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**CREDIT AND LIQUIDITY CREATION IN
THE INTERNATIONAL BANKING SECTOR**

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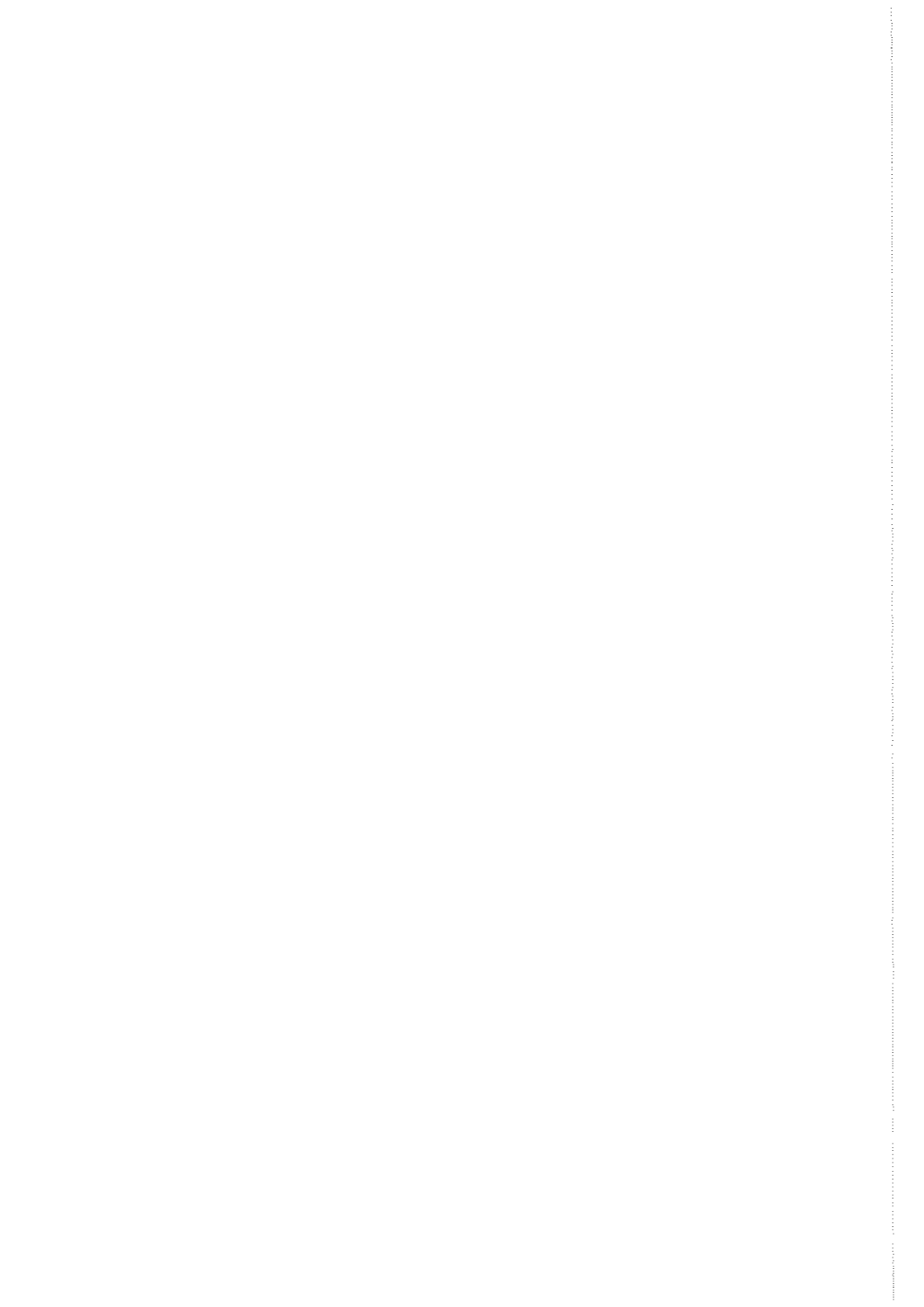


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CREDIT AND LIQUIDITY CREATION IN THE INTERNATIONAL BANKING SECTOR

Introduction

One of the most remarkable features of post-war economic history has been the progressive internationalisation of banking. The big banks, which had previously concentrated primarily on their domestic markets, have set up a network of affiliates around the globe bringing them closer to potential depositors and borrowers all over the world. One central feature of this development has been the emergence of an international banking sector, the so-called Euro-currency market, largely specialising in “across-the-border” business and enjoying far-reaching freedom from regulatory constraints and centralised macro-economic controls. The banks active in this international banking sector are essentially the same as those in the domestic markets but their Euro-currency business is usually kept apart from their domestic business by limiting the privileged regulatory status to transactions denominated in foreign currency. Banks domiciled in countries that do not grant such regulatory privileges, or banks in the United States, for which the US dollar, the principal currency denomination used in the Euro-market, is also the domestic currency, participate in the Euro-currency market largely through affiliates set up in places where regulatory and fiscal privileges are readily granted, although these affiliates are sometimes little more than an accounting fiction.

The banks use the international banking sector mainly for wholesale business, liquidity management and funding operations. Besides transacting a substantial amount of business among themselves, their

offices in the Euro-currency market take deposits from banks in the domestic markets, central banks, other public-sector entities and private entities. They use the proceeds for financing the affiliates in the national markets and for lending to other banks, to public-sector entities and to private firms, particularly those of international stature. As the Euro-currency market counts among its creditors and debtors residents of virtually every country in the world, it is a worldwide market in the truest sense of the term. Moreover, the transparency and integrating power of the market is supported by the predominant use of a single currency denomination, the US dollar.

The economic advantages of the internationalisation of banking, and of the Euro-currency market in particular, are obvious. Competition between banks on an international scale has exerted pressure on them to lower their costs and to pioneer new financing techniques. Moreover, the Euro-currency market has reduced the segmentation into national markets of the global supply of savings and of the overall demand for credit and has thereby tended to improve the allocation of scarce capital on a worldwide basis. By increasing the international mobility of capital the market has enhanced – at times when there has been a reasonable degree of confidence in the existing exchange rate structure – the effectiveness of monetary policy as an instrument for marshalling international capital flows. It has boosted the amount of finance available for covering temporary balance-of-payments disequilibria or for long-run economic development needs. And, as a result of these various influences, it has added to international flows of trade and investment, thereby contributing to a higher level of world economic activity and growth.

There are also, however, a number of problems and dangers. The increased international integration of money and capital markets has reduced national autonomy in the use of monetary policy for domestic purposes; this may be particularly hard to accept when the influences transmitted by the international banking sector are the result of policy failures in other countries. Moreover, it is feared that at times when macro-economic management in individual countries is not too firm, the very free availability of international financing may encourage

policy stances that are not in the interests of the long-run stability of the world economy as a whole. Also, at times of currency unrest and unstable exchange rate expectations, when monetary policy loses its grip on international capital movements, the increased international mobility of capital may add to the magnitude of destabilising capital flows. Finally, the privileged regulatory status of the Euro-currency market may pose problems of equity and cause distortions of competitive conditions to the disadvantage of smaller banks and other firms with less ready access to the Euro-currency market. And, what may be worse, large banks can use their affiliates in the Euro-currency market to evade the macro-economic or prudential constraints to which their business is subject at home.

It is therefore not very surprising that the Euro-currency market and its macro-economic consequences are highly controversial. What has added to the dispute is the very complex and in some respects abstract nature of the market, which makes it difficult to fit it into a simple analytical framework and to evaluate its macro-economic effects and consequences. The centre of the controversy – which is also the main subject of the present paper – has been the question of whether the market simply transmits national policy influences or whether, being largely independent of what happens in the national markets, it can exert expansionary, inflationary or other destabilising influences of its own. In other words, while the Euro-currency market may undeniably interfere with the policies of individual countries, can it also give rise to unwanted expansionary monetary impulses on a world-wide scale and thwart internationally co-ordinated macro-economic policy efforts?

This paper will start out with a model of an inter-regional banking sector in a world without national borders and with just one currency. Chapters II and III, which look at the Euro-market in its actual multi-currency setting, discuss the macro-economic consequences of the “across-the-border” nature of the market and of the reserve currency rôle of the US dollar. Chapter IV examines the impact of official deposits on the functioning and monetary repercussions of the Euro-market. Chapter V re-examines the question of an autonomous multi-

plier potential in the international context. Chapter VI discusses the factors determining the growth of the market and Chapter VII looks into the question of whether destabilising influences may emanate from the volume of credit at present outstanding in the Euro-market.

Finally, it may be appropriate to add a few words about what this paper does not include within its scope. Firstly, it does not deal with the prudential type of question related primarily to banking supervision, such as the dangers for the banks' liquidity and solvency which might conceivably result from their international risk exposure. Secondly, the paper does not seek to review the existing literature on credit and liquidity creation in the Euro-market, but simply presents the author's own very personal views on this highly controversial topic.

Chapter I

A model of the Euro-currency market in a one-country world

1. As a first step towards exploring the macro-economic modes of operation of the Euro-currency market, we shall consider the model of an inter-regional banking sector in a one-country world. Such a model can be equipped with most of the operational characteristics and economic functions of the Euro-currency market, while the very considerable complications arising from the exchange-market implications and the “across-the-border” nature of the market are avoided. Another advantage of abstracting initially from the “transnational” nature of the market is that it permits us to deal with the traditional multiplier concepts based on the analogy of Euro-currency lending with autonomous credit creation in a closed national banking system.

Needless to say, such a methodological approach is warranted solely for didactic purposes, and the conclusions reached in this chapter have to be regarded as provisional. A realistic appraisal of the credit and liquidity-creating potential of the Euro-currency market can be attempted only after allowance has been made in the following chapters for a multitude of independent national monetary authorities and currencies, as well as for the reserve currency rôle of the dollar.

Let us, then, visualise the present world as one vast country without borders and endowed with a single currency, but with strong regional diversification as regards both production structures and income levels. Let us assume, moreover, that the banks, to start with, are mainly of regional importance and that, partly as a result of preferential regulatory treatment such as freedom from minimum reserve requirements, interest ceilings and macro-economic controls, an inter-regional banking sector develops. This inter-regional banking sector will be used by the banks in the regions mainly for their liquidity management and as an outlet for regional savings surpluses or as a source of credit for covering regional savings deficits.

In addition to serving as a money and credit market for the banks in the regions, the inter-regional banking sector does a certain amount of direct business with the non-bank sector. It accepts large deposits on highly standardised terms from non-bank entities, and it extends large credits to big firms and to the regional public-sector entities which may, *inter alia*, use the funds for regional development purposes.

For a number of reasons, such as the wholesale nature of its business and its preferential regulatory status, the inter-regional sector can operate with narrower gross earning margins than the banks in the regions. But despite its competitiveness it accounts for only a minor part of the country's total banking business with the non-bank sector. This is particularly true as regards the sources side of the inter-regional banking sector, where direct deposits received from non-banks account for only about 3.5 per cent. of the country's total stock of money plus quasi-money (see table 1 on page 23). Because the banks in the inter-regional sector do not, as a rule, offer current-account facilities, only a relatively small proportion of the deposits with them are held for outright payments purposes, their share in the country's total M_1 amounting to only about 2.5 per cent.

2. What will be the macro-economic effects of the development of such an inter-regional banking sector?

(i) The liquidity-management facilities provided by the inter-regional banking sector as well as its rôle in creating closer links between the various regional banking markets will permit the country's banks to make fuller use of a given level of reserves. This means that a given amount of monetary base will support a somewhat larger volume of bank credit and a larger money stock.

(ii) Similarly, the facilities available in the inter-regional banking sector may enable large non-bank corporations to economise on outright transaction balances, thereby entailing some increase in the income velocity of money. Moreover, to the extent that the inter-regional sector makes it possible for savers to accumulate their wealth in a more liquid form, it may render future spending propensities more volatile and complicate the task of monetary management.

(iii) Since deposits in the inter-regional banking sector are free from reserve requirements, a shift of deposits from other banks to this sector will entail a reduction in required reserves and therefore an increase in the economy's credit potential.

(iv) An expansionary bias will, moreover, result if the country follows a policy of target ranges for the growth of monetary aggregates but does not take into account the growth of money holdings in the inter-regional banking sector.

It may be added that these various expansionary monetary effects will not necessarily pose insuperable problems for macro-economic management. As long as the inter-regional banking sector accounts for only a minor part of the economy's stock of money and quasi-money, they may conceivably be offset by marginally slowing down the growth of the country's monetary base and/or by setting slightly lower monetary or credit growth targets designed to take account of developments in the inter-regional sector.

(v) In addition to the expansionary monetary effects described under points (i) to (iv) above, the inter-regional banking sector will tend to exert a number of longer-run allocative and structural influences. By helping to channel capital from regions with savings surpluses to regions with savings deficits, it will tend to increase inter-regional trade, aggregate investment and employment levels. These effects will result in a higher level of economic growth and financial asset accumulation.

3. While there can be little doubt that the inter-regional banking sector will in these various ways exert moderately expansionary influences, the claims made concerning the expansionary impact of the Euro-currency market usually go much further. In particular, it is often maintained that, irrespective of what happens in national markets, the Euro-banks can autonomously create their own deposit base simply by expanding their credits. If that were correct the Euro-market could constitute an exogenous inflationary threat even if a policy of moderation were followed in the principal national markets. To what extent is this argument valid for our model of the inter-regional banking sector in a one-country world?

To answer this question it is necessary to make a short digression into multiplier theory. In fact, there is hardly any other field where the artificial (but often convenient) separation between money and national income analysis is responsible for so much muddled thinking. In a national commercial banking system the banks' deposit liabilities are the principal payment medium of the economy and the demand for this deposit money will obviously be related to the level of national income. Through credit creation, i.e. through new credits that do not have an ex ante savings counterpart, the banks can give rise to an increase in aggregate spending and in the level of national income. This increase in national income will automatically imply a higher demand for money and thus also for the banks' own deposit liabilities. As a result, the banks will not lose all their free cash and can indulge in another round of credit expansion, and so on.

In short, if the banks have free reserves to start with, they can boost the demand for their own liabilities by expanding their assets. The argument that the banks' ability autonomously to expand their own balance sheets will be limited by the need to offer higher and higher interest rates in order to attract more deposits, while valid in the case of credit intermediation, does not, therefore, apply to credit creation where the banks' own lending activities add to the demand for their liabilities. Moreover, not only can credit creation boost the demand for the banks' own liabilities; through its expansionary impact on real and/or nominal national income it can give rise to accelerator effects as regards investment activity and/or to inflationary expectations, which in turn will tend to stimulate the demand for new bank credit. This means that unless there are some leakages of funds out of the system, or other constraints (such as minimum capital ratios, credit ceilings, etc.), it is conceivable that this process of endogenous credit and deposit creation will continue, leading ultimately to an inflationary boom.

In a closed national banking system the leakages that will impose limits on this process of autonomous credit and deposit multiplication are the requirement to hold reserves at the central bank and the competition of alternative forms of money, notably currency in

circulation. Assuming a marginal reserve ratio of r and a marginal currency ratio of c , the banks' ability to expand their credits by a multiple of any increase in their free reserves will be limited to $\frac{1}{c + r - cr}$ at the very most.

4. To recapitulate, one precondition for the occurrence of this type of multiplier effect with expansionary macro-economic consequences is that new credit *must not* be based on an increase in ex ante savings. Otherwise there will simply be savings intermediation which, although associated with an expansion in the banks' balance sheets and an accumulation of financial assets, will not give rise to a cumulative process of credit and money creation. A second precondition for the occurrence of multiplier effects is that at least some portion of the banks' liabilities must take the form of money; otherwise the induced increase in demand for money will not affect their own liabilities. Provided that conditions one and two are met, there is, of course, a third condition for the banks to be able to exploit their multiplier potential to the full: there must be sufficient demand for credit, which may be lacking in times of recession.

A further precondition, not for the existence of an autonomous multiplier potential but for this potential to be significantly large, is that the banks' monetary liabilities must account for a major part of the economy's money stock. In other words, the ability autonomously to expand its credits and deposits by a major multiple of its free reserves is an attribute of the banking sector as a whole, but not of an individual bank or small group of banks within the system. For such a group of banks there will, in addition to c and r , be a third leakage " b ", i.e. the leakage of funds to the other banks in the system and its autonomous multiplier potential will only be

$$\frac{1}{c + r + b - rc - bc - br + rbc}$$

If one assumes that the holders of the monetary liabilities of this group of banks are spread fairly evenly throughout the country and its economy, $1-b$ will be roughly equal to the share of the group's monetary liabilities in total money held at banks. If, as in the case

of our inter-regional banking sector (or the Euro-market), this share is only about 2.5 per cent., leakage b will amount to about 0.975 and the ability of this group of banks to expand its credits and deposits independently of the other banks in the system will be negligible indeed. Assuming a marginal currency ratio of $c = 0.2$ and a marginal reserve ratio of $r = 0.1$, the autonomous multiplier potential of this group of banks will be insignificantly small, viz. 1.0183. In the event of an increase of \$1,000,000 in the group's free reserves, it will be able to expand its balance sheet through credit creation only by an additional \$18,300 at the very most. Moreover, in contrast to the case of credit creation by the banking sector as a whole, it is unlikely that via accelerator effects and inflationary expectations this small group of banks can affect aggregate credit demand through its own lending activities.

Finally, it should be stressed that the outcome will not be very different if this sub-group of banks is not subject to reserve requirements.

The above formula will be reduced to $\frac{1}{c + b - bc}$ and for $c = 0.2$ and $b = 0.975$ will yield a value of 1.0204. In other words, when the other types of leakage are very large it makes little difference whether or not the banks in question are compelled to sterilise part of their assets for reserve purposes. Even if the banks in this group hold their liquid reserves only in the form of deposits with each other, their ability to expand their credits by more than their free cash, independently of the rest of the banking system, will be very small. Conversely, to the limited extent that these banks hold some reserves with the central bank or with banks outside the group, the ratio between their credit total and this kind of reserve holding will tell very little about their autonomous credit-creating potential.

5. For the purposes of applying this kind of analysis to our model of the inter-regional banking sector in a one-country world, let us first assume that:

(a) the monetary authorities, while neglecting what is going on in the inter-regional sector, adhere to autonomous targets for the growth in the regional banks' deposit liabilities and will therefore fully

neutralise the impact on the regional banks of any shift in non-bank deposits between the two sectors. This means that if there is a shift of liquid non-bank funds to the inter-regional sector these deposits may be considered as “primary” in the sense that they increase the free reserves of the banking system as a whole. Moreover, the re-lending of these funds amounts to credit creation in the sense that there is no *ex ante* savings counterpart or offsetting reduction of deposits or credits anywhere else in the system; as a result, aggregate expenditure, national income and the demand for money will go up. However, with the monetary liabilities of the inter-regional sector accounting for only a very minor part of the economy’s money stock, most of the increase in bank deposits produced by the subsequent multiplier process will leak to the regional banks, where it will, according to our assumption, be sterilised. The cash that will be left with the inter-regional banking sector after the first round of credit creation and that could finance a second round of new credit will, under the above numerical assumptions ($c = 0.2$, $b = 0.975$), be only $0.8 \times 0.025 = 0.02$ (times the original increase in deposits), and the total multiplier potential will amount to $\frac{1}{c + b - bc} = 1.0204$, as in the above formula.

In other words, even if the monetary authorities leave the inter-regional sector completely alone while controlling the other banks in the system, the sector’s ability to expand its credits by more than the primary increase in deposits will be insignificantly small, despite its freedom from compulsory reserve requirements. On the other hand, the total amount of new money and its credit counterpart supplied by the inter-regional sector will be “additional”. Needless to say, this argument does not apply to credit extension by the inter-regional sector based on interbank borrowing or on non-bank deposits that do not have the character of transaction balances. Such credit would simply be a substitute for conventional credit, provided that the growth of this kind of deposit is not controlled in the regional sector either.

(b) The outcome will be different, however, under the alternative assumption that the monetary authorities, while still neglecting the

inter-regional sector, do not neutralise the impact on the regional banks of a shift in non-bank deposits between the two sectors. Provided that the banks in the two sectors are fully loaned up to start with, a shift of deposits to the inter-regional sector will, under this assumption, increase the total supply of credit only to the extent that there is a reduction in reserve requirements, and the expansion in credit extended by the inter-regional sector will be offset in large measure by the contraction (or slower growth) of the balance sheets of the banks in the regions. But whereas the "primary" element in the new deposits with the inter-regional sector will now be limited to the amount of reserves saved, the multiplier potential of this primary element will be larger, since the funds leaking to the banks in the regions will not be sterilised and will partly compensate for the original loss of reserves by the banks in the regions. For a given shift of deposits D , the maximum amount of new credit in both banking sectors considered together will total $\frac{rD}{c + r - rc}$ * or $0.357D$ if $r = 0.1$ and $c = 0.2$. This expression may be rewritten as $(1 - \frac{c(1-r)}{c + r - rc}) D$, where $\frac{c(1-r)}{c + r - rc} D$ measures the induced contraction of credit due to the loss of reserves by the regional banks. This contraction of the balance sheet of the regional banks will, of course, also lead to some withdrawals of deposits from the inter-regional sector. Assuming again that the sector's monetary liabilities account for $1-b$ of total deposit money, the total increase in new credit extended by the inter-regional sector will therefore be limited to $(1 - \frac{c(1-r)(1-b)}{c + r - rc}) D$. In other words, the total expansion in the inter-regional sector's balance sheet will be slightly smaller than the original amount of new deposits received. Moreover, even if total credit extension by the inter-regional sector is based on money, part of it (i.e. $\frac{c(1-r)b}{c + r - rc} D$) will represent only a substitute for regional credit.

* For the sake of simplicity, we have abstracted here, and also under assumption (c) below, from the impact on the average value of r of a shift of deposits to the inter-regional sector.

Needless to say, the expansionary effect could be larger if the regional banks were not fully loaned up to start with, and therefore did not have to reduce their credits in order to make up for the loss in deposits. In that case the total credit expansion could, at its upper limit, be the same as under scenario (a).

(c) As a rough analogy to what happens when Euro-market growth is fuelled by transfers of private or official funds from the United States, it may be useful to consider a third scenario, which is in fact a combination of scenarios (a) and (b). Let us assume that among the regional banks there is a group "A", the free reserves of which are not affected by flows of funds to or from the other banks in the system. This may be so because, as in scenario (a), the monetary authorities automatically offset the impact of any such flows on the A-banks' balance sheets, or because of some other institutional set-up which automatically produces that result.

If there is now a shift "D" of deposits from the A-banks to the inter-regional sector, this will, as in scenario (a), amount to an injection of free reserves into the system, since the lending potential of the inter-regional banks will increase without there being a reduction in the credit potential of any other banks. Let us assume that the regional banks other than the A-banks – we shall call them the B-banks – show the same pattern of behaviour as in scenario (b), i.e. they are fully loaned up to start with and will use any increase in deposits with them to expand their credit portfolio, there being no interference from the monetary authorities. In this scenario the maximum expansion of total credit resulting from the shift in deposits from the A-banks to the inter-regional banks will be

$$\frac{D}{c + r + a - cr - ca - ra + rca},$$

where "a" is the leakage due to the fact that in the induced process of credit creation some funds will flow back to the A-banks, where they will be sterilised. If, for example, $a = 0.3$, $c = 0.2$ and $r = 0.1$, the total multiplier potential will be 2.016 D. Since, however, the inter-regional sector accounts for only a minor part of total deposit money, most of the secondary credit expansion will occur outside

the inter-regional sector in the books of the B-banks. Assuming that the share of the inter-regional banks in the combined monetary liabilities of the B-banks and the inter-regional sector amounts to 3 per cent., their own balance sheet will only go up by approximately $[1+(2.016 -1) 0.03] D = 1.03 D$. In other words, while the total increase in money and credit will be considerably larger than the original shift of funds, the share of the inter-regional sector in the secondary credit expansion and thus its autonomous credit-creating potential will, here again, be very small indeed.

Moreover, the expansionary impact may be considerably smaller than suggested by the above argument if allowance is made for interest rate effects. Thus, the leakage of funds from the inter-regional sector to the B-banks will tend to depress the deposit rates offered by the B-banks, whereas, by definition, the leakage of funds to the A-banks will have no such effect. Consequently, the rates offered by the B-banks and also by the inter-regional sector will decline relative to those offered by the A-banks, with the result that the leakage from the B-banks to the A-banks may become larger than explained by the A-banks' share in total monetary liabilities.

Of course, the same analysis will apply, although in reverse, i.e. there will be negative multiplier effects, if there is a flow of funds from the inter-regional sector to the A-banks. Moreover, except for the difference in reserve requirements, the same type of expansionary or contractionary effects will occur in the event of shifts of funds between the A-banks and the other regional banks.

6. Summing up, it would appear that points (i) to (v) in section 2 above provide a fairly complete summary of the potentially expansionary effects of the inter-regional banking sector. Beyond that, the ability of the inter-regional sector to pull itself up by its own shoestrings, i.e. to exert major expansionary impulses independently of the policies followed by the authorities with regard to the regional sectors, will be very limited indeed. This should be immediately clear from the fact that the types of monetary liabilities which would conceivably have been created as a result of the inter-regional sector's

own lending activities constitute only a small part of its balance sheet, viz. less than 10 per cent., even if interbank positions within the inter-regional sector are left out of account. This means that the inter-regional sector owes its growth mainly to its rôle as a link between the banks in the various regions and as an intermediary for non-bank savings, and not to its own credit and money-creating potential.

But even to the very limited extent that the liabilities of the banks in the inter-regional sector are vis-à-vis non-banks and are used by their holders as transaction balances, they cannot all be assumed to have been created by the sector's own lending activities or to be in some other way additional to conventional money balances. Indeed, as implied by scenario (b) in section 5, a substantial portion of money balances held with the inter-regional sector may simply be a substitute for holdings with the regional banks. Moreover, the fact that the monetary liabilities in the inter-regional sector account for only a very small part of the economy's money stock necessarily implies that the autonomous multiplier potential of the inter-regional sector will, under any scenario, be very small indeed. It is true that substantial multiplier effects might conceivably ensue under the rather special kind of scenario constituted by (c) in section 5, but most of these multiplier effects would occur outside the inter-regional sector itself and the importance of such flows would largely depend on the policies of the authorities with respect to the banks in the regions.

On a more general level, it can probably be said that multiplier analysis, while useful in the context of a self-contained national banking system, loses much of its relevance when applied to a small sub-group of banks within such a system. There may be occasional multiplier effects but certainly no relatively stable multiplier relationship, and the quantitative importance of these multiplier effects will depend on the behaviour of the other banks in the system and thus also on the policies followed by the authorities with respect to these other banks. In particular, it would be utterly misleading to identify the autonomous multiplier potential of such a sub-group of banks with the ratio between its monetary liabilities and its reserves, especially if it holds very limited outside reserves with the monetary authorities

or the other banks in the system. Whereas in a self-contained banking system the monetary base is usually exogenously controlled by the authorities, the banks being obliged to adapt themselves to it, for any small sub-group of banks the “monetary base” is purely endogenous. Since this sub-group can always obtain (dispose of) any desired (unwanted) reserves in the interbank market, the ratio between its reserves and its monetary liabilities is almost entirely devoid of causal significance.

With reference to the inter-regional banking sector, this means that the growth of the sector’s balance sheets and its macro-economic implications have to be discussed mainly in terms of the sector’s ability to bid away business from the regional banks, in terms of its rôle in the interbank market, and in terms of its functioning as a link between the various regional financial markets. This is not, of course, to deny that by affecting the level of economic activity and economic growth in the various ways sketched under points (i) to (v) in section 2 above the inter-regional banking sector may in some very loose way influence the growth of its own balance sheets.

The following chapters will try to apply this analytical framework to a world of many currencies and independent monetary authorities, taking account, in addition, of interest rate effects and official deposits in the Euro-currency market.

Chapter II

The Euro-currency market and private liquidity

1. Let us now consider the Euro-currency market in its present world setting. The individual regions of Chapter I become separate countries endowed with their own currency and independent monetary authorities. The banks in the regions are replaced by relatively self-contained national banking systems. Contrary to what some theories and statements about the Euro-currency market seem to imply, there is, of course, no separate Euro-country for which the Euro-currency market serves as a banking system; all the assets of the Euro-banks are claims on the banks or non-bank residents of particular countries. Similarly, all the funds deposited in the Euro-market, either directly or via domestic banks, are owned by residents of individual countries, and these deposit-holders are spread over the whole world, without any particular concentration in the main industrial countries (see table on page 23).

The Euro-currency market does not, therefore, act as a self-contained banking system but as a link between the various national markets. This means that although the Euro-market is not subject to centralised control by a single central bank, its development will nevertheless be determined in large measure by the policies followed in the main participating countries and by general economic developments in these countries. This rôle of the Euro-currency market as a link between the various national markets is enhanced by the fact that, with few exceptions, the banks that are active in the Euro-currency markets are affiliates or departments of banks operating in national markets. Moreover, the national character of all ultimate sources and uses of Euro-currency funds implies that, unless depositors and borrowers happen to be residents of the same country, all credit flows intermediated by the Euro-currency market will represent international capital movements.

2. While in such a multi-country setting the Euro-market will assume a number of macro-economic dimensions that were not present in the

one-country model, the macro-economic effects discussed in the preceding section, i.e. effects (i) to (v) described on pages 10 and 11, will still be present.

Effects (i) and (ii), i.e. reserve economies for the banks and a higher income velocity of money, are, of course, difficult to quantify. However, since these effects only developed gradually with the growth of the market, they are unlikely to have been very important in any single period.

As regards effect (iv), i.e. uncontrolled growth of private liquidity not taken into account in the formulation of national monetary policies, total identified non-bank deposits in foreign currency received by banks in the Group of Ten countries, Austria, Denmark, Ireland and Switzerland, and by branches of US banks in the offshore centres of the Caribbean, amounted to \$115 billion at the end of 1978, or to 2.7 per cent. of private stocks of money and quasi-money held in national markets (see table on following page). Allowing for the various gaps in the statistics, such as the omission of a large part of the offshore centre positions and trustee funds flowing into the market via Swiss banks, the total may, however, have been closer to \$150 billion, or about 3.5 per cent. of domestic liquidity. At a rough guess, \$40 billion of this amount, or about 2.5 per cent. of domestically held money stocks, may have represented transaction balances.

As regards the main industrial countries, identified deposits by private non-bank residents of the Group of Ten countries totalled \$79 billion, or, on average, 2.3 per cent. of domestic stocks of money plus quasi-money. Here again, filling in the gaps in the statistics would give substantially higher figures, of around \$100 billion and 3 per cent. respectively. There were, however, substantial differences between individual countries. Thus, the ratio between residents' identified Euro-deposit holdings and their conventional domestic liquidity was quite high – 10 per cent. or just short of it – in the case of Belgium-Luxembourg, Canada and the United Kingdom, although the bulk of these funds represented foreign currency deposits with domestic banks. Switzerland, which acts as a domicile for many international corporations, was the only country in which residents' Euro-deposits

World monetary aggregates and non-bank deposits in the Euro-currency market¹
in billions of US dollars, end-1978 figures

	1	2	3	4	5	6	7
	money ²	money + quasi- money ²	foreign currency deposits with domestic banks	other Euro- deposits	3 + 4	4 as percentage of 2	5 as percentage of 2
World total	1,700 ^e	4,200 ^e	115		2.7
<i>of which:</i>							
Belgium-Luxembourg	29.2	53.8	3.0	2.1	5.1	3.9	9.5
Canada	25.2	93.8	8.7	0.8	9.5	0.9	10.1
France	134.6	261.0	1.3	1.6	2.9	0.6	1.1
Germany	123.8	470.3	1.6	2.8	4.4	0.6	0.9
Italy	138.1	243.4	0.8	1.3	2.1	0.5	0.9
Japan	354.2	918.4	3.0 ^e	0.2	3.2 ^e	0.0	0.3
Netherlands	30.6	84.7	2.0	1.2	3.2	1.4	3.8
Sweden	9.7	34.7	0.4	0.3	0.7	0.9	2.0
Switzerland	46.7	122.0	3.1	6.9	10.0	5.7	8.2
United Kingdom	56.0	114.6	9.3	1.8	11.1	1.6	9.7
United States	364.6	963.3	—	26.5 ³	26.5	2.8	2.8
Total for eleven countries listed	1,312.7	3,360.0	33.2	45.5	78.7	1.4	2.3

¹ Euro-currency deposits with banks in the Group of Ten countries (other than the United States) and with banks in Austria, Denmark, Ireland and Switzerland.
² Source: IMF, International Financial Statistics.
³ Including deposits by US non-banks with the branches of US banks in the Caribbean.
^e = estimates.

with banks abroad were fairly sizable in relation to domestic liquidity (6.2 per cent.). At the other end of the spectrum, Euro-deposit holdings were quite negligible in relation to conventional liquidity – 1 per cent. or less – in the case of residents of France, Germany, Italy and Japan. The United States occupied a middle-of-the-road position, with the ratio between US residents' Euro-deposit holdings and domestic liquidity amounting to 2.8 per cent.

3. In trying to evaluate the macro-economic significance of this build-up of private Euro-liquidity, the crucial question is whether it has to be considered as a substitute for or an addition to conventional non-bank liquidity held in national markets. Thus, Euro-liquidity will have to be regarded as “additional” to the extent that its build-up has not been allowed by the monetary authorities to slow down the growth of domestic monetary aggregates (scenario (a) on pages 14 and 15 above). Conversely, it will have to be considered as a substitute to the extent that the contractionary impact on domestic liquidity-of the shifting of funds to the Euro-market has not been neutralised by the national monetary authorities (scenario (b) on pages 15 and 16 above).

Although an objective identification of what is “substitutional” and what is “additional” is, of course, impossible, some observations may nevertheless be made. For one thing, in all the Group of Ten countries foreign currency deposits by residents with banks at home (column 3 in the table on the preceding page) are already included in domestic monetary aggregates; shifts of funds from conventional deposits into this type of Euro-deposit are therefore unlikely to give the signal for an inappropriate easing of domestic monetary policy. As can be seen from the table on the preceding page, such Euro-deposits with domestic banks accounted for \$33 billion out of a total of \$79 billion of identified Euro-deposits by non-bank residents of Group of Ten countries. Deposits by non-bank residents with banks abroad are mostly excluded from liquidity stock measures, but they are in general quite small in relation to domestic monetary aggregates and usually of the M_2 – M_4 rather than the M_1 type. Moreover, a large proportion of non-bank Euro-deposits would seem to come from countries that do not in any

case pursue a policy of setting monetary targets, especially not for M_2-M_4 . In most of the countries concerned it therefore seems relatively unlikely that the downward impact on domestic liquidity stock measures of such marginal transfers of non-bank funds to the Euro-market was offset through more expansionary domestic monetary policies.

In short, a large proportion of direct non-bank deposits in the Euro-currency market must be regarded as having acted as a substitute for the growth of conventional domestic non-bank deposits and not as an addition to it. Even if it is assumed that the "additional" element in the \$79 billion of identified non-bank Euro-deposits by non-bank residents of the Group of Ten countries amounted to as much as about \$40 billion, this will have contributed on a cumulative basis only about 2 percentage points to the total expansion of these countries' money plus quasi-money stock in the over twenty-five years of the Euro-market's existence. On these grounds it is difficult to argue that the uncontrolled growth of private non-bank liquidity held in the Euro-currency market has been a major influence in the dismal performance of the industrial countries in the field of price stability.

4. Finally, as regards point (iii) on page 11, i.e. the expansionary impact exerted by the Euro-currency market through a reduction in required reserves, this would seem to apply mainly to the substitutional part of non-bank Euro-deposits. Bearing in mind that the bulk of the deposits are of the M_2-M_4 type, they might have been subject to an average reserve requirement of 5 to 6 per cent. in the national markets. (This 5 to 6 per cent. figure allows for the fact that in some countries foreign currency deposits are already subject to reserve requirements and that in some other countries reserve requirements on comparable deposits in domestic currency are very low or non-existent.) Assuming that some \$40 billion of the total \$79 billion of non-bank deposits was of the "substitutional" type, the reduction in required reserves would therefore have amounted to somewhat over \$2 billion. Assuming an average domestic multiplier of 2.5, this would raise the "additional" element in private liquidity held in the Euro-market by

residents of Group of Ten countries by another \$5 to 6 billion (see scenario (b) on pages 15 and 16 above).

Needless to say, funds placed in the Euro-market by banks, which in fact account for the major part of the supply of Euro-currency funds, do not pose problems from the point of view of sections 3 and 4 above. The ultimate liability counterparts of these funds are conventional domestic non-bank deposits, which are already subject to reserve requirements and which are all included in the domestic monetary aggregates of the countries of origin of these funds. In view of the limited importance on the sources side of the Euro-market of the types of non-bank deposit that would have been subject to reserve requirements if held in conventional form, it would in fact appear that less than one-fifth of the roughly \$412 billion of total funds intermediated by the narrowly defined Euro-currency market as at mid-1979 (see table on pages 40 and 41) was based on deposits that escaped domestic reserve requirements.

This does not, of course, preclude the possibility of direct non-bank deposits and the circumvention of reserve requirements becoming a problem in the future, particularly if banks begin to book a sizable proportion of deposits from domestic non-bank customers through their affiliates in the Euro-market while using the funds for domestic lending. In fact there is evidence that, as a result of the modifications in reserve requirements introduced by the US monetary authorities in August and November 1978, very substantial circular flows of US non-bank funds to the Euro-market and back to the United States occurred in the first half of 1979, which seems to have distorted the behaviour of the US domestic monetary aggregates. The development of non-bank deposits therefore needs to be monitored very closely and it might be worthwhile considering ways in which this build-up of internationally held private liquidity might be taken into account in the formulation of domestic monetary policy targets.

Chapter III

The Euro-currency market as a channel for international capital flows

1. The fact that non-bank deposits in the Euro-currency market have not so far materially added to the global growth of private stocks of liquid assets does not, of course, necessarily imply that the expansionary impact of the market has been negligible. But it does mean that the macro-economic significance of the market depends chiefly on its impact on money and credit creation in national markets. Given the Euro-currency market's rôle as a link between national markets, the principal way in which it could have exerted such influences is through its impact on the volume, composition and geographical pattern of international capital flows.

From an analytical point of view international capital movements are in one respect fundamentally different from domestic credit flows: whereas in a national context it would be rather meaningless to distinguish between the impact of credit flows on the economy of the lender and on that of the borrower – they are in fact identical – such a distinction is crucial in an international context. For one thing, the two economies concerned are subject to different political influences and their authorities may react in asymmetric ways to the impact of the capital flows. Similarly, asymmetries in response may be due to differences in the institutional set-up of the countries in question. And, most important, there may be appreciable differences in the economic conditions or cyclical position of the two countries, with the result that the macro-economic consequences of the capital flow prove far from offsetting.

Partly in view of such possible asymmetries, the expansionary (or contractionary) impact of international capital flows and hence also of the Euro-currency market would seem to depend in large measure on the following four criteria: whether these capital flows (1) offset or (2) add to balance-of-payments imbalances and whether (a) they occur outside the reserve currency country (i.e. the United States) or (b) the United States is either the capital-importing or exporting country.

In order to explore the possible effects on the world economy of the enhanced international mobility of capital brought about by the Euro-currency market, it may be useful to review briefly the economics of these four categories of capital flow.

2. *International capital flows outside the United States which offset external payments imbalances (1a)* (such flows would in fact seem to account for the bulk of Euro-credit flows) are "stabilising" in the sense that, at least temporarily, they tend to prevent exchange rate movements and/or the contractionary and expansionary monetary influences which the external payments imbalances would otherwise have exerted in the economies of the capital-exporting and capital-importing countries respectively. Whether the Euro-currency market has a net impact on the level of world economic activity by contributing to such capital flows depends on the relative strength of the adjustment pressures that would have been exerted on the capital-exporting or importing country in the absence of the financing facilities available in the Euro-market. As it may be argued that the adjustment pressure will usually be stronger in the deficit than in the surplus countries, it is in fact quite possible that from a global point of view there will be a sizable net expansionary effect. If, in addition, the payments imbalances are due to inflation in the deficit countries rather than to unduly restrictive policies in the surplus countries, this expansionary impact may not be in the interests of the stability of the world economy and may conceivably entail a lower level of world economic activity in the longer run.

Moreover, net expansionary monetary effects may be associated with maturity transformation. The borrowing countries receiving the credits in fairly long-term form may not consider themselves in basic deficit, whereas the supplier countries may regard the outflow of funds to the Euro-currency market merely as a temporary means of financing the balance-of-payments surplus that does not obviate the need for stimulation of the domestic economy.

Finally, it should be noted that the term "financing" is appropriate chiefly in relation to the Euro-currency market's rôle in offsetting

relatively short-term or temporary balance-of-payments deficits. However, the Euro-currency market also plays a very considerable rôle in the financing of long-term economic development. As Euro-currency borrowing in this case enables the country to maintain a higher level of imports, the causalities are in a sense reversed, with the Euro-currency flows “creating” the corresponding current-account imbalances and trade flows that are necessary for the transfer of the capital in real terms. The significance of such trade-creating capital flows derives in the first place from the fact that, by helping to channel capital to where its productivity is highest, they contribute to world economic growth and development. However, they will also quite frequently have immediate expansionary effects by enabling the capital-importing countries not only to achieve a higher level of investment but also to engage in a higher level of economic activity – particularly if, as in the case of many less developed countries, there is a large reservoir of unused labour. At the same time, the export of excess savings in the form of current-account surpluses may also make it easier for the capital-exporting countries to maintain a high level of employment and activity. These various expansionary effects will in general be quite desirable and the contribution of the Euro-currency market to development finance must be deemed a positive one – as long as it does not endanger the stability of the banks involved.

There is, however, a problem that may arise in connection with these “trade-creating” capital flows. Such flows really involve three groups of countries: the capital-importing countries with the current-account deficits, the lending countries and the countries with the current-account surpluses, the last two groups of countries not necessarily being identical. In other words, the capital-exporting countries may not be the main beneficiaries of the increased export demand which they are financing. While such credit flows will be helpful from the point of view of the borrowing countries, they may conceivably cause external payments imbalances and problems for domestic monetary management in the two other groups of countries concerned.

3. *Capital flows outside the United States that result in or add to official settlements imbalances (2a)* can at times be an important feature of the Euro-currency market. Their impact on the country concerned will depend in large measure on the existing exchange rate régime. If in the capital-importing country the authorities do not intervene in the exchange markets, such credit inflows will exert upward pressure on the exchange rate until they are offset by induced balance-of-payments outflows. As in the short run the current account will not, as a rule, show much positive response to exchange rate changes, these offsetting balance-of-payments outflows will mainly take the form of induced capital outflows. Thus, in the absence of official intervention and with an unresponsive current account there can be no net capital inflows and there will not be any expansionary monetary effects in the capital-importing country. At the same time the appreciation of the country's exchange rate, through the downward impact on import prices, international competitiveness and the level of aggregate demand, will exert a deflationary influence on its price performance and level of economic activity.

If, on the other hand, the monetary authorities of the capital-importing country prevent the appreciation through intervention in the exchange market, either because they are quite happy to see a strengthening of the reserve position or because they want to avoid a decline in international competitiveness, the country's official exchange reserves and its domestic monetary base will increase. Unless the central bank takes offsetting action or uses automatic stabilisers such as exchange equalisation schemes, the resultant expansion in the banks' free reserves will tend to give rise to multiple money and credit creation. In contrast to the case of exchange rate appreciation, the impact on the level of economic activity and prices will therefore tend to be in an upward direction.

Under a system of mixed floating, such as the present one, the scenario will quite often be a combination of these two patterns. The authorities will intervene, but only after the exchange rate has shown some appreciation. Whether the deflationary effects of the appreciation or the expansionary monetary effects associated with official exchange-

market intervention will prevail depends on a large number of factors, such as the scale of the appreciation, the amount of intervention required to stabilise the rate, the cyclical state of the economy, and credit conditions.

It should be noted in this connection that from the point of view of the capital-importing or "borrowing" countries, it makes no difference whether the funds in question were originally supplied to the Euro-market in the form of interbank funds or direct non-bank deposits. Similarly, the exchange rate impact and, in some respects, the expansionary monetary effects in the capital-importing country will be the same whether the inflow takes the form of direct credits to the non-bank sector of the borrowing country or interbank loans. This, in fact, is the very reason why, in the context of international capital flows, any analysis of the Euro-market has to take into account the rôle of the banks on the sources and uses sides of the market.

This does not, of course, imply that the monetary effects of international interbank flows have to be identical in all respects to those of direct lending to non-banks. It can be argued that in the latter case an expansionary impact is more likely to ensue, since there will be an immediate increase in the capital-importing country's domestic credit supply. In the case of an inflow via the banks, the expansion in domestic credit will occur only as a second step and can be prevented by liquidity-absorbing measures by the central bank. Nevertheless, the difference in the macro-economic consequences should not be over-rated. Even direct Euro-currency borrowing by the non-bank sector will be associated with an increase in the domestic banks' balance sheets and their free reserves, and the authorities can avoid any unwanted increase in domestic credit through appropriate mopping-up operations. Moreover, the major part of non-bank borrowing in the Euro-market is effected by public-sector entities or with official encouragement, so that the unwanted expansionary side-effects should be well under control.

The same analysis naturally applies in analogous terms to the capital-exporting countries, where the depreciation of the currency will exert expansionary influences, while exchange-market intervention

and the resultant reserve losses will have a contractionary domestic monetary impact. This symmetry of effects between the capital-exporting and capital-importing countries implies that, to the extent that the growth of the Euro-currency market takes the form of (2a) types of flows, the expansionary and contractionary effects will, on the whole, prove largely offsetting.

Nevertheless, from a global point of view it could be argued that capital will usually flow from countries with relatively easy credit conditions to countries with tight conditions and that the restrictive effects in the capital-exporting countries will therefore be less pronounced than the relaxing effects in the capital-importing countries. However, disequilibrating capital flows often occur at times of exchange rate unrest. In such a situation it is quite possible for the capital to flow "uphill" from countries with relatively tight monetary conditions to countries with relatively easy ones. And even when real differences in the degree of credit tightness are the governing influences, the likelihood of the authorities in the tight-credit countries offsetting the expansionary monetary impact of the capital inflow is probably greater than the likelihood of the authorities in the easy-credit countries taking contrary offsetting measures.

Finally, it should be noted that capital flows which add to official settlements imbalances cannot always be regarded as an unwelcome and disturbing influence. In fact, it is quite conceivable that the capital-importing country is aiming at an increase in its international reserves, while the capital-exporting country is quite happy to get rid of some of its excessive international reserve holdings. In that case, the capital flow comes quite close to those discussed in the preceding section and it may have a net expansionary monetary impact from a global point of view when the external constraints it helps to avoid in the borrowing country are stronger than the expansionary pressures it helps to forestall in the lending country.

4. What has been said in section 3 about the symmetry of monetary effects on the capital-importing and capital-exporting countries will no longer hold good if one of the two countries concerned is the

United States. *Capital flows from or to the United States that add to official settlements imbalances (2b)* will tend to have a strong impact on the global level of official and private liquidity because of the reserve currency rôle of the dollar.

Leaving aside for the moment the change in US policies since November 1978, this reserve currency rôle of the US dollar means in practice that other countries accumulate the bulk of their reserves in dollars,* that these dollars – except for minimal working balances – are not held with the US monetary authorities but are invested in US money-market assets, notably US Treasury paper, and that the United States itself does not, as a rule, accumulate exchange reserves. Moreover, the amount of Treasury issues is not normally affected by foreign demand for such paper.

This behaviour pattern implies that capital outflows from the United States have no impact on the monetary base of the US economy. Let us assume, for instance, that there is a transfer of non-bank funds (by US or non-US residents) from the US financial markets to banks in the Euro-market, with the Euro-banks re-lending these funds outside the United States. Unless the exchange markets are left to find their own equilibrium this capital outflow from the United States will tend to increase official exchange reserves, base money and private liquidity in the rest of the world. But since other countries hold their official reserves in the form of US money-market assets, the outflow of private funds is in a sense automatically offset by inflows of official funds and there will be no overall tightening of monetary conditions in the United States. There will simply be a shift in the demand for US financial assets from private holders to foreign official holders.

While the overall demand for US financial assets and the average level of US interest rates will not be affected, there will, admittedly, tend to be some change in the structure of this demand. Since official holders normally invest a larger proportion of their funds in US

* It is assumed throughout this chapter that official exchange reserves are invested only in the United States. The consequences of the placement of official reserve accruals outside the United States, notably in the Euro-currency market, will be discussed in Chapter IV.

Treasury paper than do private holders, such capital outflows will tend to boost the demand for US Treasury paper and to reduce the demand for other US money-market assets (including bank deposits). As a result, Treasury bill yields will go down while other money-market rates will tend to go up. Moreover, to the extent that the Treasury bills demanded come out of the banks' own holdings, the growth in the banks' balance sheets and in the various monetary aggregates (mainly M_2 and broader definitions) will tend to slow down, which could even lead to some easing of monetary conditions.

The situation will be somewhat different, however, if instead of a transfer of non-bank funds the capital outflow takes the form of foreign lending by banks in the United States. Provided that this foreign lending does not crowd out domestic lending, the banks' balance-sheet assets will expand. This expansion in the supply of US bank deposits will offset the increase in foreign official demand for US financial assets and there will again be no change in the overall interest rate level, though there will tend to be the same change in relative rates as described in the preceding paragraph. However, the average US interest rate level may be affected indirectly. If the US monetary authorities pursue a policy of monetary growth targets, the more rapid expansion of the banks' balance sheets may induce them to tighten monetary conditions. Moreover, the foreign lending may reduce US interbank competition for domestic borrowers, thereby exerting some upward influence on the banks' lending rates.

To sum up, it may be said that the Euro-currency market, from a global point of view, will tend to have expansionary monetary effects if, at times when the US balance of payments is otherwise in equilibrium or in deficit, it adds to capital outflows from the United States. Such outflows – which can be likened to an injection of base money into a national commercial banking system – will give rise to official reserve increases, and monetary base and private liquidity creation in the rest of the world. By contrast, the monetary base of the US economy will not be affected, although some changes in interest rate differentials are likely to occur within the United States and, depending on the type of capital outflow, there may be some slight acceleration

or slowdown in the rate of growth of the US domestic monetary aggregates (i.e. mainly M_2 and broader definitions). From a global point of view, such capital outflows from the United States will therefore tend to have strongly expansionary monetary effects. Whether economic activity and inflation outside the United States will actually be boosted by these expansionary monetary effects will, however, depend on the amount of appreciation the countries concerned are willing to accept before they inflate their domestic monetary base by intervening in the exchange markets. To paraphrase Keynes, the horse will have plenty more to drink but (because of the loss in international competitiveness) its thirst may have disappeared.

The same type of analysis will, of course, apply, though with the signs reversed, to capital inflows into the United States from the rest of the world. Thus, the Euro-currency market will contribute to a decline in official reserves and to a contraction of base money and private liquidity outside the United States if, at times of a US official settlements surplus, it adds to capital inflows into the United States from the rest of the world.

The analysis applied in the preceding paragraphs may appear obsolete in some respects as a result of the November 1978 change in the official US approach to international monetary policy. These changes – such as increased US intervention in the exchange markets and a certain amount of accumulation of foreign exchange reserves by the US monetary authorities themselves – amounts to a watering-down of the immunity afforded to the US financial markets by the reserve currency rôle of the US dollar. However, the practical importance of these changes should not be exaggerated. The US authorities still follow their own monetary targets, largely independently of balance-of-payments considerations, and any undesired domestic monetary side-effects of their exchange-market operations will automatically tend to be neutralised. The analysis employed in the preceding paragraphs therefore still applies, though in a somewhat attenuated form. (The monetary implications of using non-dollar currencies for official reserve purposes will be discussed in detail in the following chapter.)

Finally, it should be noted that the expansionary monetary effects associated with capital outflows from the United States may not always be unwelcome. On the contrary, in view of the reserve currency rôle of the dollar, it is quite conceivable that the capital outflows from the United States may be indirectly induced by foreign demand for reserves. Although in practice it is not possible to distinguish such outflows from other capital movements adding to the US official settlements deficit, it would in a way be misleading to qualify them as “disequilibrating”.

5. This brings us to the fourth type of capital flow to be discussed, i.e. *capital movements between the United States and the rest of the world which offset US external payments imbalances (2a)*. What has been said in section 2 above about the preventive nature of such flows applies equally in this context, except that the overall monetary effects which these flows help to prevent from occurring will be much more pronounced. For example, capital flows to the United States that offset a deficit in the other items of the US balance of payments will exert a stabilising deflationary monetary influence in the sense that the deficit would not, in any case, have led to monetary tightening in the United States but would have boosted official reserves and private liquidity creation in the rest of the world.

6. Finally, brief mention should be made of the only (but quantitatively quite important) type of Euro-credit flow that in a certain sense does not involve international capital movements, viz. *Euro-credit flows in respect of which the original suppliers of the funds and the ultimate borrowers are residents of one and the same country*. It is to circular Euro-credit flows such as these that the analysis developed in Chapters I and II is in some respects most directly applicable and it may not be necessary to enumerate the various points again. Suffice it to say that these circular Euro-credit flows may be quite welcome from a macro-economic point of view when they are due to the lack of a domestic money market or a sufficiently developed domestic banking system. They have to be considered as a disturbance, on the other hand, when

they are motivated by a desire to circumvent reserve requirements, minimum capital ratios or domestic monetary restraint policies; in such cases, their net monetary impact will clearly tend to be expansionary. Moreover, particularly when such circular flows of funds through the Euro-market are denominated in the country's domestic currency, they will complicate the task of domestic monetary management.

7. The reader may have noted that in the preceding section no mention was made of the currency denomination of the capital flows. The reason is that the currency in which a given credit flow is denominated does not influence its macro-economic consequences or its ultimate exchange rate impact. This explains why Euro-credit flows are no different from more traditional forms of international capital movements and why balance-of-payments statistics are based solely on the distinction between residents and non-residents and not on the distinction between flows in domestic currency and those in foreign currency.

This does not, on the other hand, imply that the currency in which a Euro-deposit is constituted is a matter of indifference. The currency denomination of the funds is bound to have an important influence on their ultimate geographical destination. For example, in the case of a Euro-deposit constituted in dollars, the chance that the funds will be re-lent to a US bank or non-bank resident is much greater than in the case of a Euro-Deutsche Mark deposit, where there is a higher probability of the borrower being a German resident. A switch between currencies will therefore tend to give rise to international capital flows, but it is the size and the direction of these flows, and not their currency denomination as such, which will ultimately determine the exchange rate effects and other economic consequences of that switch.

In short, while the macro-economic significance of the Euro-currency market derives primarily from its impact on the scale and geographical pattern of international capital movements, whatever their currency denomination, the size and direction of this impact will partly depend on depositors' and borrowers' currency preferences.

8. Perhaps the most important conclusion to be drawn in attempting to summarise the present chapter is that the monetary impact of the Euro-currency market will be neither constant nor uniform but will vary greatly according to the type and direction of the capital flows to the intermediation of which it contributes. Thus, the Euro-currency market may exert quite a strong expansionary influence on global reserves and private liquidity when, at times of a US balance-of-payments deficit, the financial channels which it provides tend to magnify capital outflows from the United States. Conversely, the Euro-currency market will have contractionary monetary effects when it contributes to capital flows from the rest of the world to the United States. To the extent that the Euro-currency market increases disequilibrating capital flows outside the United States, its overall expansionary effects will tend to be considerably less pronounced, although the impact on the individual countries concerned may be quite strong.

Disequilibrating capital flows will occur mainly when domestic monetary policies are not geared to balance-of-payments requirements, or when, because of lack of confidence in the existing exchange rate structure, monetary policy loses its grip on international capital movements. This amounts to saying that Euro-credit flows may add to problems of macro-economic management and exchange rate stability, mainly at times of large international inflation differentials and policy uncertainties when exchange rate movements may themselves have a strong impact on individual countries' price performance and on exchange rate expectations.

On the other hand, the Euro-currency flows will tend to be rather helpful when they finance or offset disequilibria in the other items of the balance of payments. In this case their monetary and exchange rate impact as well as their effects on the level of economic activity will tend to be stabilising, although there may be problems of instability in the longer run if the easy financing facilities available in the Euro-market give rise to untenable policies. If the Euro-credit flows are of the "trade-creating" type they will clearly tend to have an expansionary impact on levels of employment and economic growth. Although here

again there may be a danger of abuse, these effects will in general be welcome.

9. The table on pages 40 and 41 presenting the BIS estimate of the amount of credit outstanding in the narrowly defined Euro-currency market suggests that on a cumulative basis the bulk of Euro-currency flows occurred between third countries or between residents of the same country. Flows of funds from and to the United States on a cumulative basis partly cancelled each other out and by mid-1979 the Euro-currency market was only a relatively modest net receiver of funds, about \$12 billion, from that country. However, this picture is somewhat misleading and one cannot firmly conclude from it that the expansionary monetary effects of Euro-currency flows have been on a relatively minor scale.

For one thing, a substantial portion of the liabilities shown vis-à-vis the offshore centres may reflect US funds that were supplied to the Euro-market via the US banks' book-keeping domiciles in the Caribbean. Moreover, a very sizable proportion of private and official non-US deposits in the market are funds that in the absence of the Euro-dollar market would undoubtedly have been held in the United States. Although in the absence of the Euro-currency market banks in the United States would probably have engaged in a larger amount of foreign lending, the possibility cannot be ruled out that the Euro-currency market has, on balance, added to net capital outflows from the United States.

Moreover, what is more important than the cumulative total over a period of twenty years or so, during which the minuses and pluses largely offset each other, is the size of the various types of net flows in individual time periods. In fact, there were periods when capital flows to or from the United States were a prominent feature of Euro-market developments, e.g. the first half of 1969 when heavy borrowing by US banks led to a dramatic tightening of Euro-market conditions, and the years 1970 and 1971 when the repayment of these funds, together with an acceleration of other payment outflows from the United States, threatened to drown the rest of the world in a flood of

Estimated sources and uses

End of month	Reporting European area ¹		United States	Canada and Japan	Other developed countries
	Total ²	of which non-bank ³			
in billions of US dollars					
Uses					
1973 December	49.0	29.5	13.5	12.7	14.7
1974 December	61.5	41.3	18.2	18.2	20.4
1975 December	63.0	43.6	16.5	20.2	25.8
1976 December	74.4	51.5	18.2	21.6	33.0
1977 December I	99.2	69.9	21.0	18.7	42.6
December II	110.4	77.3	21.3	18.7	30.8
1978 March	115.6	80.3	18.5	20.4	31.9
December I	136.0	92.0	24.6	24.6	34.7
December II	139.5	94.5	24.6	24.6	34.7
1979 March	141.8	96.2	25.6	26.3	34.0
1979 June	147.0	100.0	30.5	27.5	36.2
Sources					
1973 December	50.8	27.5	9.5	9.8	17.7
1974 December	67.8	37.1	11.9	8.7	18.5
1975 December	79.5	39.2	15.4	8.3	19.9
1976 December	86.7	45.5	18.8	10.5	21.3
1977 December I	108.6	54.9	24.9	8.4	26.6
December II	117.3	56.0	25.4	8.4	18.8
1978 March	123.2	58.6	26.9	9.6	20.0
December I	142.5	70.1	37.0	13.0	26.2
December II	144.5	70.1	37.0	13.0	26.2
1979 March	150.5	73.1	36.4	13.3	26.0
1979 June	163.0	81.4	42.3	13.9	28.2

¹ Up to December 1977 (December I) the reporting European area covered Belgium-Luxembourg, France, Germany, Italy, the Netherlands, Sweden, Switzerland and the United Kingdom. Since 1977 (December II) it also includes Austria, Denmark and Ireland. Conversely, as from 1977 (December II) positions vis-à-vis Austria, Denmark and Ireland are excluded from the positions vis-à-vis "Other developed countries".

² Includes: (a) under "Uses", the banks' conversions from foreign currency into domestic currency and foreign currency funds supplied by the reporting banks to the commercial banks of the country of issue of the currency in question (such as DM funds deposited with German banks); (b) under "Sources", deposits by official monetary institutions of the reporting area, the banks' conversions from domestic into foreign currency and foreign currency funds obtained by the reporting banks from the banks in the country of issue of the currency in question (such as funds received in DM from German banks).

of Euro-currency funds

Eastern Europe ¹	Offshore banking centres ²	Oil-exporting countries ³	Developing countries	Un-allocated ⁴	Total
In billions of US dollars					
Uses					
7.4	18.7	3.3	11.0	1.7	132.0
10.1	26.7	3.5	15.7	2.7	177.0
15.9	35.6	5.3	19.5	3.2	205.0
20.8	40.8	9.6	24.7	3.9	247.0
23.8	43.7	15.6	30.0	5.4	300.0
25.7	43.9	15.7	30.3	3.2	300.0
27.0	43.4	17.8	31.8	3.6	310.0
31.4	55.0	24.3	40.1	4.3	375.0
31.4	55.0	24.3	40.1	2.8	377.0
30.9	53.2	24.2	44.5	3.5	384.0
32.8	59.2	26.4	48.7	3.7	412.0
Sources					
3.7	12.5	10.0	14.6	3.4	132.0
5.1	17.8	29.1	15.5	2.6	177.0
5.4	21.8	34.6	16.2	3.9	205.0
6.4	30.1	45.2	21.3	6.7	247.0
6.4	33.2	54.0	29.5	8.4	300.0
7.0	33.4	54.5	29.6	5.6	300.0
6.6	33.9	54.5	31.3	4.0	310.0
8.8	45.4	54.7	39.8	7.6	375.0
8.8	45.4	54.7	39.8	7.6	377.0
7.7	43.7	56.3	42.4	7.7	384.0
7.9	46.0	58.9	44.4	7.4	412.0

¹ On the sources side including trustee funds to the extent that they are transmitted by the Swiss banks to the other banks within the reporting area and to the extent that they are not reported as liabilities vis-à-vis non-banks outside the reporting area by the Swiss banks themselves.

² Excluding positions of banks located in the Federal Republic of Germany vis-à-vis the German Democratic Republic.

³ Bahamas, Barbados, Bermuda, Cayman Islands, Hong Kong, Lebanon, Liberia, Netherlands Antilles, New Hebrides, Panama, Singapore, other British West Indies.

⁴ Algeria, Bahrain, Brunei, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Oman, Qatar, Saudi Arabia, Trinidad and Tobago, United Arab Emirates, Venezuela.

⁵ Including positions vis-à-vis international institutions other than the BIS.

liquidity. Similarly, capital outflows through the US banks to the Euro-market played a certain rôle in the 1977–79 period of exchange-market unrest.

Nevertheless, in order to prevent the reader from jumping to conclusions it may be appropriate to end this chapter on a note of warning. One crucial point in evaluating the macro-economic impact of the Euro-currency market is that *not* all capital flows intermediated by the market can be considered as additional. A large proportion of such flows serve as a substitute for banks' traditional foreign lending in domestic currency. The size of this substitutional element will not be constant and will depend, *inter alia*, on the existing regulatory framework. Thus, the importance of the substitutional element has undoubtedly increased since the lifting of the US restraints on capital exports in early 1974, and any official curbs on Euro-dollar growth could now be offset in large measure through direct lending out of the United States. This, for example, would seem to be particularly true of the business booked by the US banks through their branches in the offshore centres of the Caribbean.

In other words, as is stressed in the opening paragraph of this paper, the Euro-currency market represents just one aspect – though a very important one – of the internationalisation of banking. An increase in the international interdependence of national financial markets would have come about even in the absence of the Euro-market. Although on intuitive grounds one might therefore be inclined to conclude that the substitutional element in Euro-credit flows is very large indeed, it is well-nigh impossible to make an objective assessment of its scale in quantitative terms, since it is anybody's guess how institutional arrangements would have evolved in the absence of the Euro-market. While it can undoubtedly be said that international bank lending has, on balance, had expansionary effects, some of them welcome and some of them perhaps less so, the causal contribution of the Euro-market to such lending is extremely difficult to evaluate.

Chapter IV

Official deposits in the Euro-currency market

1. The preceding chapter was based on the simplifying assumption that all official reserve accruals are invested in the United States. It is now time to drop this assumption and to allow for the possibility of reserves being placed in dollar or non-dollar form with banks outside the United States.

In order to give some idea of the scale of this phenomenon, it may be mentioned that in mid-1979 nearly \$100 billion of the total official foreign exchange reserves of roughly \$300 billion can be identified as having been held in the broadly defined Euro-currency market. About \$30 billion of these deposits were denominated in currencies other than the US dollar. In addition, identified non-dollar reserve holdings with banks in the national markets of the currencies concerned amounted to roughly \$10 billion, the major part of these funds being deposited with banks in Germany, Japan and the United Kingdom. The figures look equally impressive in terms of changes. Between the end of 1975 and mid-1979 nearly one-third of the total \$140 billion increase in global exchange reserves was deposited in the Euro-currency market. In the case of the non-Group of Ten countries, the proportion actually exceeded 50 per cent.

What are the macro-economic implications of such placements of reserve accruals outside the United States? How do they affect exchange markets, payments balances and global liquidity?

2. Looking first at official reserve placements with banks in national markets outside the United States, let us assume that as a result of Euro-credit flows from the United States to the rest of the world country B's official dollar reserves show an increase of \$100 million, and that instead of leaving these funds in the US market the central bank of country B exchanges the dollars for Deutsche Mark and places the proceeds with a bank in Germany. Let us also assume that the Bundesbank, in order to prevent an appreciation of the Deutsche

Mark, intervenes in the exchange market, thereby adding \$100 million to its exchange reserves, which it leaves in the United States.

What has happened is that the original capital outflow from the United States has given rise to a second outflow, i.e. the shifting by country B's central bank of its newly acquired reserve balances from the United States to Germany. In fact, the macro-economic implications of that secondary outflow will be exactly the same as those of the original transfer: the dollars will be sold once more in the exchange market, Germany will show a corresponding official settlements surplus, its official reserves will go up and so will the economy's monetary base – unless the authorities adopt offsetting measures. What will be different, however, are the statistical effects: total US liabilities to foreign official holders will not increase; instead of having a liability to the monetary authorities of country B, the United States will now simply show a liability to the Bundesbank. By the same token, the United States will *not* record an increase in its official settlements deficit as a result of this second outflow. Country B's economy will not be affected either. Its central bank will simply exchange a financial asset in the US market for a financial asset in Germany. This will have no influence on the country's monetary base or on its balance of payments or exchange rate.

To sum up, the diversification of official dollar accruals into other reserve assets, such as Deutsche Mark balances in Germany, will in some respects duplicate the macro-economic effects of the original capital outflow from the United States: the same dollars will be sold twice in the exchange markets, first against B's currency and secondly against the Deutsche Mark; the official settlements balance of the rest of the world will go up by twice the increase in the US official settlements deficit and so will official reserves and the combined monetary base of countries outside the United States.

Finally, it should be noted that in a certain sense it would not be fully correct to call this whole process a diversification of reserves out of dollars, since the total amount of official dollar holdings will not, in fact, decrease. In a way, country B still holds a claim on the United States, not directly but via the Deutsche Bundesbank which provides

country B with the guarantee that the Deutsche Mark value of its reserves will not decline. The dollar thus remains the ultimate reserve currency and the multiple reserve increase represents double-counting in the sense that it cannot be used to finance a balance-of-payments deficit of the same order of magnitude (i.e. of \$200 million) incurred by the rest of the world vis-à-vis the United States. A genuine diversification out of dollars into Deutsche Mark will occur only to the extent that the official placement of reserves in Germany finances a basic German balance-of-payments deficit. In this case, the ultimate asset counterpart to country B's reserve holdings in Germany will be a claim on Germany and not on the United States.

The outcome will clearly be somewhat different if the German authorities do not intervene in the exchange markets. In this case, the capital inflow resulting from country B's transfer of reserves from the United States to Germany will drive up the Deutsche Mark's exchange rate until the autonomous inflow is offset by induced payments outflows. These induced outflows will spread the secondary reserve increases over the rest of the world. The downward pressure on the dollar, official reserve growth and monetary base creation outside the United States will therefore continue until either the funds are returned to the United States through private capital flows or end up in the hands of monetary authorities willing to hold their reserve accruals in the United States.

3. The same analysis applies to the depositing of official reserve accruals in the Euro-currency market, *provided that the Euro-banks re-lend these funds outside the United States*. Here, too, the dollar will weaken, and official reserves and base money will go up in the rest of the world until the funds find their way into the hands of private or official holders willing, perhaps only after some further depreciation of the dollar, to increase their asset holdings in the United States.

However, there is one important practical difference related to the above proviso: because of the very close links between the Euro-dollar market and the US financial markets a shift of official reserves from New York to, say, London will tend to induce offsetting flows of

private funds back to the United States. In fact, some commentators seem to argue that, in view of the strong participation of affiliates of US banks, the Euro-dollar market is really an extension of the US banking system and that it therefore makes little difference whether the funds are deposited in the United States or in the Euro-market, since in both cases they will tend to end up with the same borrowers.* If that argument were fully correct, official deposits in the Euro-dollar market would have no exchange rate consequences and no expansionary impact on global reserves. They would simply reduce the US official settlements deficit as foreign official dollar assets in the United States were spontaneously replaced by private holdings.

As in many other fields, the truth probably lies somewhere between the two extremes, i.e. official deposits in the Euro-market will to some extent reduce the recorded US official settlements deficit and to some extent inflate official foreign exchange reserves. Thus, an autonomous increase in the supply of Euro-deposits and the resultant decline in Euro-deposit rates will give rise to the following types of reactions:

- (1a) a shift of private deposits from the Euro-market back to the United States;
- (1b) an increase in Euro-bank lending to the United States (or in Euro-lending outside the United States that substitutes for foreign lending from the United States);
- (2a) a shift of deposits from the Euro-market to national markets other than the United States;
- (2b) increased Euro-lending outside the United States (other than that covered by (1b) above).

The 100 per cent. offset theory amounts to saying that the only reaction to a shift of official deposits from the United States to the Euro-currency market will be of types (1a) and (1b), while the increased

* See, for example, G. Dufey and J. Giddy: "The International Money Market", Frontice Hall, Englewood Cliffs, New York, 1978, especially pages 169-178.

availability of funds will not give rise to any new Euro-lending outside the United States and will not displace any other non-US funds from the market. Perhaps this argument would come close to the truth if the interest rate effects of such a transfer of funds from the US financial markets to the Euro-market were symmetrical; however, as argued in section 4 of Chapter III, this is not the case. It is therefore hard to see why, unless the foreign demand for Euro-deposits and Euro-credits were completely interest-inelastic, the only type of reaction would be a reflux of funds back to the United States, particularly at times when the US banking sector is very liquid.

Moreover, even apart from interest rate considerations, it could perhaps be argued that when banks receive new deposits they will ultimately find ways to re-lend them; placing them with other banks is usually considered as only a temporary and second-best solution. Even the affiliates of US banks in the Euro-market (except for the brass-plate companies) will have some leeway for independent decisions, and the amount of funds they are able to lend to end-users will in some very loose way be related to their own deposit base. Moreover, the affiliates of US banks would seem to account for only about one-third of the balance sheet of the narrowly defined Euro-currency market.

Finally, the size of the offsetting reflows to the United States will depend in large measure on the currency in which the official deposits are constituted. While the offsets may indeed be very large in the case of dollar deposits – amounting perhaps to between 60 and 90 per cent. of any increase in such deposits – they are likely to be very much smaller in the case of Euro-deposits denominated in other currencies, since here the links with the US financial markets are much weaker. This will be particularly true at times of considerable exchange rate uncertainty when a decline in Euro-Deutsche Mark rates will result primarily in a widening of the dollar's discount in the forward exchange market rather than in a decrease in Euro-dollar deposit rates. In such a situation it is difficult to see how, without additional downward pressure on the US dollar, transfers of funds from the United States to the non-dollar sector of the Euro-market could induce a major offsetting reflow of private funds to the United States.

Ranking official deposits outside the United States in descending order according to their weakening impact on the US dollar and their expansionary impact on official and private liquidity, one would undoubtedly have to put deposits in national markets first, non-dollar deposits in the Euro-market second and Euro-dollar deposits last, with the impact of the latter perhaps close to insignificance at times of tight credit conditions in the United States.

4. Summing up, it may be said that deposits of official dollar funds in the Euro-currency market will add to world exchange reserves only to the extent that they replace official reserve holdings in the United States. Hence, the conclusion reached in Chapter II still holds good, namely that the Euro-market can bring about an increase in world exchange reserves only when, at times of a US balance-of-payments deficit, it adds to capital outflows from the United States. Moreover, in this context it makes no difference whether the outflow takes the form of private or of official transfers. In statistical terms, however, there is an important difference insofar as an outflow of foreign official funds from the United States will not add to the size of the US official settlements deficit but will tend to reduce it.

Arithmetically, and leaving aside other placement possibilities, the increase in non-US official exchange reserves will always be equal to the size of the US official settlements deficit plus official deposits in the Euro-market. This identity, however, says nothing about causality: if the offsets (flows of the (1a) and (1b) type) were very large, the main effect of the rapid increase in official Euro-dollar deposits in recent years would have been to understate the size of the US official settlements deficit rather than to add to world reserve growth.

Chapter V

Multiplier effects

1. As was argued in Chapter I, a necessary condition for the occurrence of credit or deposit multiplier effects is that by expanding their credits the banks add to the demand for their own liabilities. The liabilities of the Euro-banks are made up of three types of funds: central-bank deposits, funds from banks in the national markets, and direct non-bank deposits, some part of which may have the nature of transaction balances. Correspondingly, the Euro-banks' lending activity will add to the demand for their own liabilities and may be connected with multiplier effects when, on a global basis, it increases official reserves, bank and non-bank liquidity and the level of economic activity in general.

As was explained in Chapter III, such expansionary effects on official and private liquidity will occur mainly when, at times of a US official settlements deficit, Euro-currency lending contributes to capital outflows from the United States. Provided that the foreign monetary authorities are willing to intervene at some stage in the exchange markets, such outflows will increase global exchange reserves and a substantial part of these reserve accruals will in all likelihood be deposited with the banks in the Euro-currency market. Moreover, official intervention in the exchange markets and the resultant reserve increases will tend to lead to an expansion of the domestic monetary base and private liquidities of the countries concerned. Although these expansionary monetary effects result from the Euro-currency borrowing itself, it is conceivable that they will not only discourage further Euro-borrowing but will at some stage lead to reflows of funds to the Euro-currency market.

Whether the Euro-currency inflows and the resultant increase in bank and non-bank liquidity will have an impact (in real or nominal terms) on the borrowing country's level of economic activity will partly depend on the exchange rate effects. If the authorities intervene only after a substantial appreciation of the country's exchange rate

has occurred, the expansionary effects may indeed be very small or nil. But even if there is a substantial increase in national incomes and international trade it is likely that only a minor fraction of the associated increase in non-bank transaction balances will (for the reasons set out in sections 4 and 5 of Chapter I) take the form of new Euro-currency deposits.

Finally, it should be stressed that from the point of view of multiplier analysis there is a basic difference between the placement of official reserve accruals in the Euro-currency market and the redepositing of other funds. The latter simply represent ordinary capital outflows which will limit the upward impact of Euro-currency borrowing on the level of the country's official reserves and private liquidity. From a global point of view, therefore, they are not expansionary but amount essentially to a sharing-out of the expansionary effects of the US deficit to other countries. In fact, to the extent that these reflows to the Euro-market are subsequently channelled on to the United States, they will tend to reduce the size of the US official settlements deficit and its expansionary implications.

By contrast, the redepositing in the Euro-market of official reserve accruals will have no contractionary effect whatsoever on the placing country. But to the extent that the Euro-banks re-lend these funds outside the United States, there will be a secondary capital outflow from the United States and further reserve accruals with all their expansionary effects. As explained in the preceding chapter, this multiplier process will go on until the further depreciation of the dollar and declining Euro-deposit interest rates induce offsetting capital reflows to the United States or until all the remaining funds end up with central banks willing to keep their reserve accruals in the United States.

Exactly the opposite of the above-mentioned effects will, of course, occur when, at times of a US official settlements surplus, the Euro-currency market adds to capital flows to the United States. In this case, the contraction of official exchange reserves and private liquidity will tend to result in some induced withdrawals of funds from the Euro-currency market and in "negative multiplier effects".

2. The likelihood of the supply of Euro-currency deposits being affected will be smaller when the Euro-credit flows add to official settlements imbalances outside the United States. The impact on the capital-exporting and importing countries will in this case tend to be symmetrical and there may be no overall increase but simply a change in the inter-country distribution of official exchange reserves (see Chapter III, section 3). However, this will be different when there is a systematic tendency for the Euro-credit flows to go to countries that have a higher propensity than the lending countries to invest their reserve accruals in the Euro-currency market. In this case, the redistribution of official reserves will be associated with an increase in official Euro-deposits and with the various possible expansionary effects described in Chapter IV. One important example of such asymmetries is that of the Euro-credit flows from the industrial surplus countries, which keep nearly all their reserve accruals in the United States, to the less developed countries, for which the Euro-currency market is a very important reserve outlet.

The situation will be different again when the growth of Euro-credit, instead of adding to payments surpluses and deficits, helps to offset international payments imbalances or gives rise to corresponding increases in international trade flows. In this case, there will be no changes in official exchange reserves and associated repercussions on private liquidity. However, the impact on the world level of economic activity will tend to be an expansionary one, and this higher level of economic activity may in some way add to the supply of Euro-currency funds. In view of the very limited use of Euro-deposits for transaction purposes, the quantitative significance of this effect is, however, likely to remain fairly modest.

Finally, it is necessary to take into account the expansionary effects described in section 2 of Chapter I, which may also have some upward impact on the volume of Euro-currency deposits.

3. To the extent that, in the various ways outlined above, the Euro-banks' lending activities generate an increase in the demand for their own deposit liabilities, there will be scope for a second round of

Euro-credit expansion. The analysis here is essentially the same as in section 3 of Chapter IV. The induced increase in the supply of new funds to the Euro-currency market will exert downward pressure on deposit rates and the easier market conditions will elicit reactions of the following types:

- (1a) a shift of deposits from the Euro-market back to the United States;
- (2a) a repatriation of deposits from the Euro-market to national markets other than the United States;
- (1b) an increase in Euro-bank lending to the United States (or in Euro-lending outside the United States that substitutes for foreign lending from the United States);
- (2b) increased Euro-lending outside the United States (other than that covered under (1b) above).

An increase in the Euro-banks' credit and balance sheets will obviously come about only to the extent that the secondary increase in Euro-deposits gives rise to (1b) and (2b). Effect (1b), however, amounts to a reflow of funds to the United States, which means that the multiplier process will stop right there. Further multiplier effects may occur to the extent that the Euro-banks use the funds for increased lending outside the United States – (2b). However, effect (2a), though it at first prevents an expansion in the Euro-banks' balance sheets, will also tend to have an expansionary impact on the countries concerned and may thus at a later stage contribute to some induced increases in Euro-deposits. In short, if the links between the US financial markets and the Euro-markets are quite close and if the demand for new Euro-credits from outside the United States is rather inelastic, the second round of Euro-credit expansion will be quite small and the Euro-credit multiplier effects correspondingly insignificant.

4. To sum up, it may undoubtedly be said that the supply of funds to the Euro-currency market will in some degree be related to the

level of global official exchange reserves, private liquidity and world economic activity. By affecting these aggregates the banks in the Euro-market will in some way influence the demand for their own liabilities. However, this link between the Euro-banks' lending activities and the supply of new funds to the market is much too loose and complex to be cast into a formal multiplier relationship. While Euro-credit growth may at times be associated with multiplier effects, their size and even their sign will depend in large measure on the geographical composition of the Euro-currency flows, their balance-of-payments impact, central banks' exchange-market intervention policies, national authorities' reactions to the monetary effects of capital inflows, interest rate elasticities, etc. All these parameters are themselves subject to continuous change.

Moreover, while a scenario is conceivable in which multiplier effects could become important – for instance, if the Euro-currency market were to boost capital outflows from the United States with the resultant foreign exchange accruals being redeposited in the Euro-currency market, while at the same time the links between the Euro-currency market and the US financial markets were loosened by, say, official controls – it seems that on average the scale of such effects will remain fairly modest.

Finally, it must be added that, as already suggested in scenario (c) in section 5 of Chapter I, most of the multiplier effects associated with Euro-currency lending based on capital outflows from the United States will occur within the individual national economies themselves. Except for official deposits, the reflows of funds to the Euro-market are not likely, from a global point of view, to exert additional expansionary influences (apart from those mentioned in section 2 of Chapter I); instead, their main impact will be to redistribute internationally the expansionary effects of the US capital outflows. To the extent that this redepositing of funds in the Euro-market induces offsetting capital flows to the United States, as will normally be the case, its impact will in fact be a contractionary one. Multiplier effects within the Euro-market itself, with additional expansionary macro-economic consequences for the world economy as a whole, will occur only

insofar as the Euro-banks' lending activities give rise to further shifts of funds out of the United States. Leaving aside confidence factors, this can only happen if the Euro-currency market attracts the official exchange reserve accruals resulting from its own lending activities.

Chapter VI

Factors determining the growth of the Euro-currency market

1. If endogenous credit multiplication is not a key factor, what else can explain the rapid growth shown by the Euro-currency market even in years when domestic credit and the growth of world economic activity have been relatively slow?

One of the main reasons for the emergence and rapid development of the Euro-currency market has been its freedom from prudential and macro-economic controls as well as its fiscal advantages. These freedoms and privileges induced the banks in the national markets to conduct an increasing share of their international business and even part of their domestic wholesale business through their affiliates in the Euro-currency market. This trend towards "extra-territorialisation" has not yet come to an end and will probably continue in the near future to contribute to the high growth rates recorded by the Euro-currency market.

Moreover, partly as a result of certain structural factors, large commercial banks in some of the major industrial countries have been faced with increasing competition from other groups of banks and from the domestic short-term security markets, while at the same time credit demand from their select customers, viz. the very large industrial corporations, has been rather weak. Thus, these banks have been prompted to look abroad for the traditional wholesale business which they had difficulty in finding at home, and not too surprisingly this trend has been most pronounced in the case of those groups of banks whose domestic competitiveness has been impaired by high non-interest-bearing reserve requirements.

A second broad set of influences has been the changing pattern and scale of international payments imbalances. Reflecting its rôle as a channel for international capital flows, the rate of growth of the Euro-currency market is related to the size of current-account imbalances and concomitant financing needs. In fact, the oil price

increases in late 1973 resulted in current-account surpluses of hitherto unknown proportions for a small group of oil-exporting countries and corresponding balance-of-payments deficits in much of the rest of the world. Moreover, the disequilibria were aggravated by the fact that the oil price increases, together with the earlier transition to floating, had a kind of polarising effect on the oil-importing countries. A number of relatively well managed economies were able to overcome the negative consequences of the oil price increases quite rapidly and in some cases even experienced a widening of their current-account surplus, which implied correspondingly larger deficits and external financing requirements for the other oil-importing countries.

Another influence that particularly added to the financing requirements of the oil-importing developing countries was the declining relative weight of direct investment flows and official capital aid at a time when the oil price increases and economic slack in the industrial countries were tending to magnify these countries' current-account deficits.

In short, unprecedentedly large balance-of-payments financing requirements did exist and the Euro-currency market, with the help of roll-over and syndication techniques, was well equipped to play a leading rôle in providing this finance, even in a climate of uncertainty and inflation.

2. There is a general consensus that the contribution of the Euro-currency market towards financing the vast international payments imbalances associated in large measure with the oil price explosion was a positive one and helped to prevent a further deterioration of the world cyclical climate and a general reversion to protectionism. Nevertheless, the apparent ease with which the international banking sector has not only financed the balance-of-payments shortfalls but has permitted deficit countries to build up their gross reserve positions has caused some disquiet. Another source of concern has been the continued rapid growth of the Euro-currency market despite the sharp contraction in the OPEC surplus and the emergence of a massive US current-account deficit, both of which should have reduced the financing requirements of the rest of the world.

It is feared that the very easy international credit conditions and fierce competition by the Euro-banks for new borrowers – both reflected in the sharp squeeze over the last two years in the banks' lending margins – could lead to over-borrowing and excessively expansionary policies in the deficit countries. Moreover, it is argued that this could entail considerable inflationary dangers once there is a return to full employment in the major industrial countries or, conversely, that it could threaten the solvency of borrowers and the health of lending banks in the event of a serious deterioration in the world cyclical climate. Finally, the rapid growth of the Euro-currency market has been associated in the minds of some analysts with the instability in the exchange markets.

3. These various fears have received analytical underpinning by a school of thought which argues that the growth of the Euro-currency market is predominantly demand-determined.* This argument, which is based on the close correlation between interest rate movements in the United States and the Euro-market, seems to imply that by offering marginally higher deposit rates the Euro-banks can elicit virtually unlimited capital outflows from the United States enabling them to meet any new “worthy” or “unworthy” credit demands. Taken to its extreme, this theory would imply a virtually horizontal supply schedule and a steeply upward-sloping demand curve, which means that changes in the pace of Euro-credit growth would be determined mainly by shifts in credit demand and not by shifts in the supply schedule caused, for example, by a rise in US interest rates. From here it is only a small step to the conclusion that the Euro-currency market is an engine for US payments deficits, dollar weakness and world inflation.

Although this theory contains important elements of truth – in particular the close links between the dollar sector of the Euro-market and the US financial markets cannot be denied – it suffers from over-simplification. Perhaps the shapes of the demand and supply schedules

* See, for example, J.R. Heller “Assessing Euro-market growth: why the market is demand-determined”. *Euromoney*, February 1979.

that it implies come relatively close to reality if the price variable under consideration is the nominal level of Euro-dollar deposit rates, with the lending margins charged by the banks being assumed constant.

The floating interest rate technique has very much reduced the importance of the absolute level of interest rates for borrowers; moreover, when these interest rate levels reflect, above all, US inflation rates, their real component may be very small. In fact, looking back over the past eight years or so, it would appear that, after adjustment for the rise in the dollar prices of internationally traded goods, real Euro-dollar deposit rates were mostly negative or close to zero. The assumption of an inelastic demand schedule may therefore be a fairly realistic one.

As regards the supply of Euro-currency funds, what was said in section 3 of Chapter III would tend to confirm the view that fairly small changes in Euro-deposit rates can, particularly when there is considerable slack in US domestic credit demand, elicit large outflows of funds from the United States without having a pronounced effect on US domestic monetary conditions.

Nevertheless, there is an important consideration that casts doubt on the validity of the assumption of a nearly perfectly elastic supply schedule. While the Euro-banks are certainly willing to cover any temporary shortfall of funds in the US interbank market, it is not so clear whether they would be prepared to finance the bulk of their longer-term credit growth in that way. In other words, it is quite likely that in the long run the growth of the Euro-banks' credit portfolio depends in large measure on the expansion of their own deposit base, even if there is virtually "unlimited" availability of funds in the US interbank market. Indeed, this would seem to be confirmed by the observation that the bulk of the Euro-market's growth (excluding New York business booked through the offshore centres) has always been generated by funds from outside the United States, with US interbank funds assuming only marginal and temporary importance. Particularly at times of exchange rate uncertainty when the forward exchange markets tend to be rather inelastic, it is quite unlikely that the supply of such non-US funds will be very responsive to changes in

Euro-deposit rates. Under such conditions interest rate changes will be quickly offset by forward rate movements. Moreover, the supply of funds from outside the United States will be strongly affected by balance-of-payments considerations and conditions; once outflows of resident funds to the Euro-currency market become too large, the countries concerned are likely to allow domestic interest rates to rise.

The existence of a nearly vertical demand schedule and a nearly horizontal supply curve becomes particularly unlikely if the price variable considered is not the nominal level of Euro-dollar deposit rates but the banks' lending margin (adjusted for front-end fees), which can, moreover, be taken as a proxy for market conditions in general. In contrast to the absolute level of interest rates, these margins will (except for changes stipulated in the loan contract and refinancing possibilities) remain fixed over the life of the loans and therefore act as a stronger deterrent to borrowers. Moreover, with "real" Euro-dollar deposit rates usually close to zero or even negative, the margin coming on top of the nominal deposit rate may quite often be the only real element in the nominal interest cost. The likelihood of a fairly elastic demand schedule for bank credit (with the lending margin as the price variable) is confirmed, in addition, by the fact that at times of low lending margins and easy credit conditions the number of countries having recourse and access to Euro-currency borrowing increases and that there is a larger amount of "precautionary" borrowing with a view to strengthening the countries' gross reserve positions. Similarly, the Euro-banks' willingness to perform intermediary services will, other things remaining equal, certainly depend on the earning margins obtainable; the narrower these margins, the smaller the amounts individual banks can risk and the more restricted the number of banks capable of participating in the loans.

Taking into account these various considerations, the sharp decline in the banks' lending margins and the more general easing of market conditions over the last two years or so strongly suggest that the rapid growth of the Euro-currency market during this period was predominantly supply and not demand-determined. In other words,

the pronounced squeeze on the banks' earning margins would seem to indicate that the vigorous expansion of international bank credit was partly the result of the liquidity-creating effects of the US balance-of-payments deficit and not – as the demand-determined theory would have it – primarily the cause of the money outflows from the United States.

4. The main weakness in the theory that the growth of the Euro-currency market is predominantly demand-determined is that it reduces the market to a computer programmed simply to arbitrage out international interest rate differentials. It is crucial to bear in mind that banks in the Euro-market are, with few exceptions, affiliates of the large commercial banks in the national markets and that their business strategies cannot be considered independently of the condition of their parents. Thus, the willingness of banks to expand their international business will depend in large measure on two things: the state of domestic credit markets and risk considerations.

Banks will be eager to expand the business of their affiliates in the Euro-market when domestic liquidity is ample and domestic credit demand is weak, offering few opportunities for the expansion of profits and balance sheets at home. If, on the other hand, domestic credit demand is lively and liquidity tight, capital constraints and the danger of an excessive stretching of gearing ratios will cause the banks to exercise more reserve in their international business. Moreover, banks usually pursue a policy – certainly not inconsistent with profit maximisation in the longer run – of meeting the borrowing requirement of their domestic customers first, even if the short-run incentives, such as earning margins, are stronger in the international field. Even in the case of the United States, where capital outflows have no direct impact on the economy's monetary base, the banks' foreign lending will reduce their scope for domestic credit expansion and, by adding to the growth in the banks' balance sheets and their monetary liabilities, may provoke tightening action by the monetary authorities.

Secondly, the banks' willingness to expand their international loan portfolio will depend on risk considerations. This does not preclude

the possibility of temporary spurts in international lending activity, but after a while the banks will find not only that the weight of international risks in their portfolios has increased but that the quality of these risks has deteriorated as a result of the rapid increase in the external indebtedness of certain groups of countries.

Moreover, these various stabilising mechanisms could be strengthened by a tightening of bank supervision, based on consolidated reporting requirements embracing both the banks' domestic offices and their affiliates in the Euro-market.

All this is not to deny that demand factors can have an important influence on the growth of the Euro-market and the pace of international bank lending in general, but it suggests that supply factors may at times be of equal or even greater importance. Needless to say, in the international field supply and demand stimuli will quite often coincide, the surplus of one group of countries usually being the deficit of another group of countries.

Chapter VII

The problem of “overhangs”

While there can be little doubt that the growth of international bank lending has at times given rise to significant expansionary effects which were sometimes welcome but at other times unwelcome, there remains the question of whether the outstanding volume of Euro-currency deposits and credits constitutes a worldwide threat of inflation and exchange rate instability. In fact, one concern voiced quite frequently is that the funds held particularly in the dollar segment of the market are hanging like a rain-cloud over the world economy ready to drown any internationally co-ordinated monetary stabilisation effort in a flood of dollars and inflation.

This argument overlooks the fact that *all* the funds held in the Euro-currency market have as an asset counterpart the Euro-banks' claims on the countries of the individual borrowers. As already stressed in section 1 of Chapter II, the banks' Euro-currency assets cannot be held in an international vacuum, but are all placed in national markets and are part of these countries' liquidity and credit supplies. Large-scale withdrawals of dollar deposits from the Euro-currency market, *unless offset by additional capital outflows from the United States*, would force the Euro-banks to call in their loans and would ultimately put a squeeze on the debtor countries. In these debtor countries the necessity to repay would exert strong deflationary constraints, while the need to buy dollars in order to effect repayment would boost the dollar's exchange rate against their currencies. Thus, it is by no means certain that in the *absence of additional capital outflows from the United States* the global impact of such a withdrawal of dollar deposits would be an inflationary one or would lead to a general weakening of the US dollar.

The “overhang” argument would admittedly be valid in large measure if the asset counterpart of the deposits held in the Euro-currency market were claims of the Euro-banks on the United States. Withdrawals of these funds would have no major tightening effects

on the United States itself but would swamp the rest of the world with dollars and liquidity. However, the fact is that only a small fraction of the Euro-banks' assets is held in the United States (see table on pages 40 and 41) and a substantial part of these funds represents working or compensating balances that cannot easily be drawn down.

On the other hand, a considerable proportion of international bank lending is financed with funds from the United States. The withdrawal of these funds would amount to a capital reflow to the United States and would therefore tend to strengthen the dollar and would have a deflationary impact on private and official liquidity in the rest of the world. The impact on monetary conditions in the United States would depend on the ownership of the funds. If the reflow took the form of the repatriation of US non-bank funds, the degree of monetary tightness in the United States would scarcely be affected (for the reasons explained in section 4 of Chapter III). If the reflow were in the form of US banks calling in their foreign loans, the resultant contraction in the banks' loan portfolio and in US monetary aggregates would increase the banks' domestic lending potential and would tend to exert downward pressure on US interest rates. However, the monetary base of the US economy would not be affected in either of these two cases.

In short, the bulk of Euro-currency credit outstanding consists of credits to non-US residents. Even if these credit relationships were denominated in dollars and if the ultimate suppliers of these funds were non-US residents, they would *not* represent genuine dollars that could be sold in the exchange markets *without additional capital outflows from the United States*. The monetary and exchange rate effects of a withdrawal of such dollar-denominated funds from the Euro-market would be largely offsetting as between the creditor and debtor countries. Moreover, on a factual level it should be noted that even at times of severe exchange rate pressures there has been no evidence in the past of generalised withdrawals of dollar-denominated funds from the Euro-market by non-US residents.

While the volume of Euro-credit outstanding does not pose an inflationary threat for the world as a whole, it cannot be denied that

the increased international mobility of capital brought about by the Euro-currency market may aggravate problems for individual countries. In particular, if a country's bank or non-bank sector holds large net claims on banks abroad, the repatriation of which cannot, as a rule, be forbidden, the reflow of these funds may confront the country with serious inflationary dangers. This does not mean, however, that the country will be helpless; after all, floating does offer some protection. The capital inflows will push up the country's exchange rate and with reasonably stable exchange rate expectations this appreciation will in time induce offsetting capital outflows, thereby preventing any domestic liquidity injection. Even if the exchange markets were too demoralised to find their own equilibrium and appreciation created expectations of further appreciation, the authorities could put off intervention until the rise in the country's exchange rate, through its deflationary impact on prices and aggregate demand, had removed the inflationary sting from liquidity creation. Of course, excessive appreciation could itself entail major structural problems and serious damage for the country's economy.

But even from a global standpoint the theory of the "overhang", despite its weakness, contains in a certain sense one important element of truth. If there were large-scale withdrawals of dollar deposits from the Euro-currency market, the resultant rise in Euro-dollar rates would – in view of the close links between the Euro-dollar and the US financial markets – give rise in the first instance to offsetting capital outflows from the United States. And it is these induced capital outflows from the United States, and not the funds held in the Euro-currency market, which would increase the net supply of dollars in the exchange market and tend to lead to liquidity creation in the rest of the world. However, such capital outflows would, at times of flagging confidence in the dollar, occur in large measure also in the absence of the Euro-currency market. Here again the market has not given rise to any new phenomena, but may at most have added to the scale of existing types of capital flows.

The fact that the destabilising influences could only result from additional capital outflows from the United States implies that the

real “overhang” consists not of dollar-denominated Euro-deposits but of liquid assets held in the United States both by US residents and by private and official non-residents. The total amount of these liquid assets in the United States will depend primarily on the size of the US monetary base, a factor which is under the control of the US monetary authorities, who are, moreover, in a position to influence capital outflows through more direct measures. As was argued in Chapter III, the Euro-currency market has no influence on the size of this base and therefore cannot push the US monetary authorities out of the driver’s seat.

To answer the question asked at the outset of this paper: although the Euro-currency market is not subject to centralised control by a single monetary authority, the fact that all Euro-deposits are held by residents of individual countries and that the whole asset counterpart represents claims on residents of individual countries means that the macro-economic performance of the Euro-currency market will depend in large measure on developments and policies in the principal national markets. The Euro-currency market acts, therefore, primarily as an international transmission mechanism and it is hardly conceivable that, on its own, it could exert major inflationary pressures on a global scale. This is not to deny that, by providing escape routes, the market may tend to blunt the effectiveness of certain domestic monetary policy instruments and that its contribution to international capital mobility may at times exacerbate conflicts between external and domestic requirements. However, these drawbacks could in part be avoided through greater international co-ordination of policies and instruments. Moreover, against the disadvantage of reduced national autonomy in the field of monetary policy must be set the contribution of the Euro-market to the financing of the oil-induced balance-of-payments deficits, and the market’s positive impact on international trade, investment and economic development.

