across countries. Floating exchange rates would show less variability if medium -and long-run private sector expectations about exchange rates were firmer. The case for stressing the implementation of stable, credible, and balanced policies is simply that, quite apart from their favourable impact on domestic economic objectives, these policies are the single most important element in stabilising expectations about exchange rates. Economic agents will have little basis upon which to form a view of the future exchange rates if they cannot estimate the medium-term outlook of basic economic policy and if they lose confidence that the main economic objectives can be reconciled across countries without either dramatic shifts in policy mixes and/or in exchange rates. In such circumstances, speculative "bubbles" and "bandwagon" effects become more prevalent because there are no natural bounds for the expectations of speculators. On the other hand, where countries have a history of stable policy behaviour, thus allowing credible forecasts of policy intentions, neither minor shocks nor short-term deviations of policies from targets are likely to be translated into large exchange rate movements, because longer term expectations about them will not be greatly affected.

Better conduct is widely recognised as improving the functioning of any exchange rate regime so that there is no case against better macroeconomic policies. The case for better coordination and convergence of macroeconomic policy both within the Community and externally towards the dollar is supported very strongly in Germany both in academic and official circles in particular by the Bundesbank
76 .

According to this policy option the exchange rate is a result of coordination and convergence, not a policy objective. Although few would deny the need for better coordination, and increased convergence⁷⁷ and the advantages accruing from it, there are doubts

about its practical feasibility in the form suggested. In order to bring about coordination and convergence a consensus on policy objectives and priorities as well as of means and economic policy measures is necessary. Furthermore, appropriate indicators to measure convergence must be agreed upon. Differences among countries concerning the order of objectives coupled with different economic structures make the coordination of economic policies in this form difficult. The political consensus for this option does not seem to be forthcoming. This is what makes a strong case for some sort of managed exchange rates. Exchange rates are an appropriate indicator and at the same time a policy aim to be followed on which to orient and measure the convergence of economic policies. Viewed thus, managed exchanged rates and coordination are no longer mutually exclusive, but mutually reinforcing and complementary.

5) Adjustable exchange rates with narrow margins:

This option has similarities to the fixed exchange rates but introduces some measure of flexibility through its margins.

Critics of fixed exchange rates argue that adjustable exchange rates would also not be sufficient to withstand the pressures that destroyed the Bretton Woods System. Large and suddenly changing interest rate differentials would still arise because of the failure to harmonize monetary and fiscal policies across countries. Rumours of imminent parity changes due to a whole host of circumstances would still circulate. The resources of central banks could still prove to be inadequate to cope with the larger resources of private speculators. Because liberalization measures and technological advances have combined to render capital much more mobile than during the 50s and 60s, if such an option could work at all, it would need both wider margins and some mechanism to ensure prompt adjustment of exchange rates.

Defenders of this policy scheme maintain that the intractability of the above problems is exaggerated and that such a system is feasible given sufficient political commitment, generous supporting mechanisms

for riding out balance of payments difficulties, active exchange market intervention, a presumptive (or a system of) indicator for adjustment and the acceptance for occasional, and sometimes even large, realignments of the central rates whenever needed. It is clear that this scheme has strong affinity with the actual mechanisms of the European Monetary System.

6) Establishment of target zones for exchange rates:

Criticism against this option rests on the following:

a) Given stable macroeconomic policies, there is no need for an additional anchor for exchange rate expectations; b) The best guide for domestic monetary policy is price stability while the exchange rate can often give false signals; c) Negotiation of forecast rates or zones and the necessary changes in them would be subject to centralised management delays that were a characteristic of the Bretton Woods system; d) Target zones would only have credibility if they were backed by broad coordination of macroeconomic policy. If such coordination could be achieved, no change from the present system of flexible exchange rates would be necessary.

Proponents of target zones support this scheme on the following grounds:

1. In their absence it is too difficult for market participants to have correct expectations about future exchange rates. Even where policies are stable there are just too many factors affecting an exchange rate to make a firm forecast about its value over a period of six months to one year ahead.

2. Even when stable economic policies do exist, there is a need for exchange rate management because stable economic policies need not always be convergent so that they might be misinterpreted by the market participants giving rise to incorrect speculative capital flows and causing long-term misalignments. Misalignments can be caused by misguided intervention, market inefficiency and macroeconomic policy. To the extent that market inefficiency is the source of the problem,

exchange rate management need not involve any systematic sacrifice of internal policy objectives, but it will require a willingness to direct policy toward exchange rate management rather than let the exchange rate be the residual. In situations where macroeconomic policy is the cause of misalignment, governments may face a real choice between the monetary policies appropriate for internal versus external objectives. If the option of target zones is taken, a sufficiently comprehensive set of policy instruments is needed to ensure that the main internal objectives can still be attained. The control of inflation remains the most important among them. But the attempt to achieve domestic and external objectives at the same time will create pressures for a balanced policy mix, which is likely to be beneficial both to a country's partners and in the long-run, to itself.

3. Price stability certainly remains an important objective, but exchange rate variability can influence it negatively, so that greater exchange rate stability achieved through target zones reinforces internal stability. Control of inflation and exchange rate stability are not exclusive but complementary objectives.

4. The authorities would be under some pressure either to keep actual rates within the target zone or to explain departures from it, so that the speed of external adjustment would be increased. Without target zones, authorities have insufficient incentives for adjustment, since they can always equate the "right" rate with the market rate. Moreover, the combination of target zones with indicators for presumptive action on the part of the authorities increases the speed of adjustment. These indicators could function as warning signals of the necessity for adjustment or intervention.

5. Target zones do need some coordination of economic policies to be successful, but at the same time they are an instrument to facilitate such coordination which might not otherwise be forthcoming.

Williamson⁷⁸ has put forward a specific proposal for the introduction of target zones whose main elements are the following⁷⁹:

- (1) Soft margins, rather than a commitment to prevent the rate from straying outside the target zone.
- (2) A zone perhaps 20 percent wide, outside of which rates would be considered "clearly wrong".
- (3) A crawling zone, with the crawl reflecting both differential inflation and any need for balance of payments adjustment.
- (4) Publication of the target zone.
- (5) The partial direction of monetary policy (perhaps in the form of intervention that is not fully sterilized) to discourage the exchange rate from straying outside its target zone.

B. Specific proposals for the Community

The need for a common policy of the Community has been perceived by the EMS creators, and it is the main reason why the EMS agreement provided for "co-ordination of exchange rate policies vis-à-vis third countries and, as far as possible, a concertation with the money authorities of these countries". This need is still considered to be essential both in official cycles -like the European Parliament⁸⁰ and the Commission- and academic ones. Still, no such policy has yet been introduced, due to the inability of the Council of Ministers to agree on specific measures to be adopted and to the absence of a European Monetary Authority responsible for the Community's monetary policy.

Among others, the following proposals have been put forward concerning the Community's relations with the USA and ways to influence the international monetary order.

Van Ypersele⁸¹ has suggested as a feasible step toward a better coordination of policies with regard to the dollar, the replacement of

part or all of the existing bilateral swap-agreements by a FECOM Federal Reserve swap credit line. This credit line could be used in such a way as to stabilize the exchange market within the EMS instead of creating tensions, to the extent that the currency used by the FED for reimbursing the FECOM need not be the same as that borrowed for intervention⁸². Furthermore, he suggests a more active dollar policy involving a common view of the FED and the FECOM on a target zone for the dollar. US and EC authorities would then have to take whatever measures necessary for staying within this target zone. This zone could be modified at regular intervals and would in no way imply the automatic defense of a fixed dollar exchange rate.

Baer⁸³ has suggested that the country with the lowest inflation rate should be assigned the "nth currency status". This country should be allowed to follow an independent monetary policy geared towards its price objective. All other EMS countries would then have just to adhere to an exchange rate target, as given for example by the EMS central rates (their bilateral parity vis-à-vis the nth currency) which would serve as a guiding principle for the short term orientation of their monetary policies and for exchange market interventions.

The nth currency, due to its relatively more favourable price performance, would normally be expected to be in a position of strength vis-à-vis its EMS partner currencies. If intervention margins are reached in such a situation, the division of labour in defending bilateral parities would imply "sterilised" interventions⁸⁴ on the part of the nth currency, while in other countries, should "sterilised" interventions prove inadequate to ease exchange rate pressures, the contractionary effect of non-sterilised interventions on the monetary base should be allowed to take effect. If these measures, possibly reinforced by an additional tightening of monetary policies, are insufficient or are considered to be unacceptable to countries with weak currencies, a realignment of EMS parities will be unavoidable. Conversely, if the nth currency is in a weak position vis-à-vis its EMS partners, greater monetary restraint may have to be exercised in this country until intra-EMS exchange trends again tend to follow more closely the movements in inflation differentials.

Baer thus suggests an institutionalisation of the policy that has been more or less followed up until now, with the DM having the nth currency status inside the EMS. This approach, although very pragmatic, has the following disadvantages. Firstly, an institutionalisation of the DM's hegemony might be resented by the other EMS countries, even when a de facto hegemony has proved to be acceptable. Secondly, it is a solution of necessity which can certainly be improved upon, because it does not go far enough and does not solve the strains that this hegemony puts on the EM.

Reeh⁸⁵ stresses the importance of the Community showing responsiveness to the USA, discouraging a reputation for being easily exploitable and teaching reciprocity in general. He proposes action by the EEC that would lead to an expansion of the US monetary base, even if the US authorities are unwilling to do so. This monetary expansion in the USA would presumably lower US interest rates, real interest differentials, and also impose downward pressure on the dollar's exchange rate. This could be achieved if European Central Banks sold their US securities on a really large scale to the FED and bought their own and also other European currencies in quotas agreed upon in advance. The FED can, of course, try to sterilise almost any large scale intervention of European Central Banks by immediately selling these US securities to the public. Hence either the US interest rate will come down, or the private sector will have to finance the US deficit to a larger extent. In the Community the domestic monetary base will be decreasing, this being an unintended development, or the interest rates will have to go up if the Central Banks use the currency to buy European securities to replace the previously held US securities. In order to offset the upward pressure on European interest rates and the contractionary effect of the decreasing European monetary base, the European Central Banks should consider countervailing actions, like lowering the discount rate or/and the reserve holding requirements.

While this proposal could have the required effect in the short run, it has the disadvantage of being antagonistic to the US, leaving open the possibility of retaliation in the future. It is an ad hoc, and not a long term solution which could bring about more equilibrated and equitable relations between the US and the Community on a durable basis.

In 1982 the EC Commission⁸⁶ also submitted some proposals:

- (i) **to organize regular consultation, on monetary problems of common interest, between the Community bodies and the US and Japanese authorities.** These consultations should also take place at the request of one of the parties when a situation out of line with underlying economic data develops on the foreign exchange market, or when interest rate differentials cause excessive and undesirable strains on the Community's money and financial markets;
- (ii) to set up meaningful cooperation on matters of exchange rates and interest rates with the United States and Japan, by inviting the US authorities to rescind their decision not to intervene on the foreign exchange market, and by starting discussions on how to establish a **single credit line between the Federal Reserve Bank and the FECOM;**
- (iii) to improve the **coordination of Community central banks' intervention in third currencies;**
- (iv) to organize the **use of Community currencies** (with access to the very short-term financing) for **intra-marginal intervention**, when a currency crosses its divergence threshold or when its bilateral rate *vis-à-vis* another participating currency deviates by more than 85% of the authorized margin. However, the central banks issuing the currencies used for intervention would have the right to suspend the continued use of their currencies if this obstructed the conduct of their domestic monetary policy;
- (v) to open the EMS to third countries, by authorizing central banks of countries which seek to have special ties with the European Community to acquire ECU, either from the participating central banks or by bringing reserves to the FECOM. The Bremen European Council had already provided in 1978 that 'non-member countries with particularly strong economic and financial ties with the Community may become associate members of the system'.

These proposals were not adopted by the Council, and the Commission therefore made more modest proposals in 1984⁸⁷ under which a) The ECU

should be granted foreign currency status in all Member States and b) central banks of third countries could acquire, hold and use ECU's within the framework of agreements of "third holders" concluded with FECOM.

V. A PROPOSAL FOR A LONG-RUN EC-US COOPERATION!

Our proposal is a long-run scheme for EC-US cooperation in the field of monetary relations that could at the same time lead to the development of a bipolar international monetary order. Being a long-run proposal, interim solutions, such as those mentioned above, are not excluded, and some elements of previous proposals are also incorporated.

Such an improved international monetary system would offer the following advantages:

- a) It would enhance predictability by allowing the policy making authorities in each country to have a better understanding of the likely policy reactions in other countries. Predictability would again have a dampening influence on speculative shocks due to shifts of portfolio holdings.
- b) Through the introduction of a system of objective indicators, the system should be able to establish clear rules for "good citizenship" in monetary and fiscal management and thus reduce the possibilities for "beggar thy neighbour" behaviour.
- c) A system of relatively equal countries (or group of countries) in economic and monetary strength would be more liable to be a system where the rules are observed than one in which there exists one hegemonic power. In the case of near equality, the country (or the politicians) that breaks the rules faces greater costs due to the reactions of the other countries, than in the case of a hegemonic country, which can to a greater or lesser extent ignore the reactions of the "dependent" countries.

We believe that equality has a built-in incentive for good (or better) international behaviour.

Under this aspect, the task of the EC would be to transform the actual asymmetric situation in international economic relations to a more symmetric one. This could be done if the Member States promote the role of the ECU and go along closer monetary and fiscal cooperation. The ideal

would be reached at the stage when the Community enters the institutional phase of the EMS with the introduction of a European Monetary Authority responsible for the Community's monetary policy coordination and the external side of the EMS⁸⁸.

- d) According to Sachs⁸⁹ any reforms of the international monetary system should also help to accommodate the major exogenous (non-policy) shocks that the system is likely to experience. This means that any future system should be able to accommodate uncertainty better than the present one.

It is very difficult to conceive a system so that it will be able to accommodate future unknown exogenous shocks. In this respect it seems that a system that has developed greater credibility and predictability during the past should also be in a better position to accommodate uncertainty. A system with built-in credibility should be in a better position to face unforeseen external shocks. A system of managed exchange rates as we propose should achieve such a credibility. The experience of the EMS seems to reinforce this view. Accommodation of the EMS Member States to the second oil shock of 1979 was in general more consistent than to the first, although the EMS had existed only a few months when the second oil shock occurred.

Given the US administration's past unwillingness to envisage cooperative solutions in the field of monetary policy, the following questions have to be answered:

1. How can the Community transform this US reluctance into a more cooperative attitude?
 2. Would cooperation be advantageous to both the EC and the USA, as well as to third countries?
 3. What form could such cooperation take?
-
1. The transformation of the attitude of the US towards cooperation depends upon the strengthening of the Community in the monetary field. This is again tantamount to a strengthening of the EMS and the development of the ECU into a true Community parallel currency⁹⁰. Developing the oligopoly model of the second part of this study, the Community, by developing the ECU into a true parallel currency would no longer be seen on the world

currency market as a number of separate dependent oligopolists, but as one oligopolist of more or less the same size as the USA⁹¹. The ECU would thus substitute the currencies of the Member States, while the Community as such would substitute the Member States. We do not intend to develop here the conditions under which the ECU could assume this function, since this has already been done both in academic research and in the Commission's and the European Parliament's proposals. We will instead focus on the international currency market and the ECUs position in it.

International demand for a currency depends on various factors:

- a) The economic size of the country, as measured by the GNP and its share of world trade;
- b) The return of assets denominated in the currency, as measured for example by real interest rate differentials;
- c) The expected inflation rate of this currency which determines its expected future value, i.e. appreciation or devaluation;
- d) The general "quality"⁹² of the currency, which encompasses other influences that are difficult to measure as in general future expectations about the development of the exchange rate of the currency, depending on past performance, risk, variability, evaluation of political stability, credibility and predicability, the need for portfolio diversification etc.

The international currency demand function can be written as:

$$M_i^d = f(\text{GNP}_i, \text{WT}_i, r_i, \pi_i, q_i)$$

with

- M_i^d = Money demand
- GNP_i = Gross National Product
- WT_i = World trade share
- r_i = interest rate on assets
- π_i = expected inflation
- q_i = quality, all of currency i , with

$$\frac{\delta M_i^d}{\delta \text{GNP}_i} > 0, \quad \frac{\delta M_i^d}{\delta \text{WT}_i} > 0, \quad \frac{\delta M_i^d}{\delta r_i} > 0, \quad \frac{\delta M_i^d}{\delta \pi_i} < 0, \quad \frac{\delta M_i^d}{\delta q_i} > 0$$

The currencies being competitors and substitutes on the international market, it follows that if the interest rate, the GNP, the world trade share and the quality of another currency increases, then the demand for currency *i* will decrease, and conversely, if the inflation expectation for another currency increases then demand for *i* will also increase, and vice versa.

In the actual situation no Community country alone can be compared in GNP and world trade with the USA. Real interest rates are also higher in the USA. Inflation expectations are a little higher in the USA than in the most stable Community countries like Germany and the Netherlands, but lower than in most of the others, while the quality of the DM could be equivalent to that of the dollar, both being higher than the rest of the Community's currencies. Taking all elements together, the demand for the dollar is much higher than for any of the Community's currencies, which gives the USA its actual position as the independent oligopolist.

If the ECU develops into a true European parallel currency, then demand for it would be a function of the Community's GNP and share of world trade that are, taken together, comparable to that of the USA. The interest rate of ECU assets might still be somewhat lower, depending on US and EC economic policy, but on the other hand inflation expectations for the ECU could be comparable, or even better than those for the dollar, depending again on economic and especially monetary policies to be followed by the FED and the European Monetary Authority. The quality of the ECU could become equal or even stronger than the dollar, since the ECU could offer greater predicability, lower variability and so lower risk and provide better hedging possibilities. Confidence would be built into a parallel ECU. The result would be that the ECU money demand function would be analogous to that of the dollar. The ECU would become a much closer substitute for the dollar than any actual currency is at present. But this would mean that the Community would no longer appear as a number of small dependent oligopolists, but as an equal oligopolist on the world currency market. From a US domination on the world currency market, a

position of relative equality and interdependence of the EC and the US would be achieved. The external constraint would be greater for the USA and less for the Community than at present.

In a situation of interdependence and relative equality a cooperative solution is easier to achieve than in a situation of dominance where the dominant power has a strong incentive to pursue independent actions, which may be to the detriment of the dependent powers. Thus we see the strengthening of the ECU and the EMS as a way to bring about greater cooperation in the EC-USA monetary relations. The effects of such a cooperation must be next examined.

2. First, cooperation leading to a system of managed exchange rates would result in a reduction of the costs arising out of the high actual variability of the exchange rates. This would be an important advantage for all concerned.

Second, cooperation by achieving more "correct" exchange rates, however these are measured, would increase the competitiveness of the US economy and lower protectionist pressures in the USA. Such situations could be more easily avoided in future under a system of cooperation than under floating.

Third, cooperation helps the following of more prudent domestic economic policies, but also makes any necessary adjustment easier, since the burden of adjustment can be shared to a certain extent between the cooperating countries, while under floating it must be assumed entirely by the adjusting country alone. Furthermore, there is no incompatibility between an exchange rate target that would exist under managed exchange rates and a domestic monetary aggregate target. The existence of incompatibility would be a serious argument against managed exchange rates for countries that put a strong emphasis on domestic stability. While in the short-run there may be some conflict between an exchange rate objective and a monetary or credit aggregate target rigidly pursued, in the medium to long-run the two are more likely to be mutually supportive, provided that the domestic objective is selected carefully and under consideration of the external constraint. Experience from the EMS countries support this,

while domestic targets have proven more difficult to attain in the USA and the UK, despite the high degree of flexibility for dollar and sterling exchange rates⁹³.

Fourth, cooperation, by lowering misalignment cost and exercising positive influence on growth and employment would increase welfare. In an interdependent world, policy makers in one country must condition their actions according to the policies pursued in other countries if their policy making is rational. It is clear then, that policy making has game aspects⁹⁴. It is a well-known result of such policy games that in the absence of direct cooperation or side-payments the outcome of such games are socially inefficient. There exist alternative policies that would, if implemented, benefit all parties. The reason why such outcomes are not automatically forthcoming is that policy makers generally have an incentive to cheat in these Pareto optimal outcomes, and politically sovereign policy makers seem to have difficulty achieving them. But this means that if coordination is achieved, and if a way to control this coordination is found so as to avoid cheating, then the outcome of coordination is better than the outcome of non-coordination in the sense of increasing welfare for all parties concerned⁹⁵.

Fifth, cooperation leading to the establishment of a bipolar currency area, with the ECU developing into a reserve currency complementing the dollar (and later possibly to a three polar one with the inclusion of the yen) could bring about greater international stability. The argument that a world with several currency areas is less stable than a world with one currency area is that both private parties and official institutions might shift funds between the financial centres in the two currency areas when interest rate differentials are large relative to the anticipated changes in the exchange rates. Thus, authorities in the dominant financial centre in one of the currency areas might feel constrained about following a more contractive or a more expansive monetary policy because of the impacts on losing or attracting reserves from the dominant financial centre in the other currency area.

This argument is misplaced in the actual situation, where the high international mobility of capital poses this problem for monetary authorities. The problem exists irrespective of the existence of a one

currency hegemony as at present or a possible future bipolar currency area. The question is if under a FED-European Monetary Authority cooperation this situation can be better faced in the future than actually in a situation characterised by lack of cooperation of the FED with the European Central Banks, mainly the Bundesbank. Moreover, the historical data do not suggest that the development of a bipolar currency area system will lead to a reduction in monetary stability internationally⁹⁶.

3. We have argued that the strengthening of the EMS and the development of the ECU into a true parallel currency would enhance the ECU's attractiveness to third users and holders so that the ECU could develop into a competing reserve currency to the dollar. The possibility of coordination is strengthened and so also the development of a bipolar world currency system. This again would present advantages over the present system for all concerned.

We propose the following form of managed exchange rates in a bipolar currency system:

- a) A target zone for the dollar-ECU exchange rate, consisting of a fixed central dollar-ECU exchange rate and a margin of fluctuations around the central rate. The analogy to the exchange rate mechanism of the EMS is obvious. The first problem to be solved here would be to determine an approximately correct exchange rate (or in the terminology of Williamson, near a fundamental equilibrium).

In the long run this may be easier than it appears, because at the time of the introduction of the system, the dollar-ECU exchange rate will have reached a relatively correct exchange rate, which will have been brought about by the increased competition of the ECU and more evenly balanced capital flows towards both currencies. But even if the first setting of the central exchange rate proves not to be correct, the possibility of realignment according to some objective criteria would remain open. Secondly, the margin of fluctuations around the central rate must be decided upon. In the beginning this margin should be relatively wide, perhaps +10%, in order to safeguard the flexibility of the system. Later, if the system proves to be working well, the margin can be reduced accordingly.

The choice of the ECU as a counterpart of the dollar is obvious if the ECU develops into a center of an ECU zone as examined above. This implies that the ECU would take the place of the DM as the nth currency inside the EMS and that the bilateral exchange rates of the dollar to the other EMS currencies will be determined through their bilateral ECU exchange rates. In this case the tensions which have appeared due to the fact that the DM had the nth currency status inside the EMS would be much diminished or even disappear.

- b) Intervention: The FED and the European Monetary Authority (EMA) would have to intervene in order to keep fluctuations inside the margins.
- c) Swaps: A swap agreement in the lines suggested by Ypersele could complement and facilitate the interventions of the FED and the European Monetary Authority.
- d) A credit mechanism could be established to facilitate adjustment when long run disequilibria appear. This mechanism would facilitate adjustments and also promote the willingness to adjust, but is not fundamental for the implementation of the system.
- e) A system of indicators would complement the system. The indicators should be separated in monetary and real indicators. Monetary indicators would give advance warning and the presumption to act (i.e. intervene in the exchange market) in situations of purely monetary disturbances, like waves of speculation, disorderly conditions etc. Real indicators on the other hand would indicate when there are disequilibria in real parameters which necessitate realignments at the central rates and an adjustment of economic policy.

In situations where the monetary indicators give warning signals but the real indicators do not, disturbances are due to disorderly conditions, and intervention by the FED and the EMA would be sufficient to cope with them. In situations where the real indicators give warning signals, or both the monetary and the real do so, interventions would not be sufficient. A realignment of the central rate and an adjustment of economic policy would

be necessary here, which should be brought about after consultations that would represent the advantage of some measure of sharing of the burden of adjustment.

The viability of the system depends on a number of conditions:

- i) Credibility of the target zone. The credibility of an exchange rate commitment like the above would obviously be greatly increased by the FED's and the EMA's mutual obligation to intervene and would be even more strengthened if a credit mechanism were also established. Awareness among potential speculators of the fact that the dollar-ECU exchange rate cannot easily be affected by short term pressures in the exchange markets bolsters the system and would result in a reduction of purely speculative capital flows. The strong commitment to a certain target zone and to interventions to safeguard the target zone would make actual intervention smaller and less frequent, since it is in itself a strong deterrent to speculation.

- ii) Moral hazard. A problem with cooperative solutions is that policy makers have an incentive to cheat if they believe that the other policy makers will not do so, because in this way they can improve upon the outcome. If for example the US and the EC decide to pursue under cooperation a more expansive policy than under non-cooperation (such an expansive policy improving the result for both compared to the con-cooperative outcome), the US (and alternatively also the EC) has an incentive to cheat on the agreement and run a less expansionary policy. This is so because the more expansionary policy of the EC would increase US employment, making it optimal for the US to economize to some extent on inflation. If the US did not cheat and actually carried out the agreed policy, the outcome would appear too inflationary to a public that did not fully understand the nature of the agreement and discounted the possibility of foreign repercussions in response to a tighter US monetary policy. The political pressure to cheat could well be extensive.

The moral hazard implied by the cooperative solution is compounded by a certain difficulty in defining and verifying the outcome of cooperative agreements. The various OECD countries in general have different definitions for monetary aggregates and different procedures for implementing monetary policy. Both could be altered in subtle ways allowing policy-makers to violate the spirit, without violating the letter of their commitments. Further, the effect of a monetary policy that is well defined in terms of implementation procedures and aggregates can always be altered by changing the regulatory environment in financial markets.

The moral hazard problem can be countered by:

- Using indicators prepared and agreed upon in common, in order to measure economic policy effects. Technical solutions can certainly be found for this. These indicators will then be used also to control the implementation of economic policy measures, exposing policy-makers who diverge from the agreement. Given the possibility of a control over cheating, the moral hazard problem has a solution, since the diverging policy-maker would face the threat of retaliation which would result in a worse outcome than the cooperative one.

iii) Effectiveness of intervention: The viability of the target zone depends on the effectiveness of intervention, i.e. if intervention enforces credibility, expectations are not greatly influenced by very short term developments, and as a rule private agents appear willing to take the intervention prices signalled by the monetary authorities as a benchmark for their operations. The question is whether interventions by central banks, in this case by the FED and the EMA, can exert a stabilizing influence on the markets, as long as they do not try to go against fundamental market trends. Some doubts have been expressed concerning this, especially by members of the US administration who have justified the present administration's unwillingness to intervene because intervention has been powerless to alter the market's assessment of underlying policies and performance, and thus could have no lasting impact on exchange rates⁹⁷.

It is clear that intervention cannot alter situations where the exchange rate reflects divergences in real variables. On the other hand, intervention can smooth out disorderly conditions due to speculation or other short term disturbances.

According to the Jurgensen report⁹⁸:

- a) Sterilised intervention has a much smaller impact on exchange rates than does unsterilised intervention.
- b) Sterilised intervention can have some short term impact on exchange rates and may therefore be effective in achieving some short-term exchange market objectives. This impact depends on the assumption of imperfect substitutability between assets denominated in different currencies. Empirical evidence supports this. Thus, sterilised intervention is an independent policy instrument if securities denominated in different currencies are not perfect substitutes. Since the effect of sterilised intervention depends on the relative amounts of outstanding government securities, there is a presumption that sterilised interventions would have to be carried out in large amounts if they were to have a significant impact on exchange rates⁹⁹.
- c) Sterilised intervention does not appear to have much long-run impact, and its effects are often swamped by those of other macroeconomic policies.
- d) Coordinated intervention is more effective than intervention by a single country.

However, even if sterilised intervention is not an independent policy instrument, it is a signaling device, so that, by conveying otherwise unavailable information about the future course of monetary policy it may have an indirect effect on the exchange rate.

Further, the central banks have superior information that is not available to private market participants since they control money supply and thus know what their future monetary policy, and its relationship to the behaviour of the exchange rate will be. Intervention by the central banks acts as an insurance for the public against the moral hazard that the government will not be consistent in following a policy previously announced. Central banks can purchase credibility by official intervention in the foreign exchange market¹⁰⁰.

Even on the assumption that private market participants behave rationally and make appropriate use of all information relevant to the determination of the economically correct exchange rate (which seems to underly the US reluctance to an intervention commitment), in situations of disorderly conditions that result from general uncertainties and misperceptions of the future course of government policy, the authorities have a unique and substantial advantage over the private market in possessing superior inside information. In this case, in the absence of intervention exchange rates would behave like an exogenous variable possibly giving rise to large swings in countries' external positions and to circles of inflation.

The conclusion is that intervention is an instrument that can be used to counter short-run disturbances. This and nothing more would be the task of interventions undertaken by the FED and the EMA in the framework of our proposal.

- v) Coordination of economic policies: As we have already pointed out, central rates could remain stable over longer periods only in the case of parallel development of real economic variables. This again presupposes coordination of economic policies, i.e. monetary but also fiscal policy. We have already discussed the advantages arising from cooperation through the coordination of economic policies. The following questions are still relevant:

- a) Is coordination likely to be achieved under present conditions?
We think that some degree of coordination is more likely to be achieved under present conditions than it ever was since the beginning of the 80s. The reasons are manifold: After the G-5 meeting, there is manifest increased political willingness to go some way in discussing and possibly implementing measures of economic coordination, even if they remain still ad hoc. But the commitment of the US administration to an exchange rate target can indicate a higher preparedness to discuss also more permanent ways of coordination, while this willingness existed already on the European side and seems to be forthcoming also from the Japanese side.

The prevailing economic situation makes also the coordination of economic policies easier, because constraints are easing. Growth rates between the US and the EC are more closely related in 1986 than before, oil prices are falling, inflation pressure is low and while the US budget deficit is still increasing, it might start decreasing in the next year, while budget deficits have been drastically reduced in most EC Member States.

An agreement on managed exchange rates could thus make possible a joint reduction of interest rates, as Dornbusch has proposed¹⁰¹. This would induce faster growth at constant exchange rates (i.e. without competitive depreciation) without significant and unacceptable inflation risk. The inflation risk is also low, due to wages becoming less sticky than before. Wage aspirations have become more moderate both in the US and Europe, not only due to the high unemployment but also due to changes in the industrial structure. Trade unions are the strongest in traditional sectors of the industry (like textiles, steel, shipbuilding and automobile) that have moved increasingly from the old industrialised to the new industrial countries. Trade unions are weaker in new industries that become more important in the old industrial countries. This change in the industrial structure means that on the whole, trade union power has fallen¹⁰². In the

absence of oil induced, wage push and depreciation induced inflationary pressure, some degree of coordinated reflation appears possible to be implemented.

b) Is coordination of economic policy more likely in the existence of managed exchange rates?

The answer is positive, because commitment to an exchange rate target brings in focus the attention of national policy-makers to the external side of the economy. This again makes coordination more likely. The likelihood of achieving some degree of coordination increases the more comprehensive the agreement on managed exchange rates is, i.e. the more elaborate the supporting mechanisms agreed upon, like those proposed here. The experience of the EMS also supports this conclusion.

c) In the absence of economic coordination are managed exchange rates still attainable and an objective worth pursuing?

In the absence of coordination, economic fundamentals will presumably diverge more, necessitating more often realignments of central rates. Even in this case, managed exchange rates offer advantages over the present situation in the degree that they achieve a reduction of misalignments. Thus, without coordination, managed exchange rates are still worthwhile, although their achievement would be enhanced with economic coordination. The objective of reducing misalignments would still be achieved on condition that realignments of central rates would not become so often and not in a magnitude that would destroy the credibility of the system.

A N N E X

ANNEX

A proposal for a Tripolar Exchange Rate Agreement among the EC, US and Japan

We propose an exchange rate agreement for the EC, US and Japan, according to which, exchange rates will be managed in relation to reference rates (central rates) that crawl on the basis of the relative performance of countries (areas) in terms of their effective wholesale price indexes and persistent deviation of their balances from specified targets. Our proposal should be seen as an example and a first approach towards solving the problem of coordination of intervention and not as a definite solution in itself.

In addition, this Annex deals with the construction of a divergence indicator between the ECU, the US dollar and the Yen, which can show daily deviations from the average of the above currencies. In the absence of real disturbances (in this proposal persistent disequilibria in the basic balances and/or changes in competitiveness and trade), certain signals of the divergence indicator will be considered as a warning and a signal to intervene in the exchange market in order to keep fluctuations inside the margins.

Our proposal for a Tripolar Exchange Rate Agreement between the EC, US and Japan can also be modified as a bipolar Exchange Rate Agreement between the US and the EC. It can also include other homogenous countries or areas. The above proposal for exchange rate realignments and intervention may be completed by a swap agreement and a credit mechanism which can increase the credibility, and consequently the viability, of the whole Exchange Rate Agreement, but this is not covered by this Annex. The purpose of this Annex is to outline in more details the proposal for an exchange rate agreement between the EC, US and Japan. The role of intervention would be to smooth out disorderly conditions due to speculation or other short term monetary disturbances. If, on the other hand, disturbances are due to long term variables, such as differences in competitiveness, inflation, growth rates etc then the central rates should be realigned, preferably after consultation between the countries (or areas) concerned.

The EC, US and Japan will define a reference rate for the ECU, the US Dollar and the Yen in terms of an effective exchange rate which will be expressed in a common unit of account for the purpose of standard measurement.

This common unit of account, which may be called "International Unit of Account" (IUA), will be defined in terms of the following fixed quantities of US Dollars, ECU and Yen. See Table 16.

Table 16

Participating currencies	Currencies Amounts	Currencies weights of an IUA. 16 July 1984	Value of an IUA in each currency Central Rates. 16 July 1984
US Dollar	0.362	0.35	1.02661
ECU	0.687	0.53	1.30612
Yen	30.238	0.12	249.07708

The method which has been used to estimate currency amounts in an IUA, the currency weights and the value of an IUA in each currency on 16 July 1984 is described in the Technical Annex. The date 16 July 1984 has been chosen arbitrarily.

The FED, the EMA and the Bank of Japan are to set margins around the above reference rates (Central Rates). Initially this margin should be relatively wide, +10% and -10%, in order to safeguard the flexibility of the system. As already mentioned in the text, if the system works well, the margins will be reduced accordingly. Table 17 shows the IUA-related central rates and the intervention limits -a band of 20%- as well as the bilateral rates and the 20% intervention limits among the bilateral central rates.

Table 17

Related and Bilateral Central Rates and Intervention Limits of a Tripolar Exchange Rate System.

<u>Related central Rates and Intervention Limits</u>				
<u>CURRENCY</u>		<u>US DOLLAR</u>	<u>ECU</u>	<u>YEN</u>
	+ 10%	1.12927	1.43673	273.98500
1 IUA	Related Central Rates	1.02661	1.30612	249.07708
	- 10%	0.92394	1.17551	224.16900
<u>Bilateral Central Rates and Intervention Limits</u>				
<u>CURRENCY</u>		<u>US DOLLAR</u>	<u>ECU</u>	<u>YEN</u>
	+ 10%	-	139.950	26683.300
100 US dollars	Bilateral Central Rates	100	127.227	24262.093
	- 10%	-	114.504	21835.900
	+ 10 %	864.600	-	20977.000
100 ECU	Bilateral Central Rates	758.999	100	19069.999
	- 10%	707.404	-	17163.000
	+10%	0.453382	0.57681	-
100 Yen	Bilateral Central Rates	0.412165	0.52438	100
	- 10%	0.370949	0.47194	-

A divergence indicator (D I) between the US dollar, the ECU and the Yen will make it possible to trace the movements in the exchange rates of the above currencies against the average movement and thereby to identify any currency deviating from the average. Exactly as happens in the EMS, the monetary authority of a diverging currency which crosses its divergence threshold should take action.

For the calculation of such a divergence indicator which can measure the degree of movement of a specific currency - in this proposal the US dollar, the ECU and the Yen against a maximum divergence spread (MDS), we need first to calculate the premium (P) or the Discount (D) shown by the market rate of the IUA in terms of each one of the above currencies against their IUA related central rates, and second, to compare this result with the corresponding MDS for each currency.

The MDS is the maximum percentage by which the market rate of the IUA in terms of a specific currency in this basket can appreciate or depreciate against the IUA related central rates of that currency, where the latter has reached its margins of fluctuations of $\pm 10\%$ against all the other currencies in the IUA basket.

For the estimation of the MDS of each currency, the following formula has been used:

$$\begin{aligned} \text{MDS}_{\$} &= \pm 10\% \times (1 - W_{\$}) \\ \text{MDS}_{\text{ECU}} &= \pm 10\% \times (1 - W_{\text{ECU}}) \\ \text{MDS}_{\text{Yen}} &= \pm 10\% \times (1 - W_{\text{Yen}}) \end{aligned}$$

Where W shows the weights of US dollar, ECU and the Yen. See Table Annex 1.

Table 18 below shows the MDS of the component currencies of an IUA:

<u>Table 18</u>	
Currency	MDS
US dollar	$\pm 6.50\%$
ECU	$\pm 4.70\%$
Yen	$\pm 8.80\%$

The MDS of each currency will be expressed in an index of 100. By assuming a divergence threshold of 50%, a currency will reach its divergence threshold when the DI gives a figure of 50.

We chose a threshold of 50% in order to ensure that a currency would always reach its divergence threshold before one of its bilateral limits. (In the EMS the threshold indicator is 75%. This has resulted in the divergence indicator of the EMS not always full-filling its task, i.e. the bilateral limits of two currencies can be reached without the divergence indicator giving the appropriate warning)¹⁰³. Calculation of the above DI for each currency participating in the IUA, is as follows:

$$P_{\$} \text{ or } D_{\$} = \frac{\text{IUA}^{\$} \text{ market rate} - \text{IUA}^{\$} \text{ central rate}}{\text{IUA}^{\$} \text{ central rate}} \times 100$$

$$P_{\text{ECU}} \text{ or } D_{\text{ECU}} = \frac{\text{IUA}^{\text{ECU}} \text{ market rate} - \text{IUA}^{\text{ECU}} \text{ central rate}}{\text{IUA}^{\text{ECU}} \text{ central rate}} \times 100$$

$$P_{\text{Yen}} \text{ or } D_{\text{Yen}} = \frac{\text{IUA}^{\text{Yen}} \text{ market rate} - \text{IUA}^{\text{Yen}} \text{ central rate}}{\text{IUA}^{\text{Yen}} \text{ central rate}} \times 100$$

$$DI_{\$} = \frac{P_{\$} \text{ or } D_{\$}}{\text{MDS}_{\$}} \times 100$$

$$DI_{\text{ECU}} = \frac{P_{\text{ECU}} \text{ or } D_{\text{ECU}}}{\text{MDS}_{\text{ECU}}} \times 100$$

$$DI_{\text{Yen}} = \frac{P_{\text{Yen}} \text{ or } D_{\text{Yen}}}{\text{MDS}_{\text{Yen}}} \times 100$$

Whenever one of the above currencies - \$, ECU, Yen - crosses its threshold limit - 50% of the MDS - the monetary authorities of the issuing country will be consulted to undertake diversified interventions in order to keep fluctuations inside the margins. These interventions will be based on the daily observations of the DI.

However, if the currency continues to deviate from its average, and it is accompanied by warning signals from a system of real indicators, the diversified intervention would not be sufficient and a realignment of the central rates and /or an adjustment of economic policy would be more appropriate to restore equilibrium in real economic parameters.

The use of objective indicators as a guide to changes in exchange rates has been a familiar subject among professional and academic economists, since the negotiations for the creation of the Bretton Woods system. As Trevor Underwood¹⁰⁴ has said, the various proposals for such an objective indicator have been distinguished by a) how mandatory, presumptive or permissive the

response is to be b) the size of the changes advocated in the exchange rates and c) whether or not interference is advocated in the existing right to make changes in exchange rates.

Two types of indicators have been involved: price indicators relating to levels or changes in spot, or forward or effective exchange rates, and quantity indicators which depend on the level or change in various measures of international reserves or the balance of payments.

In this proposal we will connect realignment of the central rates with price indicators assuming that in the medium-term, a suitable price index may be a significant variable in forecasting the balance of trade and competitiveness.

The above "price indicator" will be reinforced by an other indicator showing whether or not a target on the basic balance of each country or area has been exceeded. In particular, whenever a deficit or surplus in the basic balance of a country or area, vis-a-vis the other countries in the system exceeds the 0,5% of its GDP, the monetary authorities of that country or area, should change the central rate of its currency, in order to avoid future opposing flow imbalances.

Therefore, when the basic balance, which includes the current account, the longterm capital account and certain government capital transactions deviates persistently from its target, the monetary authorities will be asked to change the central rate in proportion to an effective PPP index, calculated for each participating currency, by dividing the issuing country's wholesale price index by a weighted average of the wholesale price indices of the other issuing countries in the system, the weights being the same as these entering into the formula of each country or area participating in the IUA. The decision to introduce a weighted PPP rule in our crawling system, relies on conclusions derived from the OPTICA Report (1976)¹⁰⁵, according to which wholesale price indices are the most appropriate price indices for measuring relative inflation and that conformity of exchange rate changes to inflation

differential is closer with a multilaterally measured PPP, that is by means of a double-weighted index of inflation trends in other countries and of effective exchange rates, rather than with a bilaterally-measured PPP. Calculation of the effective PPP index, P_i^t for the country or area, i , in time t , is based on the following formula:

$$\tilde{P}_i^t = \frac{P_i^t}{\sum_{n-i} w_{n-i} \cdot P_{n-i} / \sum_{n-i} w_{n-i}} \times 100$$

where P_i^t is the wholesale price index of the country i , at time t , and w are the weights which are given in table 16.

We will allow country's i related central rate to change at the end of each quarter in proportion to the change of a moving average of country's i effective PPP index, the calculation of which is given below:

$$\dot{P}_i^t = 0,4\dot{P}_i^t + 0,3\dot{P}_i^{t-1} + 0,2\dot{P}_i^{t-2} + 0,1\dot{P}_i^{t-3}$$

where $(\dot{\cdot})$ means % changes from the previous quarter.

Thus, country's i related central rate ($r_{i,IUA}$) changes, will follow the formula below:

$$\dot{r}_{i,IUA}^t = \dot{P}_i^t \quad \text{or}$$

$$\dot{r}_{i,IUA}^t = \dot{P}_i^t - \sum_{n-i} w_{n-i} \dot{P}_{n-i}^t$$

In a world with \$, ECU and Yen, the related central rates will follow the following crawling central rate system:

$$\dot{r}_{\$,IUA}^t = \dot{P}_{\$}^t - \left[0,53\dot{P}_{ECU}^t + 0,12\dot{P}_{Yen}^t \right]$$

$$\dot{r}_{ECU,IUA}^t = \dot{P}_{ECU}^t - \left[0,35\dot{P}_{\$}^t + 0,12\dot{P}_{Yen}^t \right]$$

$$\dot{r}_{Yen,IUA}^t = \dot{P}_{Yen}^t - \left[0,53\dot{P}_{ECU}^t + 0,35\dot{P}_{\$}^t \right]$$

Also, the bilateral central rates will change as follows:

$$\dot{r}_{\text{ECU},\$}^t = \dot{P}_{\text{ECU}}^t - \dot{P}_{\$}^t - \left[0,35\dot{P}_{\$}^t - 0,53\dot{P}_{\text{ECU}}^t \right]$$

$$\dot{r}_{\text{ECU},\text{Yen}}^t = \dot{P}_{\text{ECU}}^t - \dot{P}_{\text{Yen}}^t - \left[0,12\dot{P}_{\text{Yen}}^t - 0,53\dot{P}_{\text{ECU}}^t \right]$$

$$\dot{r}_{\$, \text{Yen}}^t = \dot{P}_{\$}^t - \dot{P}_{\text{Yen}}^t - \left[0,12\dot{P}_{\text{Yen}}^t - 0,35\dot{P}_{\$}^t \right]$$

Technical Annex

Estimation of Economic Weights based on the average of 1979-1983

Currency	Issuing country's export of goods and services In bill. SDR	Official holding of currency	Total	Econ.Weights
\$	177,710	167,41	345,12	33,92%
ECU ¹⁰	506,296	42,97	549,24	53,99%
yen	114,156	8,89	123,05	12,09%

			1.017,41	

We assume that in December 1983, 1 IUA = 1 SDR

Since in December 1983, 1 SDR = 1,29904 ECU and since during the IV quarter of 1983, the average value of 1 unit of ECU is:

1 ECU = 0,840 \$
 0,802 SDR
 196,300 yen

then, the average exchange rates of ECU per unit of currency is:

1 \$ = 1,1905 ECU
1 yen = 0,00509 ECU
1 SDR = 1,2469 ECU

Estimation of the currency amounts in the IUA

	1	2	3	4	5	6	7
\$	33,92	1,1905	0,37013	\$ 1,2438	0,460367	0,362728	\$ 0,362
ECU	53,99	1	0,70135	ECU 1	0,701350	0,687324	ECU 0,687
Yen	12,09	0,00509	30,85539	Yen 0,00531	0,163842	30,238305	Yen 30,238

1 : Economic Weights

2 : Average exchange Rates of ECU, per unit of currency (IV quart. 1983)

3 : Preliminary Currency Amounts (Column 2 X 1,29904)/ col. 3

4 : Exchange Rates in January 1984. ECU per unit of currency

5 : Preliminary Currency Amounts (Col. 4 X Col. 5)

6 : Precise Currency Amounts Col. 4 X $\frac{1,29904}{1,32559}$

7 : Rounded Currency Amounts

The estimation of the currency weights of an IVA and its value in each participating currency - 16 July 1984 -

Currency	Amounts	16.7.84 ECU exch. rates	ECU value of currency amounts	Currency weights	16.7.84 value of IUA in each cur.
\$	0,362	0,786	0,46056	0,35	1,02661
ECU	0,687	1	0,68700	0,53	1,30612
Yen	30,238	190,7	0,15856	0,12	249,07708

1 col.: 2 col. 3 col: 2 col. X
1,30612 ECU

Sources: 1) European Economy, Supplement A

2) H. Joly Dixon; (1977), The European Unit of Account
Journal of Common Market Studies

LIST OF EQUATIONS

$$\hat{p}_i^t = \frac{P_i^t}{\sum_{n=i}^t w_{n-i} P_{n-i}^t / \sum_{n=i}^t w_{n-i}}$$

$$\hat{p}_i^t = 0,4\hat{p}_i^t + 0,3\hat{p}_i^{t-1} + 0,2\hat{p}_i^{t-2} + 0,1\hat{p}_i^{t-3}$$

$$\hat{r}_{i,IUA}^t = \hat{p}_i^t$$

$$\hat{r}_{i,IUA}^t = \hat{p}_i^t - \sum_{n=i}^t w_{n-i} \hat{p}_{n-i}^t$$

$$\hat{r}_{\$,IUA}^t = \hat{p}_{\$}^t - \left[0,53\hat{p}_{ECU}^t + 0,12\hat{p}_{yen}^t \right]$$

$$\hat{r}_{ECU,IUA}^t = \hat{p}_{ECU}^t - \left[0,35\hat{p}_{\$}^t + 0,12\hat{p}_{yen}^t \right]$$

$$\hat{r}_{yen,IUA}^t = \hat{p}_{yen}^t - \left[0,53\hat{p}_{ECU}^t + 0,35\hat{p}_{\$}^t \right]$$

$$\hat{r}_{ECU,\$}^t = \hat{p}_{ECU}^t - p_{\$}^t - \left[0,35\hat{p}_{\$}^t - 0,53\hat{p}_{ECU}^t \right]$$

$$\hat{r}_{ECU,yen}^t = \hat{p}_{ECU}^t - p_{\$}^t - \left[0,35\hat{p}_{\$}^t - 0,53\hat{p}_{ECU}^t \right]$$

$$\hat{r}_{\$,yen}^t = \hat{p}_{ECU}^t - p_{\$}^t - \left[0,35\hat{p}_{\$}^t - 0,53\hat{p}_{ECU}^t \right]$$

N O T E S

Notes

1. According to some projections, long-term government revenues in the USA will average 19.5% of GNP between 1985-89, while spending was 19.8% of GNP from 1964-1974 and 22% from 1975-79, reaching almost 25% by 1983. See the US Deputy Secretary to the Treasury, R.T. McNamar's exposé at a symposium in Amsterdam, in USA mission to the EC, USAT 85 of 20/11/84. By the end of 1984, the current account deficit of the USA had increased in the order of magnitude of 100,000 million dollars, corresponding to about 3% of GNP.

2. The fact that US trade and budget deficits have been financed in great part by capital inflows has been recognised openly by US officials like the Federal Reserve Board's Chairman Paul Volcker at a Washington Post Business Outlook luncheon on 10/01/85, as reprinted in USA mission to the EC USAT 4 of 15/01/85. Volcker further recognised that this situation entailed some problems both for the US, i.e. dependence on foreign capital inflow and protectionist pressures that built up, and for the economies of other countries due to the attraction of their savings in the USA and the increasing debt burden due to high interest rates for the heavily indebted LDC's. Volcker welcomed a reduction of interest rates. For a detailed analysis of capital movements, see Robert Triffin "How to End the World Infession": Crisis Management or Fundamental Reforms" in Rainer S. Masera and Robert Triffin "Europe's Money" Clarendon Press, Oxford 1984.

3. For the theoretical exposition followed here, see Olivier Blanchard, Rudiger Dornbusch "US Deficits, the Dollar and Europe", Center for European Policy Studies (CEPS) No. 6 January 1984. For an empirical analysis of the relationship between interest rates and exchange rates, see Susan Schadler, "Interest rates and exchange rates" in "Finance and Development", June 1984. According to this study and as generally accepted nowadays, purchasing power parity seems to hold only over relatively long periods of time, while in the short to medium-term the far more volatile asset markets tend to dominate exchange rate movements, because: (a) An exchange rate can be seen as the relative price of two assets and so it is one of the main variables that adjusts to balance the supply of and demand for the stock of assets denominated in a currency. (b) Capital markets are capable of responding much more rapidly than goods markets to perceived changes in conditions. The primary factors in asset markets that affect actual or potential capital flows are changes in actual or expected relative rates of return, arising mainly from changes in actual or expected interest rate differentials, in expected movements of the exchange rate, and in the relative risk of holding various assets.

The study finds a robust, positive relationship between interest rates and exchange rates.

4. R. Triffin, (1984), p.42.

5. The following statements are revealing. Asked about whether falling interest rates would translate into a softer dollar, Treasury Secretary Donald Regan answered that "...interest rates, by themselves, are not just the cause of the strong dollar. I think there are about four things, and interest rates are probably in fourth place among these four things that have caused the strong dollar", the other three being the dynamism of an economy, the degree of freedom of its capital market and the stability of its government. Asked if the primary cause of slow economic growth elsewhere around the world has been due to the strong dollar, he answered: "The primary cause? You've got it backwards. The primary cause of slow growth around the world has been inferior economic policies. It has nothing to do with the strong dollar. The strong dollar has been very helpful in solving some of the problems that others have caused, because the strong dollar enables these nations to sell their goods to the US. We've racked up a 150 or so thousand million dollar trade deficit here, by buying their products for the first time in decades". D. Regan at a press conference September 27, 1984, reprinted in USA mission to the EC USAT 77 of 01/10/85.

The US Deputy Secretary of the Treasury, R.T. MacNamar stated that: "If Europe is to compete in a worldwide marketplace, perhaps it is time to reconsider those EC and individual country policies that are currently hindering Europe's initiative, adaption, and therefore economic growth". MacNamara at symposium in Amsterdam as reprinted in US mission to the EC USAT 85 of 20/11/84.

The US Under Secretary of the Treasury, Beryl Sprinkel stated that: "The dollar's foreign exchange value is what it is: exchange rates are determined by market forces, and if the market's assessment is that the US economy is stronger than others and US dollar assets more desirable, there is little we can do - short of weakening our economy - to convince it otherwise". He further denied the existence of a strong link between interest rates and the dollar's exchange rate naming the factors mentioned above by D. Regan as responsible for the dollar's strength. Sprinkel's speech to the National Association of Wheat Growers as reprinted in US mission to the EC, USAD 7 of 31/01/84.

These points have been stressed also by US economists like B. Cohen: "From an international perspective, what was most striking during this period was the way in which policy was determined in almost total disregard for the outside world. At no time during the administration's first term was there any serious attempt to moderate the external impacts of our fiscal dilemma, via either collaboration with our industrial allies or intervention in the exchange market". Benjamin J. Cohen "Economic Relations with other Advanced Industrial States".

6. Peter Hooper "International Repercussions of the US Budget Deficit", International Finance Discussion Papers of the Federal Reserve System, No. 246, September 1984. The paper analyses the effects of the US fiscal expansion on major industrial countries using primarily simulations with the Federal Reserve Board staff's Multicountry Model, which is a Linked system of macroeconomic models of 5 major industrial countries (USA, Canada, Japan, Germany and the UK) plus abbreviated sectors for OPEC and the rest of the world. The results of the simulations suggest that

although the US fiscal expansion has kept US interest rates significantly higher than they otherwise would have been, it has not had a significantly negative impact on real GNP in other major industrial countries, on average. The net effect on foreign GNP may have been moderately positive, as the stimulative effect of US growth more than offset the depressive effects of higher interest rates in most of these countries, the depreciation of their currencies contributing to the expansion of their exports.

7. Paul Krugman "Is the Strong Dollar Sustainable?", NBER Working Paper No 1644, June 1985.
8. American economists also point out at this practice of the US administration, like B. Cohen (1986) who remarks in particular: "By the end of the President's first term, with the US trade deficit soaring to record heights, the flow of petitions for import relief had become a flood; in 1985 more than 300 bills were filed in Congress intended to provide some form of trade protection for American producers. In effect, the administration had created a Frankenstein monster" and "A second element was a determined US campaign for a new round of unilateral negotiations in the GATT aimed, in particular, at liberalizing the movement of capital and services such as banking, insurance, data processing and telecommunications - all fields in which the US as the world's leading service-industry economy, could be expected to benefit disproportionately. Benjamin J. Cohen, "An explosion in the Kitchen?, Economic Relations with other Advanced Industrial States". In Ed. K. Oye, R. Leiber, D Rotchild "Eagle Defined: US Foreign Policy in the 80s", Little Brown, Boston.
9. George D. Demopoulos, "The influence of US monetary policy on the Community", unpublished paper of the Directorate General for Economic and Financial Affairs of the EC, April 1982 and Klaus Reeh, "Educating the Hegemon: A new and urgent role for Europe", unpublished paper of the EC Commission, May 1985.
10. Morris Goldstein, "The Exchange Rate System: Lessons of the Past and Options for the Future", IMF Occasional Paper No. 30, 1984; Richard N. Cooper, "Flexible Exchange Rates 1973-80" in R. N. Cooper, P. B. Kenen, et al editors; "The International Monetary System under Flexible Exchange Rates, Global, Regional and National", Essays in honour of R. Triffin, Ballinger Publishing Company, Cambridge, Massachusetts, 1982; Lamberto Dini, "The EMS Experience and the International Monetary System", Conference organised by the Istituto Bancario San Paolo di Torino, Turin, March 1984; Tommaso Padoa-Schioppa, "Problems of interdependence in a multipolar world", Economic Papers of the EC Commission, No. 4, August 1981.
11. John Williamson, "The Exchange Rate System", Institute for International Economics, No. 5, September 1983, Table 11 on p. 34.
12. Peter Hooper and Steven W. Kohlhagen, "The effect of exchange rate uncertainty on the prices and volumes of international trade", Journal of International Economics 8, 1978, p. 483-511, David O. Cushman, "Effects of

real exchange rate risk on international trade", *Journal of International Economics* 15, 1983, p. 45-63. The two models differ in their assumptions, the first assuming nominal profit maximisation and uncertain nominal exchange rates, the second real profit maximisation and uncertain foreign and domestic price levels in addition to uncertain nominal exchange rates.

13. Matthew B. Canzoneri, Peter B. Clark, Thomas C. Glaessner and Michael P. Leahy, "The effects of exchange rate variability on output and employment", *International Finance Discussion Papers of the Federal Reserve System* No. 240, April 1984. The results of this analysis suggest that firms with any ability to adjust to changes in the exchange rate can gain from variability. Thus exchange rate variability may bring about transfers of income from those who find adjustment costly or impossible, to those who find it less costly. The results depend further on the assumptions of the risk behaviour of firms (a risk-averse firm produces less under uncertainty about the exchange rate), the type of wages-indexation, etc.
14. Williamson, (1983), p. 39.
15. Williamson, (1983), p. 40-45.
16. Nicholas Kyriazis, "The drachma's adhesion to the EMS: Possible Effects" in "Kredit und Kapital" forthcoming.
17. Jacques van Ypersele de Strihou, "The European Monetary System" in R. N. Cooper et al, 1982.
18. Roland Vaubel, "Coordination or Competition among National Macro-Economic Policies?" in F. Machlup et al. eds. "Reflections on a Troubled World Economy", McMillan Press, 1984 and Kenneth Rogoff "Productive and Counterproductive Cooperative Monetary Policies" *International Finance Discussion Paper*, No 233, Board of Governors of the FED, December 1983.
19. The time consistency problem argues that policy makers are unable to persevere with sensible economic policies because the incentives to persevere change adversely over time.
20. R. Dornbusch expressed this opinion to the authors in regard to Germany's leadership in the EMS. According to him, Germany's policy, combined with the existence of the EMS has brought about a stronger deflationary bias in the EC than would have been the case without the EMS, and also stronger than was necessary.
21. We owe this comment to R. N. Cooper.
22. Jeffrey D. Sachs, "The Case for More Managed Exchange Rates", paper prepared for the Conference on the US Dollar, Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 1985. This paper gives also a more extended presentation of the time inconsistency problem.

23. Williamson, (1983), p. 32. He remarks strongly (p. 33), "One has to conclude that it would be quite wrong to accept macroeconomic follies like the US budget deficit as exogenous, and accommodate them without question. On the contrary, a principal purpose of seeking a more structured exchange rate system is precisely to expose such examples of myopic and internationally inconsistent national decision making."
24. Triffin, (1984), p. 44.
25. After the announcement of the cancerous operation that the US President had in July 1985 the US dollar started a rapid decline that was not justified by the economic situation at this particular moment since no fundamental changes in economic policy or the international situation had taken place.
26. J. Sachs (August 1985)
27. For the concept of the quality of a currency see Tommaso Padoa-Schioppa and Francesco Papadia, "Competing Currencies and Monetary Stability" in R. S. Maser and R. Triffin, (1984).
28. Jeffrey Sachs, "The Uneasy Case for Greater Exchange Rate Coordination", American Economics Association Papers and Proceedings, May 1986.
29. Following the discussion in Copenhagen, on 7 April, the European Council, on 6 and 7 July 1978, discussed the attached scheme for the creation of a closer monetary cooperation (European Monetary System), leading to a zone of monetary stability in Europe which has been introduced by members of the European Council.
- The paragraph 3 of the Annex mentions the policies of the EMS members vis-à-vis third countries:
- Participating countries will coordinate their exchange rate policies vis-à-vis third countries. To this end they will intensify the consultations in the appropriate bodies and between central banks participating in the scheme. Ways to coordinate dollar interventions should be sought which avoid simultaneous reverse interventions. Central banks buying dollars will deposit a fraction (say 20%) and receive ECUs in return; likewise, central banks selling dollars will receive a fraction (say 20%) against ECUs.
- In Brussels Resolution of the European Council of 5 December 1978 on the establishment of the EMS, paragraph 5, mention the policies of the EMS members vis-à-vis third countries and international organizations:
- 5.1 The durability of the EMS and its international implications require coordination of the exchange rate policies vis-à-vis third countries and, as far as possible a concertation with monetary authorities of those countries.

5.2 European countries with particularly close economic and financial ties with the European Communities may participate in the exchange rate and intervention mechanisms. Participation will be based upon agreements between central banks; these agreements will be communicated to the Council and to the Commission of the European Communities.

5.3 The EMS is and will remain fully compatible with the relevant articles of the IMF Agreement.

For further details see "The European Monetary System" in "European Economy".

30. The MERM developed in the IMF Research Department is a general equilibrium model of trade among 18 countries (21 countries before 1977). The model focuses on the effects of exchange rate changes on trade flows classified into four groups of traded goods.

Construction of MERM weighted effective exchange rate indices involves three steps:

- 1) The computation of weights;
- 2) The computation of an exchange rate relative for each currency based on its cost in terms of US dollars (series Ah in International Financial Statistics, IMF) in the base period 1980, and
- 3) The weighting of the exchange rate relatives.

The Weights, $W(i,j)$ are derived using the framework of the MERM as developed in the Fund's Research Department. A country's relative exchange rate is defined as the US dollar cost of one unit of its currency relative to its average dollar cost in 1980. A country's effective exchange rate index is the calculated by dividing its relative exchange rate by the weighted product (geometric average) of the 17 other countries' relative exchange rate. The effective exchange rate index is then set equal to 100 in the base period, 1980. The formula is:

$$ME_{(i)} = \frac{18}{17} \left(\frac{R_g(j)}{R_g(i)} \right) w(i,j) \times 100$$

$j = 1$
 $j \neq i$

where $ME_{(i)}$ = MERM weighted effective exchange rate index of country i

$R_g(i)$ = The cost of one unit of currency i in terms of the US dollar relative to its cost in the base period, 1980; that is $R_g(i) = 1$ in 1980.

$W_{(ij)}$ = a measure of the effect of 1% change in the price of currency i in terms of currency j, on the trade balance of country i, measured in its own currency and deflated by the induced change in the average of its export and import prices in its own currency (derived from MERM).

31. See also Francesco Giavazzi, Alberto Giovannini "European Currency Experience", Economic Policy Panel, November 11 1985 for similar results.

32. This arbitrary definition has been given by B. J. Cohen (1977) "Organizing the World's Money". Basic Books, Inc. Publishers, New York, pp 53-54.
33. It is argued that international economic relations have been strongly influenced by politics and have in turn had a major impact on international politics. See e.g. F. C. Bergsten, R. Keohane and J. S. Nye, 1975, "International Economics and International Politics: A Framework for Analysis", in F. C. Bergsten and L. B. Krause eds. World Politics and International Economics. Brookings, Washington, p. 6. Also see A. Lindbeck, 1973: "The national state in an Internationalized World Economy", Conjunto Universitario Candido Mendes, Rio de Janeiro; B. S. Frey and F. Schneider, 1982, "International Political Economy: An emerging Field", Seminar Paper No 227, Institute for International Economic Studies, University of Stockholm.
34. See e.g. William Wallace, "European-American Relations; the Political Context", in "European Monetary Union, Progress and Prospects", edited by M. T. Sumner and G. Zis, 1982. The MacMillan Press Ltd, pp 248-260. Also, P. Ludlow (1981) "The Making of the European Monetary System", London; Butterworth.
35. See e.g. L. Girton and D. Roper (1981) "Theory and Implications of Currency Substitution", Journal of Money Credit and Banking, 13, pp 12-30, M. Miles (1978), "Currency Substitution, Flexible Exchange Rates and Monetary Independence", American Economic Review, 68, pp 428-436, R. Mc Kinnon (1982). "Currency Substitution and Instability in the World Dollar Market", American Economic Review, 72, pp 302-333.
36. Currency substitution theory is based on three major assumptions: (a) The demand for domestic currency is highly sensitive to expected changes in the exchange rate and it is also subject to significant and unpredictable shifts; (b) The demand for world money is stable and world (as opposed to domestic) money is a better predictor of domestic inflation; (c) Inflationary expectations may cause shifts in the relative demand for the currencies.
37. See M. Mussa, "Macroeconomic Interdependence and the Exchange Rate Regime" in R. Dornbusch and J. Frenkel eds. International Economic Policy, Baltimore, John Hopkins Press, 1979, pp 160-204. Also see M. Porter, "Is there Scope for Monetary Policy?", Washington, US Federal Reserve Board, 1979.
38. Perfect capital mobility is often expressed as a function of the perfect asset or currency substitutability. Also, there is an indirect and positive correlation between the demand for non-monetary assets and demand for domestic money, as the demand for domestic transaction balances increases when international investors desire more bonds, denominated in the domestic currency. See R. I. McKinnon, "International Standard for Monetary Stabilization", Institute for International Economics No 8, March 1984.

39. See G. Calvo and C.A. Rodriguez (1977) "A Model of Exchange Rate Determination under Currency Substitution and Rational Expectations", *Journal of Political Economy*, June 1977, pp 617-625, M. Miles (1978), in J. Karekin and N. Wallace (1978) "International Monetary Reform: The Feasible Alternatives", Federal Reserve Bank of Minneapolis, *Quarterly Review*, Summer 1978, A. Brillembourg and S. Schadler, "A Model of Currency Substitution in Exchange Rate Determination 1973-1978", *IMF Staff Papers*, September 1979, pp 513-542.
40. See V. Argy and M. Porter, "The Forward Exchange Market and the Effects of Domestic and External Disturbances under Alternative Exchange Rate Regimes", *IMF Staff Papers*, November 1972, pp 503-532.
See also M. Mussa, 1979, pp 160-204.
41. There are several efforts to measure the degree of substitution among currencies.
A. Brillembourg and S. Schadler (1979) found close complementarity among continental European currencies and substitution between these European currencies and the US dollar. Paradoxically, they found a positive cross elasticity between the US dollar and the DM. F. Spinelli, "Currency Substitution, Flexible Exchange Rates and the case for International Monetary Cooperation: Discussion of a Recent Proposal", *IMF Staff Papers*, 1983, vol. 30, No 4, found a negative but low cross elasticity (-0,019) between the US dollar and the DM.
42. See L. Yeager (ed) "In search of a monetary constitution", Harvard University Press, Mass. 1962;
Bresciani - Turrone, "The economics of inflation", George Allen and Unwin Ltd., London 1937;
S. Fischer, "Seigniorage and the case for national money", *Journal of Political Economy*, 1982, vol. 90, No 21, pp 295-313.
B. Klein, "The demand for quality-adjusted cash balances: price uncertainty in the US demand for money function", *Journal of Political Economy*, 1977, vol. 85, No 4, pp 691-715.
43. Tommaso Padoa-Schioppa and Francesco Papadia (1984).
44. According to T. Padoa-Schioppa and F. Papadia, financial assets and trade contracts carrying a market determined rate of interest are subject to the quality of the currency. The indirect correlation between monetary and non-monetary assets is also mentioned in R. McKinnon (1984) (see also note No 28).
45. See S. Fischer and F. Modigliani, "Towards an understanding of the real effects and costs of Inflation", *Weltwirtschaftliches Archiv*, 1978, Vol. CXIV, pp 810-33.
46. However, improved quality by making one unit of real money more effective in producing monetary services, will tend to reduce its demand. This hypothesis was expressed by B. Klein (1977) op. cit., in a closed economy context, where only one currency circulates.

47. The expected inflation has been directly measured by using the O. Eckstein and R. Brinner (1972) formula. According to the above authors, expected price changes are assumed to be a function of past rate changes and an additional threshold effect. Specifically, expected inflation is equal to a distributed lag of the full year prior to the current quarter and has weights which decline linearly to zero. Their threshold level is 2,5% annual inflation and their additional expectation variable is the positive excess over the threshold of the annual rate of inflation during the two previous years.
The private final consumption price index has been used for the measurement of the expected inflation.
O. Eckstein and R. Brinner "The inflation process in the US", Study for the Joint Economic Comm, 92nd Cong., 2nd Session 1972.
48. T. Padoa-Schioppa and S. Papadia (1984), *op. cit.*
49. See also Table 6 of this study.
50. Sergio Siglienti (1981) "The future of the dollar as a reserve asset", in "Europe and the dollar in the world wide disequilibrium", edited by J.R. Sargent. The above author argued that the conditions that make for the emergence of a country as a reserve centre are usually as follows:
- a) The large share of world exports and imports and consequently a wide use of the reserve centre's currency for trading purposes.
 - b) A capacity and willingness of the reserve centre to finance the increasing demand for its currency.
 - c) An efficient network of financial facilities to finance trade in the reserve currency etc.
51. See Abraham Ben. Bassat (1984) "Reserve Currency Diversification and the Substitution Account", Princeton Studies in International Finance, No 53, March 1984, Princeton University.
52. See J. A. H. de Beaufort Wijnholds, "Diversification of Reserves and Monetary Stability", *The World Economy*, volume 5, No 3, November 1982, pp 303-320.
53. See Sergio Siglienti (1981), *op. cit.* and Douglas Kruse (1981) "The Reserve Currency Role of the DM and US implications for the EMS", in "EMS and the International Monetary Reform", College d'Europe, Brugge, Editions de l'Université de Bruxelles.
54. Douglas Kruse (1981) *op. cit.*
55. The ways of approaching the diversification process from a policy point of view, has been analyzed by J. A. H. de Beaufort Wijnholds (1982) *op. cit.*

56. This technique has been applied to a limited degree by W. Germany, Japan and Switzerland.
57. See, e.g. B.G. Hickman and S. Schleicher (1978) "The Interdependence of National Economies and the Synchronization of Economic Fluctuation; Evidence from the Link project", *Weltwirtschaftliches Archiv*, Band 114; Swoboda A. K. (1983), "Exchange Rate Regimes and European-US Policy Interdependence", IMF Staff Papers P. de Grauwe and M. Fratianni (1984), "Economic Interdependence since the Early Seventies", *International Economic Research Paper*, No 43, Center for Economic Studies, Leuven; S. Micossi and T. Padoa-Schioppa (1984), "Short-Term Interest Rates Linkages Between the United States and Europe", *Temi di Discussione*, Servizio Studi della Banca d'Italia, Agosto 1984, No 33.
58. T. Padoa-Schioppa and St. Micossi (1984) op. cit.
59. The models were estimated on weekly data (Wednesday data for each week) from November 1979 to March 1984, with OLS, VAR models can be estimated consistently with OLS provided that i) the model variables are wide-sense stationary stochastic processes; and ii) the error terms satisfy the usual orthogonality conditions (cf. Sargent 1979). The approach adopted in estimation and model evaluation was the following: for each variable the "best" autoregressive equation was searched by choosing the lag length which minimized the equation final prediction error (FPE, defined in the footnote to Table 5); this criterion for comparing predictors was suggested by Akaike (1970). The search procedure, on the basis of the same error minimization criterion, was then extended to multivariate equations including as "explanatory" variables the "optimal" number of lags of each dependent variable and varying lags of the other variables of the model, individually and jointly. When one variable improved the FPE - relative to that of the best autoregressive equation - a likelihood ratio test of significance was also performed on its contribution.
60. This is consistent with what R. Harris and D. Purvis have shown. They found out that volatile exchange rates rely on information asymmetry. According to them markets are not fully efficient because information does not reach all segments of the market simultaneously. For further details see R. Harris and D. Purvis (1981) "Diverse Information and Market Efficiency in a Monetary Model of the Exchange Rate", *Economic Journal*, 91, pp 829-847.
61. When in 1973, shortly after the snake's inception, the dollar was allowed to float and oil prices quadrupled, substantial real divergences arose in the economies of the main participating countries. The conflict between domestic policy objectives and exchange rate commitments was rapidly resolved in favour of the former. The United Kingdom, Italy and France, and then Sweden and Norway left the system, which only survived as a joint float of a small group of highly homogeneous countries clustered around Germany (the DM area).
62. Thygesen Niels (1979) "Exchange rate experience and policies of small countries", *Essays in International Finance*, Princeton University, No 139.

63. Flexible exchange rate cannot reduce the internal disciplinary pressures against inflation. A depreciation of currency may lead towards additional increase in domestic prices; and sooner or later monetary authorities have to halt the inflationary tendencies. This however depends on the public response about inflation.
64. Morris Goldstein, "Have flexible exchange rates handicapped macroeconomic policy", Special Papers in International Economics, No 14, June 1980, Princeton University.
65. Thygesen Niels, "The emerging EMS: Precursors, first steps and policy options", in the "The emerging EMS", edited by R. Triffin, Bulletin of the National Bank of Belgium, No 4, April 1979.
66. M. L. Greene, "US experience with exchange market intervention", Jan-Mar.1975, Sep.1977-Dec.1979, Oct.1980-Sep.1981, Staff Studies 127, 128, 129, Board of Governors of the F.R.S., August 1984.
67. M. L. Greenne (1984) op. cit.
68. Europe Documents, No 1197, 27.03.1982.
69. Europe Documents, No 1301/1302, 8.03.1984.
70. J. Sachs (August 1985). Using a large-scale 5 region model of the world economy he compares the operating properties of several alternative rules, under different exogenous shocks. The simulations show that certain rules are better in some contexts than others, but not which shocks are more probable in the future. Still, on the whole, the results do show that managed flexible rate systems are generally superior to a free floating rate.
71. Ronald I. McKinnon 1984.
72. J. Sachs (August 1985).
73. Niels Thygesen, "Flexible Exchange Rates and National Monetary Policies", University of Copenhagen, Institute of Economics, December 1984.
74. John Williamson, "The failure of world monetary reform", in R. N. Cooper et al. and John Williamson, "International Monetary Reform: A Survey of the Options", Report to the Group of 24, UNDP/UNCTAD Project INT 75/015, 1980.

75. Williamson (1983).
76. Karl Otto Poehl, "Die Rolle des Europäischen Währungssystems in der internationalen Währungsordnung", Bemerkungen des Präsidenten der Deutschen Bundesbank vor dem European Management Forum am 3.2.81 in Davos, reprinted in Deutsche Bundesbank, Auszüge aus Presseartikeln No 11, of 3.2.81. Following this view, German authorities go as far as to make a stand against further monetary integration in the Community unless a much stronger economic convergence is first achieved. But in situations where economic convergence is so strong as to result in de facto stable exchange rates further monetary integration no longer important. The problem is how to achieve such strong convergence and whether monetary integration could not help bring about further economic convergence. Historical experience suggests that this is possible. Countries or regions with different levels of economic activity and different economic structure can form a monetary union that is advantageous to all. This happened for example in France towards the end of the Middle Ages when the currency issued by the central authority, the king, replaced all other currencies issued by various feudal lords and in Germany and Italy in the 19th century after the unification of these countries.
77. Williamson (1983) p. 75, however, criticises the choice of convergence as an objective. This is fundamentally mistaken because: a) Convergence in inflation rates is unimportant; a low inflation rate is much to be desired, but its desirability is quite independent of the success that other countries are achieving in reducing inflation, provided that the exchange rate is managed, as it can be, to preserve competitiveness; b) Convergence in demand growth is in general positively harmful for it implies international synchronization of the business cycle that has led in the past to inflation and recession; c) Convergence in monetary growth makes sense only if it happens to induce a pattern of exchange rates consistent with the fundamentals.
But as Williamson recognises there are circumstances in which convergent policies (as for example a common reflation to promote recovery) are desirable. Convergence should thus mean compatibility in anticyclical policies that contain mutually supportive measures that have real growth and the reduction of unemployment as their ultimate ends.
78. Williamson (1983), pp 65-72.
79. We have followed here the typology presented in Goldstein (1984) although our appreciation of the various options differ in some cases substantially.
80. See reports on the EMS by John Purvis, European Parliament Doc. 1-971/81, Resolution adopted by the EP in OJ C 66 of 15.3.82 and Fernand Herman, E.P. Doc. 1-1251/84, resolution in OJ C 77 of 19.3.1984.
81. Jacques van Ypersele de Strihou, "The Future of the EMS", in J. van Ypersele, Jan Claude Koeune "The EMS, Origins, Operation and Outlook", Commission of the EC, European Perspectives, 1984.

82. Van Ypersele gives the following example as to the how this FED-FECOM swap would work in practice: The FED draws in one occasion on its credit line with the FECOM and borrows a certain amount of ECUs; it then requests the FECOM to convert those ECUs into DMs in order to intervene on the market, and the FECOM borrows those DMs from the Bundesbank. At this stage the FECOM would be a creditor of the FED in ECUs and a debtor of the Bundesbank in DMs. In a second stage, when repayment to the FECOM was due, the FED would consult with its European partners, and for instance would notice the strength of the DM and the relative weakness of the French franc. It would then buy French francs to reimburse the FECOM, reinforcing at the same time the French franc inside the EMS. The FECOM would end up being creditor of the French National Bank and debtor of the Bundesbank, a situation analogous to the one that might result from activating the very short term credit mechanism in the EMS.
83. Gunter D. Baer "Some Reflections on a Co-ordinated Dollar Policy. The pivotal role of Germany in the EMS". Aussenwirtschaft, 37. Jahrgang (1982) Heft II/III pp 177-196.
84. "Sterilised" interventions are those that simply change the outstanding stocks of securities in the two currencies involved without changing the monetary base. If for example, the FED were to sell DM forward, it would increase the public sector's net dollar claims (including those to be delivered in the future) and reduce the public's net dollar claims (since the public is obliged to pay dollars in the future), without changing the reserve money liabilities of the FED or the Bundesbank.
85. Klaus Reeh (1985).
86. COM(82)133 final of 18.3.1982.
87. COM(84)678 final of 29.11.1984.
88. Gilles Oudiz, Jeffrey Sachs "Macroeconomic Policy Coordination among the Industrial Economies", Brookings Papers on Economic Activity, 1 : 1984. Using two large scale econometric models, the authors focus on policy coordination among the US, Germany and Japan. The models take into account the asymmetries between the effects of US policies on Europe and Japan, and the effects of European and Japanese policies on the US, due to the special role of the dollar. Even in this asymmetric situation, the gains from coordination are present, but appear to be modest when the US, Germany and Japan are the only countries taking policy actions in response to the coordination. But if the case is transformed into a more symmetric one, i.e. if German macroeconomic policy is matched throughout the EC, then the gains of coordination at least double. In that case, as the authors remark, the US would "have a much weightier bargaining counterpart, and the US gains from policy coordination might be ipso facto substantially enlarged".

89. J. Sachs (August 1985).
90. By "True Community parallel currency" we mean an ECU that has:
 (1) At least foreign currency status in all Community (or EMS) Member States, i.e. is freely convertible in the national currency and can be used in all kinds of transactions etc., like other currencies;
 (2) A European Monetary Authority or central bank is responsible for the ECU and so in part also for the Community's external monetary policy.
91. B. Cohen remarked already in 1979: "Until now, a fundamental problem for the Europeans in international monetary relations has been their inability to negotiate with the US on an equal basis, because they are divided by separate currencies and disparate policies. Only Germany enjoys anything near America's leading role in monetary affairs, a role they may resent but can do little about. A regime of shared responsibility constructed on these terms would only perpetuate the political subordination of the Europeans - and this, in turn, would no doubt only insure more discord than harmony in international decision making". Benjamin J. Cohen, "Europe's Money, America's Problem" in *Foreign Policy*, Number 35, Summer 1979. Cohen further sees a positive role that the EMS could play and advances arguments similar to our own: "Insofar as the EMS encourages the Europeans to share explicitly in the responsibility for global monetary stabilization, America could benefit from the reduced risk of international policy conflict" and "In place of an obsolete hegemony, a new organizing principle of cooperative management would finally be within reach".
92. On the concept of "quality" and an attempt of measuring see J. Padoa-Schioppa and F. Papadia (1984).
93. Monetary targetry has come anyway under more severe criticism than some years ago because of:
 (a) The undesired side-effects on the exchange markets of the pursuit of domestic targets and of private agents' excessive concern over short-run departures from these targets;
 (b) Technical issues of controllability;
 (c) Instability of velocity due to financial innovation and/or sensitivity to variations in interest rates and inflation rates;
 (d) Concern over apparently record level real interest rates;
 (e) Perceived difficulties in controlling the long-term inflation rate solely or primarily through monetary targets. See Thygesen (1983), Triffin (1984) and Roger Bootle "Foreign Exchange Intervention: A case of ill-founded neglect", in the *Banker*, May 1983, p.p.31-40.
94. The oligopoly model that has been sketched briefly in the foregoing parts can also of course be seen as a game.
95. Matthew B. Canzoneri and Jo Anna Gray "Two Essays on Monetary Policy in an Interdependent World", I. Monetary Policy Games and the Consequences of Non-Cooperative Behaviour, II. Some Aspects of the Adjustment Problem in an Interdependent World", in "International Finance Discussion Papers" of the FED No 219, February 1983, the second reprinted also in Tamir Agmon, Robert Hawkins and Richard Levich eds. "The Future of the International

Monetary System". They develop such models, with the US as the leader and the rest of the world (ROW) as the follower. They then examine the Nash, Stackelberg and the "Fixed Rate Regime" as a third non-cooperative leader-follower game. Three different kinds of constraints are then examined, under which the players have to maximize their objective functions (utility functions, which contain a positive employment and a negative inflation term).

In the Fixed-Rate Regime, the ROW policy-makers commit their monetary policies to fixing their dollar exchange rates. The outcome is different according to each of the three cases, which characterise three different world economic situations, but in two of the cases the Fixed Rate Regime is Pareto optimal. The Fixed Rate Regime can be seen as a cooperative equivalent solution although it is not achieved through direct cooperation of the players.

Although the outcome of the model depends primarily upon the specification of the objective function and the constraint of each case, it still gives indications that: support: (a) in general cooperative solutions; (b) and in particular the implementation of a sort of managed exchange rates that can be seen as an approximation of the Fixed Rate Regime discussed in the game.

96. Robert Z. Aliber "The evolution of currency areas" in R. N. Cooper (1982). Triffin (1984) envisages a situation in which the ECU might also become a main centre of attraction among a much wider group of countries, including Western Europe, the Middle East, Africa, Australia, New Zealand and the Communist countries. He feels that many of these countries might welcome some form of 'de jure' or 'de facto' association with the ECU and the EMS. The ECU might become, in particular, a currency of denomination and even settlements, for the oil trade of the OPEC countries.
97. Beryl W. Sprinkel, Under Secretary of the Treasury for Monetary Affairs, as reprinted in USAID 7 of 30.1.1984. On another occasion (Statement before the Joint Economic Committee, 4.5.1981) he said: "Significant and frequent intervention by governments assumes that a relatively few officials know better where exchange rates should (or should not) be than a large number of decision-makers in the market, and that public funds should be put at risk on the basis of that assumption. According also to Michael Mussa "The role of official intervention "Group of thirty", Occasional papers No 6, New York 1981, the available evidence on the behaviour of exchange rates does not set out a convincing case for official intervention to correct the inherent evils of a speculative market.
98. Philippe Jurgensen "Rapport du Groupe de Travail sur les interventions sur les marchés des changes", March 1983. This Working Group was commissioned by the participants of the Versailles Summit in June 1982 to carry out a study on the effects and effectiveness of intervention.
99. Bonnie E. Loopesko "Relationships among Exchange Rates and Intervention: An Empirical Investigation" Staff Study No 133 of the FED, November 1983 and Robert Solomon "Official Intervention in Foreign Exchange Markets: A Survey". Brookings Discussion Papers, June 1983.

100. Mussa (1981).
101. R. Dornbusch (February 1986)
102. We owe this comment to Prof. J. K. Galbraith.
103. Roland Vaubel, "Logische Implikationen und Anreizwirkungen des EWS" in Zeitschrift für Wirtschafts und Sozialwissenschaften 1981/1.
104. Trevor Underwood. "Analysis of Proposals for Using Objective Indicators as a Guide to Exchange Rate Changes". IMF Staff Papers 1973.
105. OPTICA Report 1976: Inflation and Exchange Rates: Evidence and Policy Guidelines for the European Community. Commission of the European Communities, Brussels, 10 February 1977.

A P P E N D I X

BALANCE OF PAYMENTS ON CURRENT ACCOUNT IN % OF GDP

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983(1)	1984(2)
D	2,7	1,0	0,9	0,8	1,4	-0,8	-1,9	-0,9	0,5	0,5	0,8
F	-1,5	0,8	-1,0	-0,1	1,5	0,9	-0,6	-0,8	-2,2	-1,0	-0,7
I	-4,7	-0,3	-1,5	1,1	2,4	1,7	-2,5	-2,3	-1,6	-0,4	-0,1
NL	3,0	2,3	2,8	0,5	-1,1	-1,3	-1,8	2,0	2,5	3,0	3,7
B/L	1,7	0,4	-0,1	-0,9	-1,0	-2,8	-4,2	-4,1	-3,1	-1,6	-0,5
DK	-3,1	-1,3	-4,6	-3,7	-2,6	-4,5	-3,7	-3,2	-4,0	-2,2	-1,5
IRL	-10,0	-0,7	-4,1	-3,9	-4,1	-11,0	-9,8	-12,5	-8,2(1)	-2,6	-1,4
EMS	0,0	0,7	-0,2	0,3	1,1	-0,3	-1,9	-1,3	-0,9(1)	0,1	0,3
UK	-3,9	-1,5	-0,7	0,0	0,6	-0,4	1,5	2,6	1,9	0,5	0,3
GR	-6,1	-4,2	-4,1	-4,1	-3,1	-4,9	-5,5	-6,5	-5,0	-5,1	-5,5
EC	-0,7	0,3	-0,3	0,2	0,9	-0,4	-1,3	-0,5	-0,4(1)	-0,1	0,2

(1) Estimates.

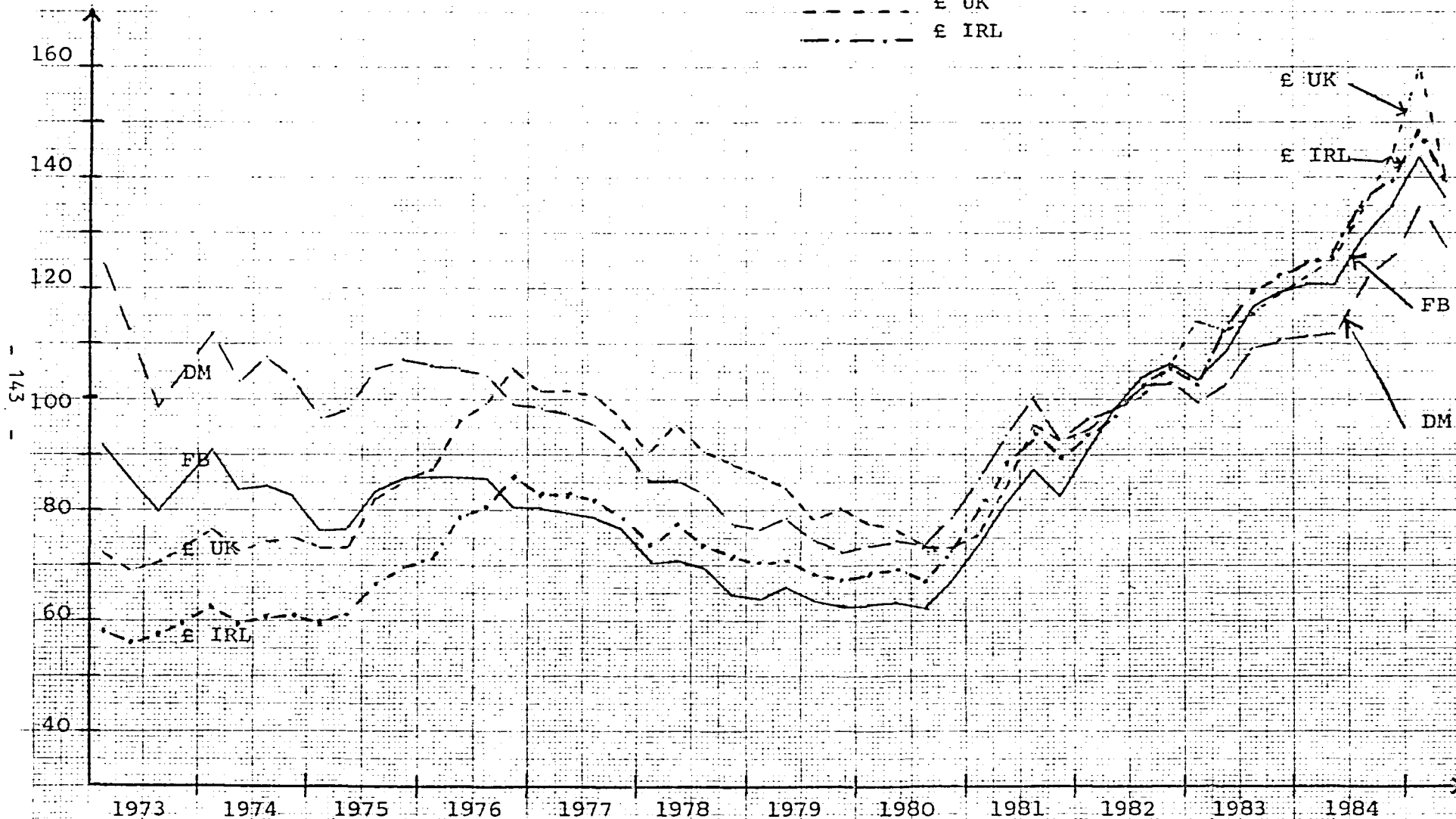
(2) Forecasts.

Sources : Eurostat "Balances of payments statistics" and Commission Departments.

Index of national currencies per us. \$.

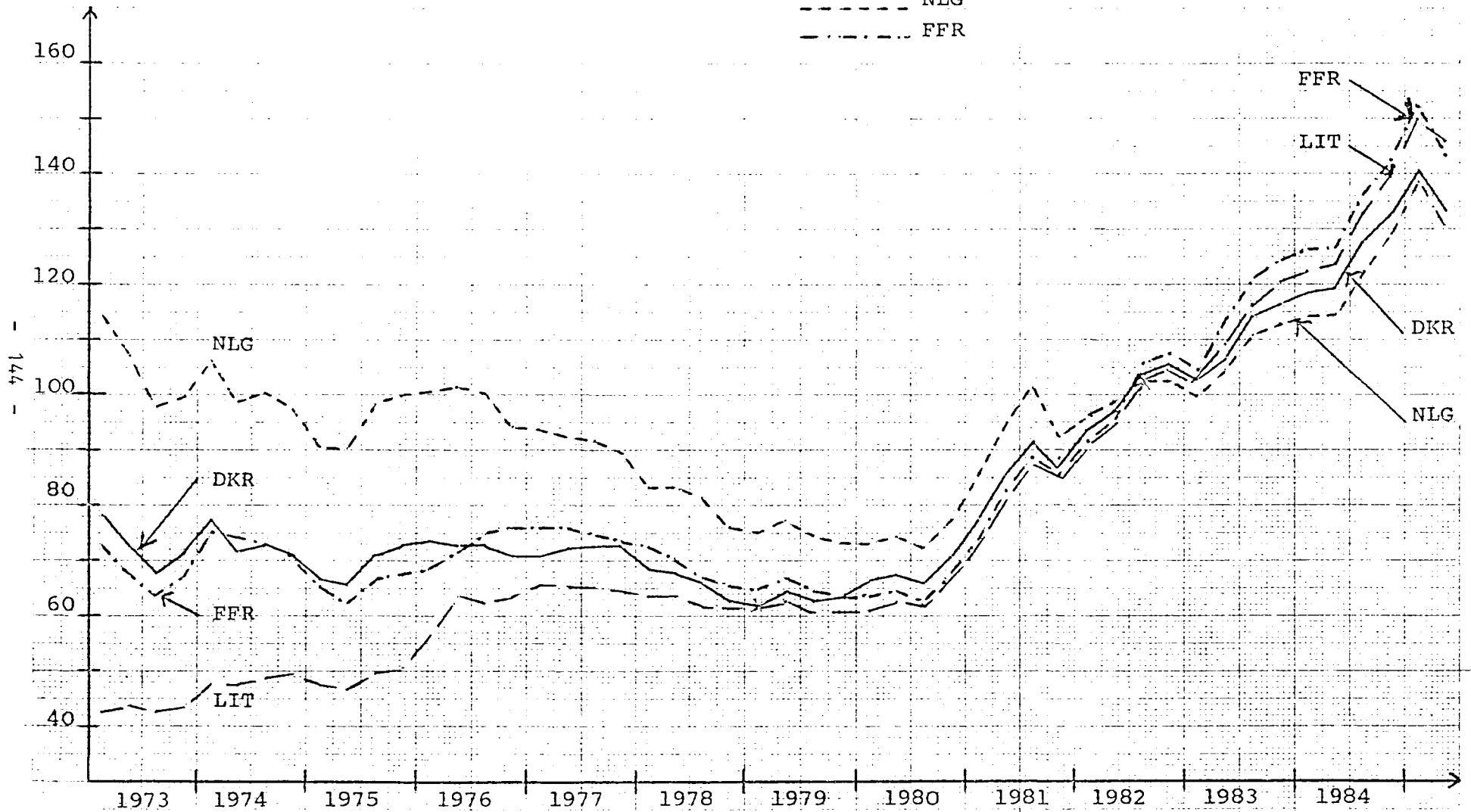
1982 = 100.

- FB
- - - DM
- - - £ UK
- . - . £ IRL



Index of national currencies per us. \$.
1982 = 100.

DKR
LIT
NLG
FFR

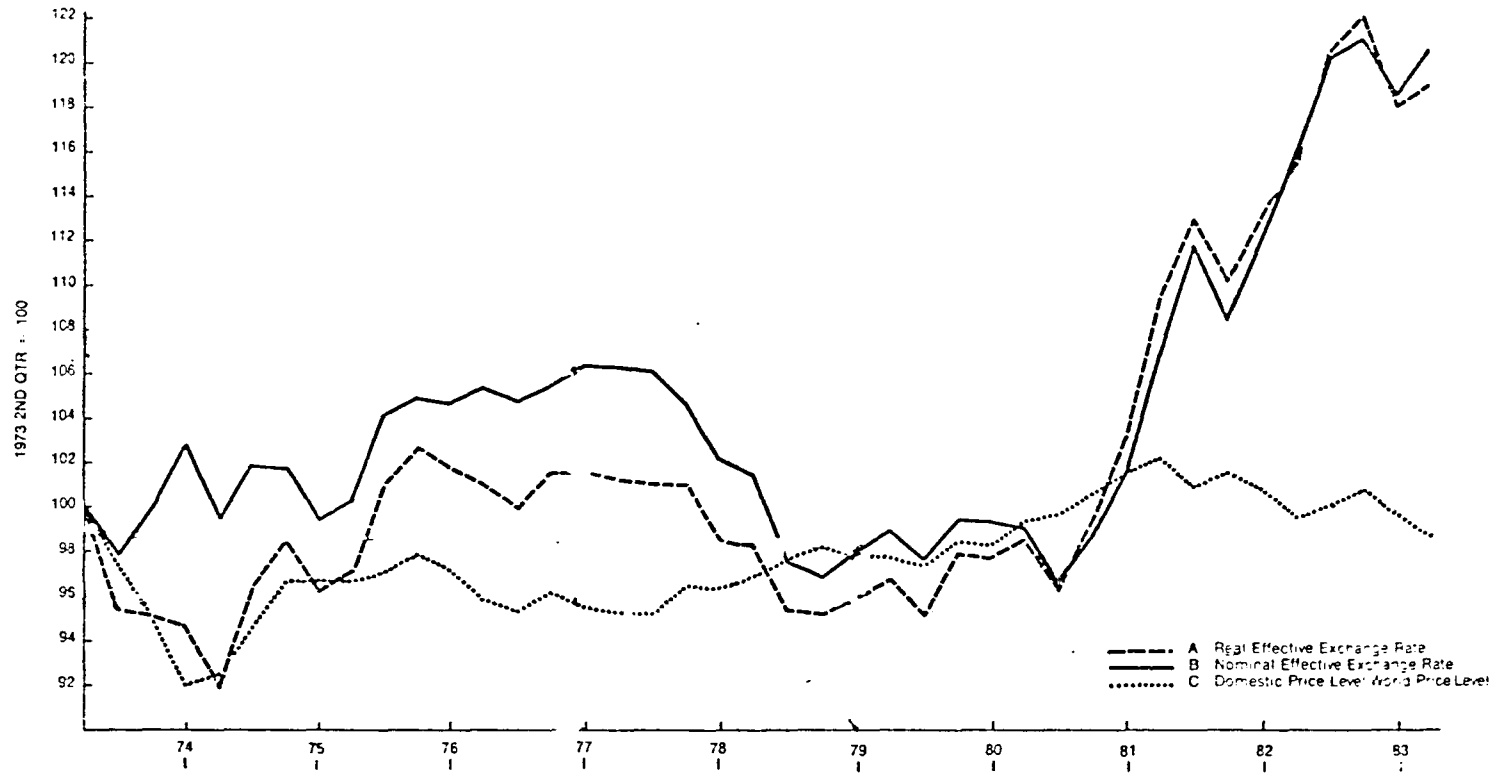


Source: CRONOS-ICG, EUROSTAT

JDA/3.10.85

Chart: B

Decomposition of changes in US real effective exchange rate



Source: *World Financial Markets*, various issues.

Chart: C

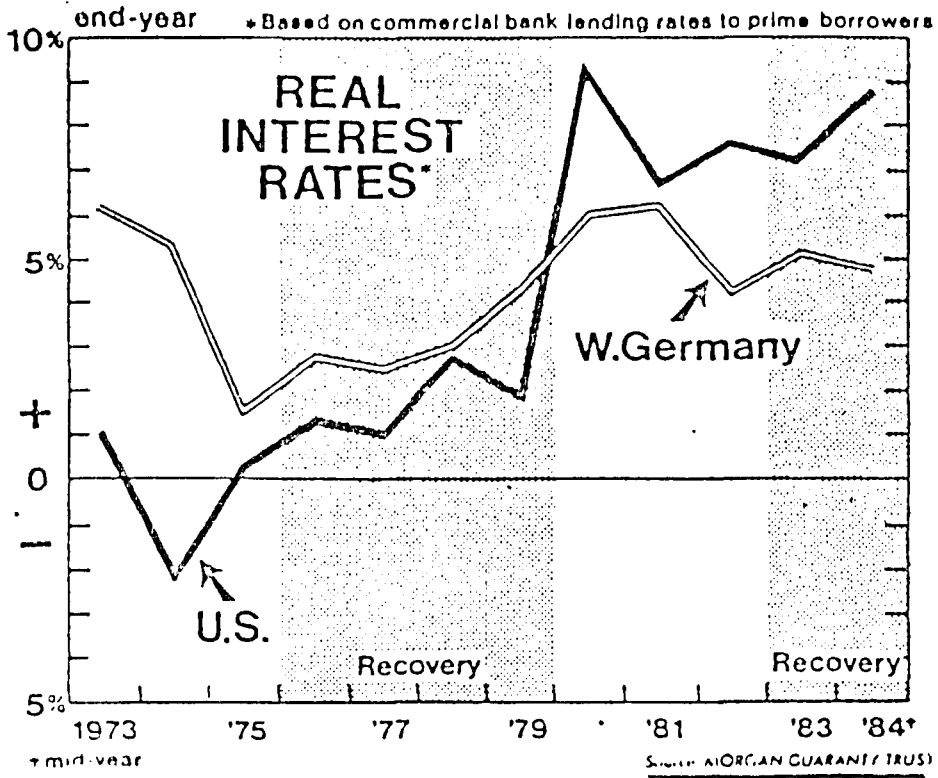
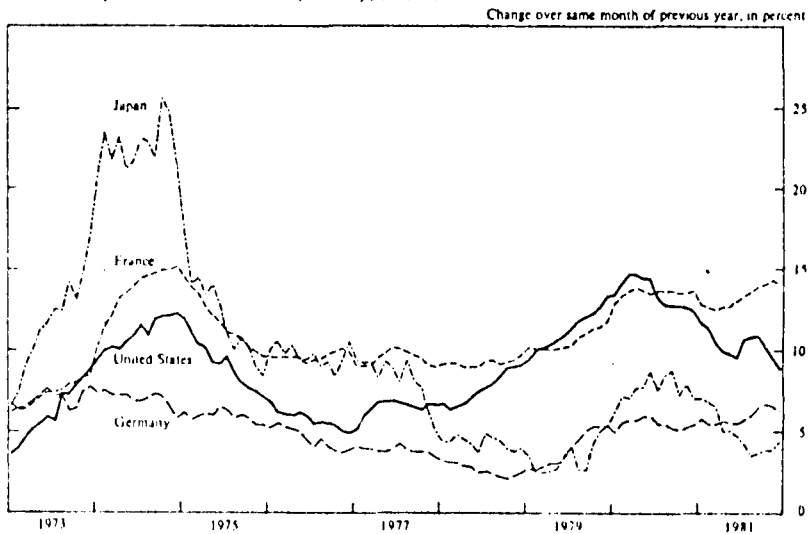


Chart : D

3. Consumer prices in selected countries, monthly, 1973-81



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