

Drexler, Wulf

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International markets, fixed exchange rates, and international stability

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INTERNATIONAL MARKETS, FIXED EXCHANGE RATES,
AND INTERNATIONAL STABILITY

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Wulf Drexler

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Introduction⁺

The issue if international markets are a source of stability or instability seems to be at the core of interest to central bankers, though one hardly finds any detailed statements that center around this issue. Only the answer to the above question by central bankers seems to be very clear. At least the author of this paper has not found so far any statement by a central banker that would not be in accord with the following summary statement: "...from the point of view of the stability of the international system the negative aspects probably outweigh the positive ones."⁽¹⁾

⁺ The author would like to interpret the following study as a first endeavour to analyze the stability problems of a fixed exchange rate system that allows for international markets. He hopes that his previously developed model (See for this: Wulf Drexler, The Determination of the Eurodollar-market within a Fixed Exchange Rate System: A Simple Model, Diskussionsbeiträge des Fachbereichs Wirtschaftswissenschaften der Universität Konstanz Nr.17, März 1972) will be useful enough to solve some of the issues already raised by various authors and that some readers of this paper will help him with their quite wellcomed comments to find more solid answers to the issues involved. The author would also like to acknowledge the very stimulating suggestions made by Karl Brunner in an unpublished paper (The Euro-Dollar Market, Memo prepared for William Wolman, 1969) and the very helpful comments given by Hans-E. Loef.

1 Otmar Emminger, The Euromarket: A Source of Stability or Instability, in: The Eurodollar, ed. by Herbert V. Prochnow, Rand McNally Chicago 1970, p.120

Otmar Emminger, however, who drew this conclusion is one of the very few central bankers and an outstanding one, too, who analyzed the stability problem and made some explicit evaluations that are interesting enough to be further investigated. One major problem with his analysis exists, however, he as most politicians likes to play the modality game. Whenever he speaks of may or might, we will translate this as most likely and thus hope to clarify somewhat the issue in question.

According to him, especially the following points merit examination, though he is well aware "that most of the problems connected with the Euromarket would in principle also exist without it, as long as free movement of short-term funds over the frontiers exists,..." (1) Our main interest will thus center around the question if "the Euromarket has given them added weight and importance" as Emminger pointed out or if the opposite holds.

- "1, The risk of breakdown in cases of default of final borrowers or of transfer difficulties.
- 2, The furtherhance of international inflation through uncontrolled credit expansion in the Euromarket.
- 3, The undue recourse to the Euromarket in order to cover up balance-of-payments deficits, with the risk of delaying a more basic adjustment.

1 O. Emminger, ...p.108

- 4, The strain on national currency reserves through large swings in short-term money flows and, in particular, the financing of huge speculative flows which tend to magnify enormously every currency crisis.
- 5, The impairment of national monetary policies by the Euro-market's providing a source of bank liquidity outside central banks.
- 6, The partial transfer of the U.S. money market abroad, thus making it possible to elude U.S. regulations."⁽¹⁾

Before we will discuss these propositions and also the evidence given by Emminger, it might be quite useful to add some further ones that also played an important role in the discussion and could be formulated in the following way:

- 7, The Euromarket loosens the connection between central banks and the balance of payments, because it attenuates the immediate impact of a balance of payments surplus (or deficit) on the international reserves of central banks.
- 8, Foreign currencies, especially dollars, are fed to the Euromarket to the detriment of European central banks' international reserves.
- 9, The Euromarket erodes the power of central banks to operate effectively with their standard policy instruments."⁽²⁾
- 10, The Euromarket erodes the stability of the international monetary system based on fixed exchange rates.

1 O. Emminger, ...p.109 and 110

2 The last three propositions were similarly raised by Karl Brunner in the already mentioned unpublished paper.

Several of the above propositions form a closely related group and will be discussed together, though all of them need a careful clarification. For this clarification some properties of our model that determines the Eurodollar-market (EDM) within a fixed exchange rate system should be quite helpful:

Foreign Currency Markets: Source of Speculation and Risk of Breakdown

Propositions 1 and 4 can be partly linked together. A breakdown of international markets as the EDM will either occur in cases of default of final borrowers or in cases of a miscalculated speculation. Emminger works out especially three points that lead - according to him - to a higher risk of breakdown:

"To guarantee the liquidity of the system, central banks act as 'lenders of last resort' on national levels. Nothing of the sort exists in the huge Eurocurrency market, at least not in its major market place, i.e., London....

...short-term Eurofunds are sometimes re-lent for medium-term loans (maturity transformation) or that a lender or intermediary often does not know anything about the end use of its money, or that in an on-lending chain the funds are sometimes converted from one currency into another....

There is one contingency where the Euromoney market may really become a monster which could shatter international financial equilibrium: namely, a general loss of confidence in the U.S. dollar. The fact that most of the Euro-deposits are denominated in U.S. dollars would, quite certainly, lead to a complete collapse of the Euromarket in case of a general flight from the dollar. This contingency is altogether too terrifying to visualize in earnest."⁽¹⁾

Some other points - not mentioned by Emminger - would be:

- 1.4 Most of the Euromarket business is done on unsecured basis and thus the total losses because of default of final borrowers will be higher than in a national market where loans are only given against securities.
- 1.5 A local crisis somewhere in the world will be very rapidly transmitted to the Euromarket and cause there major disturbances.
- 1.6 A major East-West conflict will lead to default of East European borrowers and will thus increase the risk of breakdown.

The first proposition can very easily be rejected. As our model for the determination of the EDM within a fixed exchange

1 O. Emminger, ...p.110 and 111

rate system demonstrates foreign currency market banks have to rely on central banks' high powered money in the same way as national banks specialized in home currency dealings. How a commercial bank will divide its reserves between domestic currency reserves and foreign currency reserves depends on return and cost calculations that result out of exchange and transfer risks, the currency withdrawal behavior of the public, government regulations, and interest payments for interbank demand deposits or other short term funds.

If it would be cheaper to keep reserves on foreign currency deposits in domestic currency, there should be no reason why Eurobanks should not keep all their reserves in home currency and to exchange them for foreign currency whenever necessary. As long as it is more convenient, however, to keep e.g. a part of the reserves in dollars with U.S. commercial banks and the transferability of funds is guaranteed there exists also for commercial banks specialized in home currency business an incentive to hold dollar reserves. It is then up to the U.S. banking system and the Fed to make provisions for the withdrawal behavior of foreign commercial banks. In such a case it will pay off for U.S. commercial banks to increase their own dollar reserve holdings with the Fed.

The second proposition loses quite a bit of its importance if one takes into account that foreign currency market participants have usually first class addresses. And what is even more decisive they only need to be concerned with the standing

of that borrower who borrows from them directly. What this borrower does with these funds is not of immediate interest, because his standing right now guarantees his solvency also in cases of minor or even larger defaults. But it will certainly affect his future standing, because the development of his net wealth position is a major argument for the determination of the level of credit ceilings and for further ratings.

Our fourth proposition is very much related with this point. It is certainly true that in case of default the loss will be higher for a Eurobank that grants unsecured loans than for a national commercial bank that sticks to traditional banking behaviour, though the difference in loss is very often very much exaggerated.⁽¹⁾ Cases of default were up till now very rare at the international markets so that the proportion of loss because of default to total earning assets is probably much lower for the Euro-banking system than for most national banking systems. But this is an empirical question and support

1 Traditional banking behaviour necessitates next an evaluation of the standing of the customer extensive negotiations and an extensive search for information about the potential customer that might embarrass him, and also about the national law system with all its possible escape clauses. In case of bankruptcy a traditional domestic bank may also have to engage in long and costly law procedures to get hold of the agreed upon securities. It is therefore quite possible that this bank will end up not much better off than a ED bank in a similar situation, which had made careful evaluations about the net wealth position of the customer and his future business prospectives.

for our hypothesis would indicate that Eurobanks are in fact more cautious than commercial banks that specialized in domestic business and traditional business behaviour.

The third proposition of Emminger focuses on a very serious issue: the confidence problem of the dollar. But it is hard to see why this problem that arises out of the shortcomings of fixed exchange rate systems should turn the Euromarket or the EDM into a monster and lead to its collapse. A general loss of confidence in the U.S. dollar would have the same longer run consequences on the U.S. market and on the EDM, because the relative advantages between domestic U.S. dollars and Eurodollars will not change through such a crisis. In the contrary the very likely introduction of new regulations in the U.S.A. to restrict dollar transfers to foreign countries will make it even more advantageous to hold Eurodollars instead of domestic U.S. dollars.

Such a confidence crisis will, however, lead to a change in relative advantages of dollars to non-dollars. Other currencies will substitute the dollar in many transactions and thus non-dollar foreign currency markets as e.g. the Eurocurrency market in Deutsche Mark will gain in importance against the EDM. The short run consequences, however, of a confidence crisis in the U.S. dollar on the U.S. market and the EDM are certainly quite different, the EDM being much more affected

in times of speculation. This point will be further discussed when we deal with the consequences of the Euromarket on a fixed exchange rate system.

Also the fifth point of this section refers to the problem of speculation. This proposition only holds if a local crisis has a signal effect and leads to large scale speculation. If this effect is not present, a local crisis will be less severe for the area concerned, because a part of the losses are borne by the outside world.

The last proposition will only become very important in case of a sudden and unexpected crisis. The instances of such an occurrence are very rare. Usually major political crises are easily recognizable long before they occur, though mostly one does not know when they will occur and how severe they will turn out to be. In these cases commercial banks will make provisions so that their potential losses will be not too severe. As long as such a crisis leads not to war the East European governments face the additional problem of losing their best and most trusting partners among the Eurobanks. This would be not very desirable for them so that their potential pressures will be more or less directed against governments than against private commercial banks. We further know that the total foreign currency business of East European countries (and here we are especially interested in the net position) compared with total foreign currency business carried through is relatively small, so

that out of this reason alone a default of East European borrowers should not lead to a total breakdown of these markets.

To sum up our discussion so far one can state with good reasons that the risk of breakdown of the Euromarket is not greater than that of a national market, perhaps even less if we also consider that the Euromarket does not depend on a particular country and its policies but is world wide and can move its market place to whatever country or to whatever group of countries it seems suitable.

International Markets as a Source of Inflation

Let us start with the view put forward by Emminger:

"The Euromoney market has always been suspected of furthering inflation by an overexpansion of credit. This has, for instance, been the view of an expert such as Dr. Holtrop, wellknown former president of the Dutch Central Bank. Some experts even attribute to the Euromoney market 'an enormous inflation potential.'⁽¹⁾ In my view, three different aspects need to be distinguished here.

First, there can be no doubt that the world-wide pull on (otherwise idle) cash reserves exerted by the Euromarket and, in general, its extreme flexibility in employing funds may lead

¹ Robert A. Mundell, A Plan for a European Currency, Paper presented at the American Management Association Conference, New York City, December 10 - 12, 1969

to an increase in the velocity of money or, to put it differently, to more credit being extended on a given monetary base.

Second, when a commercial bank of one country puts part of its liquidity reserve in the Euromarket, it usually continues to count it as part of its liquidity, while a bank in another country may borrow the same amount from the Eurointermediary and treat it as an addition to its cash reserve. This is an expansionary effect which, of course, could also come about by direct interbank lending of cash reserves between various countries, without the interposition of a Eurobank; however, the expansionary effect will be furthered by the fact that dollar deposits in the Euromarket enjoy a particularly high liquidity. Through the Euromarket, bank money in the U.S. may become "high-powered money" in Europe or Japan.

Third, the Eurocurrency market may create credit like any national banking system. How far it is able to do so is highly controversial. Milton Friedman⁽¹⁾ has attributed to the Eurodollar market the same faculty of multiple-credit creation that exists for the American banking System at home. To him, the major source of Eurodollars has been 'a bookkeeper's pen,' as it is of the liabilities of U.S. banks. As against this, Fred H. Klopstock⁽²⁾ of the Federal Reserve Bank of New York has argued that, in

¹ Milton Friedman, *The Euro-Dollar Market: Some First Principles*, The Morgan Guaranty Survey, October 1969

² Fred H. Klopstock, *Money Creation in the Euro-Dollar Market - A Note on Professor Friedman's Views*, Monthly Review, FRB New York, January 1970

contrast to a national banking system, Eurobanks, as a group, 'cannot count on recapturing more than a relatively small fraction of their loan proceeds.' He therefore puts the Eurobanks' capacity for multiple-credit creation rather low. (In an article of March 1968, he estimated the credit creation multiplier as lying in the approximate range of 0.5 to 0.9.)"⁽¹⁾

With respect to the first point made by Emminger two things need clarification. For one the emergence of the Euromarket as a secondary reserve market certainly made it profitable for commercial banks to reduce their total reserve holdings with central banks and to search a new optimum. This was especially true for those commercial banks that otherwise would have to rely on small little developed national money markets.

This development, however, cannot be interpreted as a "world-wide pull on (otherwise idle) cash reserves." If reserve holdings of commercial banks are interpreted as an insurance against the repurchase clause of deposits, then it makes no sense anymore to describe them as "idle". Return and cost calculations of this insurance policy -possibly in the same way as implied by our model - will determine how much currency reserves are held as vault cash or with central banks.

the statement that the emergence of the Euromarket increased the velocity of money is the other point that needs clarification.

¹ Emminger, ...p.112 and 113

According to our model a world wide decrease in reserve holdings of commercial banks (vault cash or reserves held by central banks) will certainly lead to a world wide increase in earning assets, but this increase cannot be attributed to an increase in the velocity of money held by the public. In the contrary if we assume that the velocity of money depends positively on interest rates, then a change in the reserve holding behaviour of commercial banks in such a way that commercial banks want to hold less reserves at a given interest rate will lead to a decrease in interest rates and the velocity of money decreases, too.

The second point is somewhat difficult to evaluate. It is hard to see why commercial banks should be trapped in some kind of reserve illusion. Why should individual commercial banks or complete banking systems count only their assets with other commercial banks as reserves and disregard completely their liabilities to perhaps the very same commercial banks. If they would do so within a national market they would very soon experience some severe losses in net wealth and change their policy.

Between several national currency banking systems this seems not necessarily to be the case. The main reason why this is so has to be seen in the intermediating role of central banks. It is no problem at all to exchange foreign bank money into domestic high powered money. Very often central banks do not transfer these acquired foreign reserves to the respective foreign central bank but keep them with the very same banking system the national

commercial bank had held the very same deposit. The foreign commercial banking system will not experience any reserve losses and will thus not rely on its foreign currency assets. Otherwise it would do so at least partly and finance the other reserve losses by recalling some earning assets. A credit extension with respect to the whole world will thus only occur in the above case if the IMB will be increased.

The third point - that centers around the so-called Friedman-Klopstock controversy - seems to be very easy to resolve. The great attention given to it in the literature seems not at all justified and has sidetracked quite a few authors. Friedman is right and Klopstock is wrong. Friedman is right with his main point that the bookkeeper's pen is at work in the Euromarket in the same way as it is in national markets. To emphasize this point once more it seems justified to quote in detail the corresponding section of Friedman's article:

"Eurodollar deposits, like Chicago deposits, are in principle obligations to pay literal dollars - To meet their obligations to pay cash, banks keep a 'reserve' of cash on hand. But, of course, since they are continuously receiving as well as paying cash and since in any interval they will be called on to redeem only a small fraction of their obligations in cash, they need on the average keep only a very small part of their assets in cash for this purpose....In addition, however, Chicago banks may also keep balances at correspondent banks in other cities.

Like cash, deposits at other banks need be only a small fraction of assets. Banks are continuously receiving funds from other banks, as well as transferring funds to them, so they need reserves only to provide for temporary discrepancies between payments and receipts or sudden unanticipated demands....

Eurodollar banks....will regard as a prudential reserve readily realizable funds both in the Eurodollar market itself (e.g., Eurodollar call money) and in the U.S. But for the Eurodollar system as a whole, Eurodollar funds cancel, and the prudential reserves available to meet demands for U.S. dollars consists entirely of deposits at banks in New York or other cities in the U.S. and U.S. money market assets that can be liquidated promptly without loss....

Although a precise estimate is difficult to make because of the incompleteness and ambiguity of the available data, prudential reserves of Eurodollar institutions are clearly a small fraction of total dollar-denominated obligations.

This point - that Eurodollar institutions, like Chicago banks, are part of a fractional reserve banking system - is the key to understanding the Eurodollar market. The failure to recognize it is the chief source of misunderstanding about the Eurodollar market. Most journalistic discussions of the Eurodollar market proceed as if a Eurodollar bank held a dollar in the form of cash or of deposits at a U.S. bank corresponding to each dollar of deposit liability. That is the source of such images as 'piling up,'

'borrowing back,' 'withdrawing,' etc. But this is not the case. If it were, a Eurodollar bank could hardly afford to pay 10 per cent or more on its deposit liabilities."⁽¹⁾

The decisive part of Klopstock's reply to the Friedman article reads as follows:

What then specifically are the differences between the deposit expansion processes in the United States banking and Euro-dollar systems? Perhaps the most important difference is this: When an American bank - say, in Chicago - acquires dollars and uses the resulting excess reserves to make new loans, the loan proceeds typically wind up in deposits in other American banks, while it acquires in its turn some of the deposits generated by loans made by other banks. But, when Euro-dollars are loaned by a Euro-bank, the loan proceeds rarely show up as deposits in other Euro-banks. In the United States, as borrowers disburse loan proceeds, the recipients have virtually no choice (and actually no desire) but to redeposit them in the same or another American bank which, as a result of the attendant reserve gains, may find itself in a position to make additional loans and investments. The banks' ability and willingness to expand their asset portfolios depend, of course, also on the public's demand for bank deposits and on added yields. Yet, in general, net reserve injections into the United States banking system tend to result in successive additions to outstanding bank credit though at a diminishing scale because each bank, as it obtains additional deposits, must retain some portion of its

1 Friedman, The Euro-dollar....pp.

corresponding reserve gains in its required reserves. The distinguishing characteristic of United States banks is that, taken together, they do not lose cash reserves as they expand their outstanding credit and deposits, except to the modest extent that recipients of funds choose to add to their currency holdings rather than to redeposit these funds in their own bank accounts. Euro-banks as a group, on the other hand, cannot count on recapturing more than a relatively small fraction of their loan proceeds. As Eurodollar borrowers spend the loan proceeds, the banks participating in the market, taken together, tend to lose most of the dollar balances employed in loan extensions."⁽¹⁾

The decisive flaw in Klopstock's argument, however, results out of his assumption that U.S. banks "do not lose cash reserves as they expand their outstanding credit and deposits, except to the modest extent that recipients of funds choose to add to their currency holdings rather than to redeposit these funds in their own bank accounts," whereas Euro-banks do so. But the U.S. banking system as all other banking systems in a fixed exchange rate system will also face a leakage problem with respect to Eurobanks. The very size of the US market, however, will guarantee that the percentage of this leakage will be much smaller than the one at the Euro-market.

Friedman chose for his analysis with very good reasons the Chicago banking system within the US banking system as analogy to the Eurobanking system within a fixed exchange rate system. If we would trace now for example a special primary deposit placed

¹ Klopstock, Money Creation... p. 13

with Chicago banks, the leakage out of the Chicago banking system to all other US commercial banks would be probably quite high - perhaps even higher than the one out of the ED system. From this fact one cannot deduce that the deposit multiplier for Chicago banks is quite low, much lower than for the US banking system. This leakage out of the Chicago banking system is only part of the story, because - if ^{we} neglect for a moment the cash withdrawal behaviour of the public - "banks are continuously receiving funds from other banks, as well as transferring funds to them,..."

With the help of our model that determines the EDM within a fixed exchange rate system this leakage problem can very easily be resolved. To simplify we make the following assumptions: The monetary base of the USA (MB_{US}) will be exogenous if the primary deposit is in dollars, while the monetary base of all other countries (MB_{n-1}) will be exogenous if the primary deposit is in nondollars; both monetary bases are of the same size; an exogenous increase of one of the two monetary bases will lead in the long run to an equal increase in the other monetary base; the change of the two monetary bases will be so small that it does not affect interest rates; our various deposit multipliers do not vary in the long run with differences in the placement pattern of our "primary deposit"; they are of the following size $m_{US} = 4$, $m_{n-1} = 4$, $m_{ED} = 0.8$, if related to exogenous part of the IMB ($IMB = MB_{US} + MB_{n-1}$). If we would relate the multipliers to the international monetary base IMB or to the total increase of high powered money they would have to be halved.

To find out what leakages occur the Fed donates high powered money valued 100 dollars to an individual who then decides where to put the "primary deposit." In other words the Fed increased in one case the MB_{US} by 100 dollars and in the other case the MB_{n-1} by 100 dollars denominated in non-US currency. This increase of one of the bases will under the conditions specified above result in a deposit creation of 880 dollars and in an increase of the IMB by 200 dollars in total. Out of these total deposits the US commercial banks will capture 400 dollars, the ED banks 80 dollars and all commercial banks specialized in non-US currency 400 dollars denominated in non-US currency.

If our experimentator now puts his primary deposit with a ED bank the leakage out of the EDM will be $0,90$ if we take into consideration the other two markets. If we would only be concerned with the US market the leakage would drop to $0,83$. If he would put his primary deposit with a non-US commercial bank specialized in non-US currency this banking system would experience a leakage of $0,54$. The same would happen to the US banking system if the primary deposit would be placed with the US banking system. The leakage would also be $0,54$, whereof $0,09$ is captured by the EDM. This example - even being very simple - demonstrates clearly enough why it is misleading in a world with fixed exchange rates to consider only the leakages out of a banking system and to forget the leakages to the very same banking system.

It seems reasonable to conclude that in the long run the leakages out of various banking systems and to various banking systems will roughly offset each other as long as each banking system can keep its share on total banking business. In the long run it does not matter at which banking system the "primary deposit" has been placed. This is also true for the Eurobanking system. As long as Eurobanks do not meet a hundred per cent reserve requirement and there is no reason why they should as the least restricted banking system in the world it is safe to conclude as Friedman did that Eurobanks, like Chicago banks, are part of a fractional reserve system and it seems quite certain that a ED deposit multiplier related to total reserves of the ED banking system will be much larger as assumed by Klopstock.

The other issue taken up by Klopstock can only be resolved empirically. He states that "a full understanding of the difference between the deposit expansion processes of the two systems hinges on the fact that deposit liabilities of American banks serve as the principal means of payment while those of Euro-banks do not. Few Euro-banks provide dollar checking facilities. Only a small proportion of Euro-bank deposits consists of call and overnight deposits.¹⁾

This only means that the ED time deposit ratio of the public is substantially greater than the corresponding US time deposit ratio of the public. From the very few statistics available so far one cannot get support or reject this hypothesis because they are not

1 Klopstock, Money Creation... p. 14

very reliable, but it would be very surprising if the hypothesis would hold because of the relatively very high interest incentives to hold ED demand deposits and the relatively low interest incentives to hold domestic demand deposits.

To sum up our discussion so far we can state that the emergence of international markets certainly increased the total world demand of earning assets by commercial banks. This increase resulted mainly because the emergence of the foreign currency markets made it profitable for the total world banking system to reduce its total cash reserves and to keep lower cash reserves in the average than otherwise would have seemed reasonable. In this respect the foreign currency markets (FCM) have been very expansive.

In addition to that FCM banks could offer interest advantages and other services to the public other banks throughout the world were not always able to offset by their services. This induced the public to shift a part of their assets to the FCM. This effect was probably only slightly expansive for the world as a whole, the degree of expansion depending mostly on the induced change in the overall cash ratio of the public (total cash in the hands of the public to total demand deposits of the public). It mainly lead to a reallocation of the various banking system's part of total banking business in the world in favour of the FCM banking system. It would thus be quite misleading to interpret the volume of FCM business as the exact addition to total world banking business brought about by the

emergence of international markets. But it is correct to state that the emergence of FCM allows commercial bankers in total to use the bookkeeper's pen more often.

Foreign Currency Markets and Balance of Payments

The propositions 3,7, and 8 form a closely related group and thus can be treated together. They are all prone to generate distorted impressions about the operation of foreign currency markets. Before we discuss them in detail we turn again to the evaluation given to them by Emminger:

"The Euromoney market constitutes a huge pool of international liquidity, but on a nonofficial basis. Its effects on a country's foreign-exchange position may cut both ways. On the one side, it may be used as an additional source of reserves to relieve a strain on a country's balance of payments..On the other side, it can, by helping to finance large disequilibrating foreign-exchange movements, augment the strain on a country's balance of payments. In connection with this "A more general question has been raised: Should we count on the Euromoney pool as a permanent addition to international reserves? There have in the past been suggestions (e.g., by Dr. Baffi, Director General of the Bank of Italy) to the effect that the vastly expanded Euromarket may suffice to satisfy the future reserve needs of the industrial countries so that any additional provision of official reserves might be redundant. But the Euromarket would be a very unreliable source of reserves for monetary authorities.

Except in the few countries where the central bank has full control over every bank's foreign position (as happens to be the case in Italy), monetary authorities can never be sure of whether and to what extent they can tap the Euromoney pool for currency reserves when needed. They cannot, therefore, count on such a recourse in the same way they can depend on their own reserves, or on official unconditional credit lines. In my opinion, more recent experience would rather lead to the opposite conclusion, i.e., that the growth of the Euromarket, far from alleviating the problem of official reserves, has actually aggravated it."⁽¹⁾

If we forget for a moment speculative flows, the suggestion made by Baffi seems quite interesting. It would allow individual central banks to regain any international reserve losses through balance of payments deficits by direct borrowings in private markets. They only would have to be willing to pay the corresponding interest rates and these would be higher than the corresponding ones charged for intercentralbank credits. If they would be willing to pay these interest rates they certainly could "tap the Euromoney pool for currency reserves when needed," regardless of how much control they can exercise on their domestic bank's foreign position.

This policy would have namely the same consequences for the world as a whole as the complete financing of a government deficit by the private sector. It would not increase the IMB in contrast to most intercentralbank arrangements and thus not

1 Emminger, The Euromarket....p.115

foster any kind of inflation. Central banks and governments would become more aware of the future costs of a continuous balance of payments deficit and also would become less dependent on other central banks' willingness to grant larger funds to them.

Balance of payments surplus countries could on the other hand place their additional funds to the Eurocurrency market and would thus be able to earn a return to these funds that corresponds to its market value. This system to deal with balance of payments problems seems to be a more just one than the one we have right now and which favors mostly the politically strong countries.

The above statements have certainly to be modified if one also considers times of speculation as we will show in a later section. But in the absence of speculation the above discussed way of financing a balance of payments deficit cannot be interpreted as an "undue recourse to the Euromarket...with the risk of delaying a more basic adjustment." It has something to do with a country's evaluation of present consumption to future consumption and will in a world with growing inflation be certainly more desirable than an adjustment process financed by an intercentralbank credit arrangement that increases the IMB still further.

The proposition 7 not only asserts that central banks' international reserves are more immediately affected by balance of payments in the absence of central banks' borrowings at the FCM, but also suggests that this is further the case in the complete absence of the FCM. This means if we disregard the borrowing possibility of central banks for a moment that the link between changes of

the international reserves of central banks and balance of payments has become less reliable for policy considerations with the emergence of the FCM. This will only be the case, however, if the monetary bases issued by monetary authorities either become partly isolated from the balance of payments or respond with irregular delays. Its consequences would be that bank credit and money supply of different countries would be either less affected by balance of payments or only affected after irregular delays.

To clarify this issue for the EDM we have to analyze especially the role of dollar deposits at U.S. banks of non-US banks, if it is assumed that the portfolio behavior of the public did not become more volatile as it had been before the emergence of the EDM. Such deposits with US banks were already held before the EDM developed, but the EDM certainly affected positively its volume and raised also its relative weight in the composition of non-US commercial banks' total reserves.

Such irregular delays could now result out of non-US commercial banks' volatile behavior with respect to their deposit holdings at US banks and the increasing relative variability associated with the growth of the EDM. To find out some of the consequences we could ask for example what would happen grosso modo in the different markets if the non-US banks would finance an U.S. balance of payments deficit by a short run increase of their deposits with U.S. banks. According to our model based on a fixed exchange rate system such a change of the ratio of the non-US banks dollar assets with US banks to their total

liabilities (r^D) would decrease the money supply of the US public,⁽¹⁾ the money supply of the non-US public (though very little), and increase the demand of earning assets in all three commercial banking systems.

In the above constructed case where non-US banks absorb an US balance of payments deficit in the short run without effecting the international reserves of their central banks supports the possibility of such a loosened link between international reserves and balance of payments. But it seems unlikely that in normal times such a behavior of commercial banks occurs to any larger extent than needed for portfolio adjustment processes. The empirical evidence gathered so far and bearing on excess reserve behavior suggests that we should not expect an extreme short-run variability of commercial banks overall reserve ratio.

This expectation is weakened in our case, however, by the circumstance that for the non-US banking system "internal reserves" and "reserves held as deposits with US commercial banks" are close substitutes and the short-run correlation of their changes is usually negative. It thus follows that the component ratios that go into our models are more variable than an overall reserve ratio consisting of these two components or only out of the one of non-US base money held by non-US commercial banks to total bank liabilities in case of the absence of the EDM. In this respect it seems likely that the linkage between balance of payments and changes of central banks' international reserves

1 To arrive at these relationships we established the partial derivatives of the various multipliers to r^D and picked out the most likely order conditions, except for the second case where this was not necessary.

became somewhat loosened, but this certainly does not result from a volatile and unexpected behavior of the reserve ratios but from portfolio adjustment processes that are probably quite fast between "internal reserves" and "external reserves", so that an U.S. balance of payments deficit should under normal conditions affect quite rapidly the international reserves of non-US central banks.

Somewhat unusual conditions prevailed, however, whenever Regulation Q (which established interest ceilings on all savings and time deposits in U.S. banks except of foreign central banks) became effective and U.S. banks experienced a fast run-off of their CD's especially to the EDM. These banks then turned to their foreign branches to recapture these funds. This transfer of funds from the EDM to the U.S. market via the mediation mainly of foreign U.S. branches raised the reserve ratio r^D substantially, especially because the non-US banking system earned in these instances almost as high interest returns on their dollar reserves or short term dollar assets as on domestic earning assets. This was a high enough incentive for them to reallocate their portfolios in favor of dollar reserves and this rearrangement certainly loosened the connection between the U.S. balance of payments deficit that would have been triggered otherwise by the respective interest ceilings and the international reserves of the central banks of central banks outside the USA.

It remains, however, an empirical issue we cannot solve here in this paper to what extent the propositions 7 and 8 can be

supported and how important they are. By evaluating the problem also from the internal workings of the EDM, the problems arising out of such a loosened linkage should not be very severe, especially if we also take into consideration that our analysis so far suggests that changes of the two reserve ratios are not too difficult to predict, so that central banks could be aware of its consequences.

Proposition 8 asserts further that dollar liabilities or earning assets of non-US commercial banks lower the international reserves of central banks outside the U.S.. This view misunderstands the position of the EDM relative to domestic markets. Relative to their respective central bank's international reserves the non-US commercial banks' dollar liabilities have to be similarly interpreted as their home currency liabilities. Both types of liabilities are created by the interacting responses of commercial banks and public to changes in market conditions and changes in the IMB. The home currency liabilities are not created, or increased, "to the detriment" of any source component of the MB_{n-1} . This general process of expanding jointly dollar liabilities and home currency liabilities has been worked out in the preceding chapters. There is, however, one item in the process which involves a reduction of non-US central banks international reserves: the dollar deposits at US commercial banks of non-US commercial banks. But this item seems to be relatively small in comparison of the total MB_{n-1} .

International Currency Markets and National Monetary Policies

The remaining propositions to be discussed all associate more or less an erosion of central banks' powers going along with the development of the foreign currency markets. It is suggested for example that an increase (decrease) in either the MB_{US} or MB_{n-1} resulting from expansionary (contractive) policy actions induces an outflow (inflow) of international reserves. The injection of e.g. $n-1$ base money raises immediately the banks' internal reserve ratio. A readjustment of the reserve ratio to desired positions will either depress domestic interest rates and thus induces a reallocation of assets to the EDM and perhaps somewhat later to the U.S. market, or in case of regulated domestic interest rates, readjustment involves quite directly a larger allocation to dollar assets. This acquisition of dollar assets by the non-US banking system is expected to generate an outflow of international reserves to the USA, if the MB_{US} is kept at its previous level. This outflow would now offset the earlier effect of the initial expansion of the MB_{n-1} . From this example and a similar one to be constructed for the USA follows thus that the EDM severely constrains a central bank's opportunity to pursue a monetary policy independent of the one followed by other central banks.

The general nature of this problem follows from a regime of fixed exchange rates. As we will demonstrate later in this section, the persistent sequence of international monetary

crises is the result of the various attempts of monetary authorities to disregard this constraint. And this was the less reasonable the more it became very likely that these restraints on independent monetary policy were reenforced by the evolution of a pool for international money. The FCM and thus especially the EDM provides an international money market which links the national credit markets closer together. It follows that independent changes in a country's national monetary base will induce greater reallocations between home markets and international markets as empirical examinations would certainly demonstrate.

This holds also increasingly for the USA as Emminger pointed out even though one does not agree with the interpretation given by the Fed: "Occasionally the effect of the Euromarket on a domestic monetary situation has changed within a matter of months from a "stabilizeing" to a "destabiizing" influence. Thus, the Federal Reserve in the first months of 1969 repeatedly proclaimed that the Eurodollar inflows "provided a needed safety valve for American banks - which enabled the Federal Reserve to pursue a more vigorous policy of monetary restraint than it otherwise would be able to do." By July 1969 it had become clear, however, that these same inflows "were ceasing to be a safety valve and were becoming an obvious escape route around a national policy of credit restraint" (Governor A.F. Brimmer of the Federal Reserve Board). And the then Chairman of the Federal Reserve Board, William McChesney Martin, Jr., ev en expressed concern 'that excessive Eurodollar

borrowings would have disruptive effects in financial markets, both domestic and foreign."

If such effects are deemed possible on the domestic monetary situation of the United States (beside whose domestic credit volume of 450 billion dollars any conceivable Eurodollar flows appear marginal), what can smaller European countries expect?"⁽¹⁾

Before we try to answer the question what larger countries can do and smaller countries cannot do and also what both can do we would like to analyze another aspect in this context. The increasing interdependence of national markets via FCM will especially show up in two ways depending on the existence or non-existence of interest regulations. Some countries as e.g. Germany have abandoned most of these restrictions on loan and liability markets, whereas others e.g. France and also the USA still adhere to such restrictions.

Countries with little restrictions will be much more linked via interest rates to the FCM. In the extreme case we would notice only one common interest rate. The shifts, however, between home currency earning assets and earning assets denominated in foreign currencies and home currency liabilities and liabilities denominated in foreign currencies would in these countries be quite small. In regulated markets just the opposite holds: National interest rates show a lower correlation with FCM interest rates, but changes in these foreign interest rates will induce quite often substantial shifts in the partition between domestic currency liabilities and assets and assets denominated

¹ Emminger, ...p.117 and 118

in foreign currencies. These regulations are thus not very apt to stabilize the international system.

Empirically, an increasing severity of constraints on independent monetary policy via the FCM would be revealed by a smaller variability of national monetary bases around the equilibrium \bar{q} (q represents the ratio of the MB_{US} to MB_{n-1}) or interpreted a little differently around their respective trends or interpreted still a little differently around the equilibrium IMB . This proposition will hold for all countries alike and thus be independent of the size of a country as long as the equilibrium q or the respective trend are given as exogenous. The variability of national monetary bases around this trend and the measurement of how long they can deviate from this trend would indicate the degree of independent monetary policy in the short run. The correlation between the policy components of the base and the international reserves will certainly be not -1 in the short run - mainly because of high transaction and information costs of the private sector - and this will hold regardless of the size of a country.

If, however, a special country will deviate too long or too much from the equilibrium trend, then it will either in the absence of speculation completely lose its international reserves and will have to start to borrow international reserves or it will trigger a speculation against its currency that aggravates its situation. If exchange rates remain fixed in such a case depends on the degree of intercentralbank cooperation.

This is especially true for small countries that can "easily be bought out."

The most interesting question, however, still prevails which country or which group of countries will determine the respective trend for these countries. It is very likely, that these are not the small countries. The answer to this question is thus certainly not independent of the power of the nations involved.

For all countries for which the trend is given it follows in the longer run that the offsetting counterflows created by independent policy actions will completely offset the changes in the policy components of their base. The policy components of the base would thus be correlated with coefficient -1 with the international reserves,⁽¹⁾ if account is taken for the trend.

If, however, an individual country determines together with some other countries this trend or the IMB, then the above coefficient should be for this country also in the longer run greater than -1 or even 0 if it completely controls the trend.

In this context it would naturally be of high interest to find out empirically if and to what extent the USA as the most powerful country in the West has determined the equilibrium q or the equilibrium trend for the whole world by its monetary policy.

¹ See for this especially a yet unpublished paper of Alexander K. Swoboda, Monetary Policy under Fixed Exchange Rates: Effectiveness, the Speed of Adjustment and Proper Use, February 1972

It seems quite likely that the USA was quite successful in doing so up till the sixties. Whenever major adjustments to the equilibrium path of the IMB had to be made the non-US countries carried them through by either revaluating or devaluating their currency. This constellation was also sponsored by the fact that the USA and other major countries favored independently from each other only a slight inflationary monetary policy. so that they hardly ever ended up very far apart from the equilibrium trend. During the last years this situation, however, has changed mainly because of the growing political independence of West European countries and because of the disagreement among central bankers on how much inflation a country is willing to accept for a longer period.

We thus notice now stronger deviations of individual countries from the equilibrium trend of the IMB and this in a time where the foreign currency markets are already quite developed and actually would necessitate a much lower variation of individual monetary bases around their respective trends. This development thus becomes especially attractive for speculation and will certainly not lead to any further stabilization of a fixed exchange rate system as long as the different monetary authorities cannot agree on who should determine the long run IMB or how the long run IMB should look like.

The final implied suggestion of Emminger is thus beside the point: "Altogether, the concentration of such huge amounts of short-term funds in one big international market would seem to require some

supervision and control on a world-wide scale. Nothing of the sort is, however, in sight. So each central bank is left to battle this "monster" as best it can."⁽¹⁾

This special supervision of the FCM is not necessary or if and only if one wants to cure the symptoms of speculation but not its causes. The growing importance of foreign currency markets, the increasing interdependence between national markets - going hand in hand with faster adjustment processes and larger pools for speculation - imposes more forcefully than ever before restrictions on central banks' policy measures. Open economies linked by fixed exchange rates form in the longer run a unified currency area and if we further assume different productivities of different currencies we will end up with perhaps one single currency in the whole world. This decisive restraint cannot be violated over time without generating persistent international monetary crises. If central banks want to live without this constraint than they should be willing to accept a free exchange rate system. If not, then it will be advisable to find some way to determine the longer run IMB to fight the "monster", and to agree on strong intercentralbank cooperation.

1 Emminger, ...p.121