

International Financial Intermediation: Implications for Bankers and Regulators

I. Introduction

The growth of international financial intermediation through the Euromarket and other regional financial centres is one of the most remarkable phenomena of the last 15 years. Attracted by the growth and profit potential or merely imitating their competitors, more and more financial institutions have entered this new field and several of them have in the process set up branches or subsidiaries in the main international financial centres.

Both public regulators and bankers often have problems in fully understanding the peculiar nature of international financial intermediation. Consequently, regulators tend to regard the phenomenon as, in the main, speculative and destabilizing. Bankers, for their part, frequently misinterpret its potential and underrate the risks involved.

The purpose of this article is first to elucidate the nature of international financial activity — through a model of financial intermediation — and then to underline:

a) the potential benefits from and risks inherent in the various activities, and

b) their healthy and destabilizing macroeconomic impact.

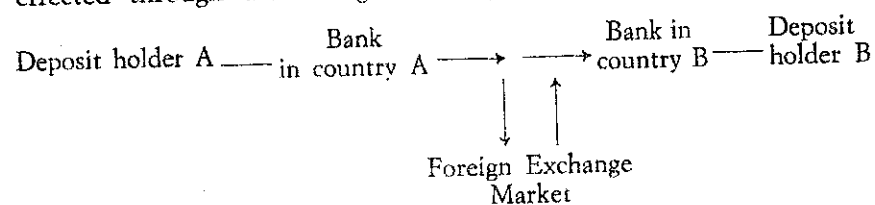
A deeper understanding of the international financial mechanism should benefit both bankers and regulators. Bankers will acquire a general framework helping them to manage their international operations, and regulators in enforcing positive behavior on the part of the banks and in discouraging destabilizing operations by them.

II. International Financial Activities

Traditionally, banks perform at least two basic functions: a monetary one, by transferring funds through checking accounts, and an intermediation one, by recycling funds from surplus units to deficit units. International financial activity, as an extension of domestic operations, also combines these two functions. Here I will concentrate on the latter. I will, however, comment on the monetary function in order to place the subsequent considerations in perspective.

III. The Monetary Function in an International Setting

Banks discharge a monetary function in the international context, just as they do on the domestic scene. If they did not do so, businessmen and individuals would have to pass cash from hand to hand. Banks make international payments by transferring balances from a checking account in their country to another one abroad. This transfer often also involves a currency operation effected through the foreign exchange market, as shown below:



The currency transformation may be carried out on behalf of customer A or B by bank A or B, depending upon the terms of the commercial transaction.

In the domestic markets it is considered that payment through checking accounts creates new purchasing power via the multiplier effect. Does something similar take place in the international monetary function? Is more money created just because the payments are made through banks rather than from hand to hand?

The answer would be in the affirmative only if new monetary base were created or if the deposits moved from countries with higher liquidity reserve ratios to others with lower reserve ones.

It has been contended that the shift from high reserve countries to low reserve ones is automatic in international financial activity, since substantial funds move to centres with no reserve obligation. This argument, however, misses an important point: demand deposits, the basic component of M_1 , are practically non-existent in offshore financial centres. Checking facilities are always of necessity located in the country issuing the currency in which the deposit is denominated. Thus, in the case of US dollar deposits, the checking accounts are held and all the clearing operations are effected in the United States. The deposits in the offshore market are interest-bearing time deposits. In short, statistically speaking, when banks perform pure across-the-border payments, they do not expand world-wide money supply. Of course they change the monetary base *inside* the countries affected by the payments, and hence the money supply therein. In order to control any resulting disturbances each country adopts its particular policy. Some of them control every payment or collection; others maintain total freedom for transfers of funds in commercial transactions, but control the money transfers generated by capital movements; others, finally, have no foreign exchange control.

IV. International Financial Intermediation

International financial intermediation transfers funds from surplus units (savers) to deficit ones (borrowers), a process which is not dissimilar from the domestic one. However, there are a number of differences between the two cases:

1. structure of the operations and the risks involved;
2. intermediation chain; and
3. structure of the markets.

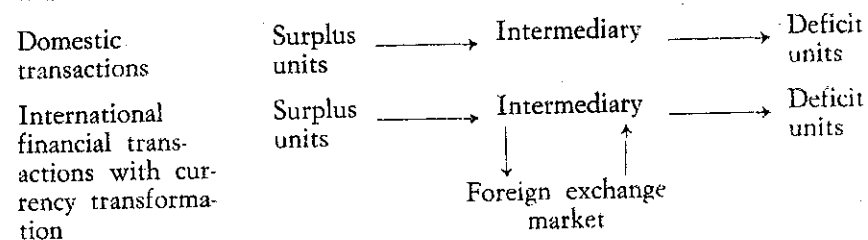
1. *The Structure of the Operations and the Risks Involved*

International financial operations involve:

- (i) a transfer of funds from surplus units resident in one country to deficit units located in another;
- (ii) and/or a conversion of funds raised in one currency into funds expressed in another currency.

The currency transformation is not a necessary characteristic of the international financial intermediation: funds can be raised in one country and lent to another in the same currency. However, currency transformation is effected either directly by the bank on its own account or by the ultimate depositors or borrowers. When no such transformation is needed, this is because the original depositors own foreign currency which they did not exchange into their domestic currency, or because the final borrowers need the proceeds of the loan to pay for obligations denominated in a foreign currency.

The currency transformation generates foreign exchange business for the bank if this is on behalf of the customers. If the bank itself raises the funds in one currency and lends them in another, the structure of the transactions differs considerably from that of the domestic ones, as shown in the figure below.



Lending to non-residents and/or in foreign currencies creates new risks for bankers.

These risks are either incremental or different in quality. They are incremental when they are of a commercial nature. Lending to units outside their own sphere means less information, less control over the loans, and proportionally higher risks from inadequate credit evaluation and loan management.¹

¹ See, P. HENRY MUELLER, "A Conspectus for Offshore Lenders," in *Offshore Lending by U.S. Commercial Banks*, ed. by John Mathis, Bankers Association for Foreign Trade and Robert Morris Associates, 1975.

But two other risks are peculiar to international financial transactions:

1. country risk; and
2. foreign exchange risk.

The former is related to the location of the borrower in a country other than that of the lender. Political shake-outs, foreign exchange crises, wars and other events may then transform an otherwise sound commercial risk into a bad risk or a loss because of factors outside of the borrower's control.

The latter risk is possible when the loan is denominated in a currency other than the one used in the funding. Since the bank has to go through the foreign exchange market at two different moments in time, the possibility of a change in foreign exchange rates could dramatically alter the prospects of the operation. Taking or hedging this risk becomes a key factor which demands additional shrewdness and expertise on the part of the banker.

Another important characteristic of activity in international financial markets is its wholesale nature.

Consequently, it is less labour intensive, and more "expertise intensive." The single risks incurred are larger, the possibility of diversifying them via an insurance-type of portfolio more limited. Altogether, it is a different type of activity from the one practised in domestic markets. This is clearly demonstrated by the volume of assets per employee, which is much higher in offshore banking than in domestic operations.

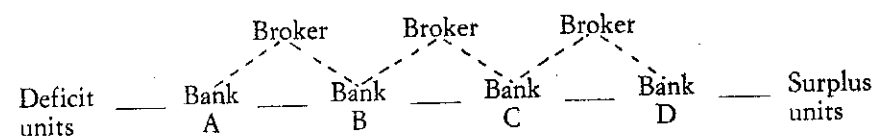
2. *The Long Chain of Intermediation and Large-Scale Interbank Activity*

The simplest chain of intermediation is composed of the surplus unit, the intermediary and the deficit unit. Even in domestic markets, part of the funds to be recycled do not reach the deficit units in a single step. They move from the bank which received the original deposits through an interbank account or the interbank market to another bank which lends them to the final borrower.

Because of the "distance" between the savers and the borrowers in international financial activity, the chain of intermediation may be very long and interbank activity considerable. By distance

I mean the reciprocal information gap, geographical separation, the difference in social, political and legal systems and dissimilar business practices.

The multiple chain of intermediation can be represented as follows:



In reality, the deficit unit may be an oil company in Iran depositing in an Iranian bank, which in turn places the funds in a bank located in London; the funds may then be transferred to another bank in New York, which lends them to a Brazilian bank which finally finances the ultimate borrower in his country. As is shown in the picture, the contact between two banks is often facilitated by a broker; in some markets, this service is unavoidable, or even compulsory.

The existence of a multiple chain of intermediation has substantial implications as regards the nature of international financial activity.

3. *The Different Roles in the Chain of Intermediation*

Scholars have sometimes questioned the usefulness of multiple intermediation in domestic markets. There is a tendency to regard this phenomenon as inefficient, since it seems to imply larger global spreads between savers and final borrowers. But this is not always true. Larger or smaller spreads depend upon the competitiveness of the markets: if multiple intermediation facilitates spatial arbitrage, it will enforce rather than hinder competition.

Whatever the situation in the domestic markets, international intermediation takes place at lower total margins in spite of the many intermediaries. But a more important point is that different roles may be played along the intermediation chain — those of collecting final lending, interbank intermediation, “transmission”, and speculation.

a) *The Collecting Role*

Usually the funds which are transferred along the intermediation chain are large and the transactions of a standard nature. But, at the beginning of the chain, there are banks collecting funds from the ultimate surplus units almost on a retail scale by tailoring instruments, maturities and the like to the customers' needs. The banks which perform this function have usually developed marked competence in retail funding and excellent credibility, thus attracting surplus units. If they do not have enough lending outlets, they pass the excess funds, “packaged” in larger amounts and different terms, to other banks which are short of ultimate deposits. Even when they do not lend to the ultimate customers, these banks effect a certain degree of transformation which calls for compensation. The extent of this compensation depends upon the relationship between the supply and demand of loanable funds. The banks which specialize in this role may be labelled “deposit banks.”

b) *The Final Lending Role*

For a number of reasons, some banks can be placed mainly at the end of the intermediation chain: this situation may be due to historical ties with companies, to a superior expertise in credit evaluation, to a network of banking facilities placed in, or in proximity of, strong borrowing areas, or to underdeveloped retail funding. Banks with head offices in “deficit countries” have this character by nature and are at the end of the chain. The banks which do the final lending perform a substantial transformation function, since they use the funds received on standard terms in the interbank market to tailor loans to the customers' needs. They also bear the risk involved in the final lending. The banks specializing at the end of the intermediation chain must, of necessity, have marked credit evaluation capabilities as well as a good service for money market funding.

c) *The Interbank Intermediation Role*

Because of the gap between the surplus units and the deficit ones in international financial activity, in between the depositing banks and the lending banks there are one or more banks which may effect in the interbank market:

1. a maturity transformation by buying interbank money short term and placing it in the interbank market at longer term;
2. a currency transformation by accepting interbank deposits in one currency, exchanging them for another currency in the foreign exchange market, and replacing them in the interbank market;
3. a spatial transmission or arbitrage by funding in one geographical interbank market and lending in another;
4. a "packaging" function by raising the funds in certain amounts and placing them in larger or smaller amounts; and
5. a risk transformation by taking funds from banks of higher standing and placing them with banks of lower standing.

Banks which place themselves in the middle of the intermediation chain may discharge one or another or a mix of the above functions. They are banks to banks. The larger the credit transformation, the higher the added value they can build into the spread.

d) *The "Transmission" Role*

In some instances, a bank may enter the intermediation chain without playing any of the above roles. Its only role is that of transmission; it is very similar to that of brokers, except from the legal point of view: it connects the depositing bank with the lending bank through an intermediation instead of a brokerage contract.

Practically speaking, this is the case when banks do not perform any of the transformation functions mentioned above. They simply exploit a contingent information advantage over both the depositing and the lending banks by passing the funds, unchanged, from one to the other.

Understandably, the spread for such activity will be more or less in line with the brokerage commissions.

e) *The Speculation Role*

In economic analysis, it is always difficult to argue about speculation as distinct from any other activity if based on expected economic results. Even more difficult is to identify speculation in the financial activity.

However, there are cases when banks enter the intermediation chain, not to perform a transformation which is "functional" to the transfer of fund to the ultimate borrower, but just because they expect to make a profit through a maturity or a currency transformation based on expected interests or foreign exchange rate movements. An example of this behavior occurs when a bank borrows funds at long term and lend them at shorter term in the interbank market, because it bets on rising interest rates. Similar operations may take place by switching from one currency to another. While this could help to avoid abrupt changes in interest and foreign exchange rates by smoothing out the tips, it can also be purely speculative. In fact, the positions taken by strong institutions can determine the expected results which would not otherwise materialize: in short, they become self-fulfilling predictions.

The possibility of banks entering financial intermediation with speculative objectives worries public regulators who see the possible destabilizing effects of such operations. But bankers have also to monitor this kind of activity carefully, because it is risky. It is worth while observing that, without a good management control system, speculative positions can be taken by peripheral units almost without the headquarters knowing it.

4. *The Deposits Pyramid*

Since, at every transfer from one bank to another, new liabilities and assets are created, a multiple link intermediation model leads to a multiplication of financial assets which could be easily misinterpreted.

This phenomenon differs from the domestic type of interbank business, which is fundamentally a two-bank affair often and mainly determined by liquidity reasons. In international activity in a unique deposit chain with many links, the successive interbank depositing and redepositing has basically an allocative function. It allows a rapid and efficient recycling of funds from banks with excess deposits to banks — often in very distant parts of the world — with excess loan demand.

This pyramiding of deposits creates a special statistical problem: total offshore deposits, as a matter of fact, are equal to the

original deposits times the number of links in the chain. They represent the gross size of the market. In domestic systems, since there is a single clearing house, the interbank deposits are settled on consolidation. At the international level, interbank settlements of offshore deposits take place through various banks in the countries issuing the currency in which these deposits are denominated. For this reason, consolidation is not possible, nor is the determination of the volume of the original deposits.

Pyramiding of deposits creates the illusion of money creation. But this is true only statistically. It is like a relay race, where, to reduce the time needed to bridge a distance, a baton is passed by one athlete to another.

Similarly, the multiple intermediation chain speeds up the velocity of money by passing it quickly from surplus to deficit units. But it is not money creation, as is sometimes maintained.

Even the question of the lack of reserve requirements in international financial markets should be reconsidered in the light of the above considerations. For, since a large part of transactions are interbank, the application of reserve requirements would practically prevent the multiple intermediation chain from carrying out its function of connecting widely separated surplus and deficit units. In short, the pyramiding of deposits is not necessarily a bad thing.

5. *Legal and Actual Financial Flows*

In the domestic market, the regulatory environment is homogeneous. Legal and actual financial flows therefore coincide. A loan is usually booked where it is arranged. In international financial activity, funds can follow different potential routes to reach the final borrowers. Each one of these routes has peculiar fiscal and legal environments as well as political safety. Sometimes the best route in economic terms implies the booking of loans in a country which is not the best place to carry on the actual financial activity. Thus, there is a geographical split between the legal flows of funds (the booking) and the operational activity, that is the place where the financing packages are put together.

This peculiarity is essential for an understanding of both the global organization of international financial markets and the framework in which international bankers work out their decisions.

Together with the previous observations, the split between the legal and actual location of financial activities helps us to understand the proliferation of international financial centres.

6. *The Different Nature of the Various International Financial Centres*

In the last decade, a number of new international financial centres have emerged. This has happened contemporaneously with the development of sophisticated communication systems which should have worked against geographical dispersion.

The concept of a market as a place where buyers and sellers foregather has lost its meaning in an age of telexes, efficient telephones, telecopiers and the like. Theoretically, in this new environment, a global market should have developed instead of numerous regional markets. What is the reason for this unexpected trend? The split between the legal and actual location of financial activities partially explains the present network of international financial centres: it justifies the existence of the *booking centres* as the places where loans arranged elsewhere are legally booked. For example there are the Bahamas, Guam, New Hebrides, and the Dutch Antilles. The long intermediation chain with the potential different roles which can be played along the line explains the emergence of other "specialized" financial centres: the deposit centres, the funding centres, the arranging centres.²

A deposit centre emerges typically at the beginning of the intermediation chain. It owes its existence to its proximity to the surplus units. Bahrain is an example.

A funding centre is mainly placed in the middle of the intermediation chain. Funds come mostly from the interbank market and go predominantly to banking institutions. It performs a relay function and owes its existence to an entrepôt position. Singapore is often quoted as a funding centre, although it is rapidly developing into an all-function centre.

Finally, there are centres where financing packages and other financial business are arranged, without being booked there for

² See, J.B. CAQUETTE, "Time Zones and the Arranging Centres," in *Euro-money*, July 1978, pp. 48-54.

fiscal or political reasons. Hong Kong partially fits into this definition. An arranging centre is typically placed at the end of the intermediation chain and owes its existence to the proximity to ultimate borrowers, both in geographical and time zone terms. Of course, in all financial centres there are transactions which cross the whole intermediation line. The specialization defined above is based on the predominance of one type of activity or another.

If the framework described so far holds good, it is possible to hypothesize that, in their strategic posture, banks, at least partially, conform to the predominant specialization of their location. This issue will be examined below.

7. *The Structure of the International Financial Markets*

The transfer of funds from surplus units to deficit units located in different countries and/or in different currencies may take place:

- 1) directly in the international financial markets — usually with the support of special institutions such as the merchant banks;
- 2) indirectly through intermediaries such as commercial banks.

As with domestic operations, this financial recycling may be short, medium or long term. But there are a number of aspects which differentiate the international financial market from the domestic ones. Here I will comment only on two aspects:

1. the fleeting or non-existent distinction between commercial and investment banking and between short-term and long-term financing;
2. the limited regulation.

As regards the first aspect, in many countries commercial banks are not allowed to extend their operations beyond short term financing; in others, they are permitted to finance long-term, but are barred from investment banking.

In very few countries is universal banking the norm. In international markets, these barriers do not exist, and institutions compete across all these segments.

As a consequence, the internationalization of a bank very often leads, not only to new markets, but also to completely new business. The managerial implications of this strategic change are meaningful and often underestimated. The competitive system in which a bank operates when it enters the international scene is quite different in structure and extent from the domestic one.

The limited regulation regards liquidity reserve ratios, capital adequacy ratio, interest rates ceilings, foreign exchange transactions, and the like. The absence of regulations, as opposed to the widespread control systems in most national markets, creates a peculiar competitive situation and the risk for banks to "overplay". This behaviour has already caused some famous victims, especially in foreign exchange business.

V. **The Actual Functioning of a Branch Operating in International Financial Centres**

1. *Money Desk Branches*

In order to participate in financial intermediation, many banks have opened branches or subsidiaries in the major financial centres outside the jurisdiction of the parent bank. How do these units operate, and what kind of activity do they perform?

While these units have different strategies depending upon the strengths and weaknesses of the parent bank, they have certain aspects in common. First of all, they are very different from the traditional foreign branches located outside the international financial centres. These ones are heavily involved in trade financing, if not in retail banking as well. They often have banking facilities on the street. Although they must rely for funding on the interbank market too, this is mainly a two-bank affair.

Branches or subsidiaries in international financial centres, on the contrary, are fundamentally wholesale in nature. Furthermore, all these banks, for one reason or another, have to develop strong money desks: the "depositing" banks in order to place the funds at the best rates; the "lending" banks in order to fund the operations at the minimum rates; the "trading" banks in order to

manage efficient operations on both sides and to avoid being squeezed out.

Thus, these banks have to be in the interbank market both as takers and lenders, for two reasons:

1. for liquidity management;
2. in order to stay in the market and to keep the channels "well oiled."

Liquidity management compels banks, domestically too, to keep funds in other banks, even when they are net takers in the interbank market. In the international markets, the need to manage the liquidity position is even more important because of the lack of stable retail deposits and the "distance" from the parent bank.

On the other side, to stay in the interbank market, even when there is no need *per se*, is also crucial, in order to be able to tap it when the need emerges. It is more important to be in the market on both sides, taking and placing, even if a bank is a net taker: this is essential in order to have the best quotations when the money desk trader calls a broker.

For the above reasons, the *money desk is the real heart* of any branch located in international financial centres. In fact, such units should be really called *money desk banks*. Their nature is visualized by the frequent location of their offices on the top floors of skyscrapers. The managerial implications of this peculiarity are many, and the bankers who enter this activity for the first time should ponder well if they are to avoid disagreeable surprises. The closest parallel is with banks moving suddenly into intense liability management.

Since all banks have to trade in the interbank market to a larger extent than would be justified by the pure transmission need, they understandably try to add the speculative operations previously described in this activity. In fact, banks try to manage this "functional" overtrading in order to make a profit from it. Some banks may end up by overextending this activity at the expense of lending to final borrowers: in these cases, the speculative dimension exceeds the intermediation function, and the banks' balance sheet will consequently be inflated by excessive operations in the interbank market. Theoretically a bank could stay exclusively in the interbank market by carrying out space and time

arbitrage on interest and exchange rates. This activity, even if potentially very profitable, is extremely risky. The operation is essentially a zero-sum game, where one can easily win or lose. It is therefore crucial for bank managements to control the extent of interbank trading and to relate it to the needs of the intermediation function.

2. *The Role of the Foreign Exchange Department*

As was previously explained, intermediation may take place via a currency transformation on the foreign exchange market. In that case, the bank has to go to that market when the loan is granted and when the funds are reimbursed. It has also to resort to the market if it decides to hedge the foreign exchange risk through a forward contract.

Even in that case, in order *to be in the market* and to obtain the best conditions, the bank cannot intervene sporadically: it must trade on a continuous basis. This need is exacerbated because banks also provide foreign exchange services to their final customers involved in international payments. In order to be competitive in such a service — i.e. in buying and selling foreign exchange on the customers' account — the bank needs to offer the best prices, which it can obtain only through being constantly present in the market.

These needs lead banks operating in the international financial centres to engage in intense foreign exchange trading, to a greater extent than that required both by their currency transformation need linked to intermediation and by their foreign exchange service to their clients. Even in that case, the supplementary trading may be proportionate and essential to the basic activity or it may become disproportionate and fundamentally speculative in nature. When there is overtrading, as business *per se* rather than as an activity designed to perform the basic functions, similar risks are incurred to those described in the previous section.

3. *The Crucial Role of the Dealing Department*

The dealing department includes the money desk and the foreign exchange department. In a bank operating in the interna-

tional financial market, its role is crucial. Since the economic feasibility of many transactions implies predictions both regarding interest and exchange rates, the two sub-departments are clearly complementary. Some transactions really involve funding through the money desk in one currency, a transformation into another currency plus a forward cover through the foreign exchange, and finally a placement in the interbank market, again via the money desk. The dealing department is even more important in branches in funding centres, that is, in centres where funds are recycled mostly via the interbank market.

4. *An Evolutionary or Contingent Growth Model?*

What kind of growth model is the most appropriate for a bank entering international financial activity? Davis adumbrates an evolutionary growth model.³ In his view, a bank could enter the international financial scene with a step-by-step process: at the beginning, it would just trade in the interbank market (in my terminology, it would be in the middle of the intermediation chain); then, after establishing a reputation, it could move backward (to the surplus units) or forward (to the ultimate lenders). While this has really happened in some cases, in others banks immediately took up a position at one or the other extreme of the chain.

In fact, the entry of a bank into international financial intermediation is a function of a number of endogenous factors (the present strategic posture of the bank) and of exogenous factors (the conditions of the home country, as regards savings generation, foreign exchange reserves, international political and military position, etc.). The positioning to be taken in the intermediation chain is therefore specific to every bank. To be sure, international financial intermediation is new to many banks, and therefore a period of trial and error is normal.

But the fact that a bank is at the beginning or at the end of the intermediation chain depends not only on time and willingness, but even more on the strength and position of its country.⁴ Italian banks, for example, are badly handicapped vis-à-vis German or French banks, independently of their managerial capabilities.

³ See, S.I. DAVIS, *The Management Function in International Banking*, McMillan Press 1979, pp. 31-36.

⁴ See, C. DUFLoux, "Euro-Banquiers et Euro-Capitaux," in *Banque*, no. 391, January 1980, pp. 35-47 and no. 392, February 1980, pp. 169-175.

VI. *Implications for Bankers*

What can we infer from the intermediation model presented in this article?

For bankers, the peculiar nature of international financial activity has a number of implications. First of all, there is not just one undifferentiated activity, as is maintained by some academicians and also by some practitioners.⁵ There are different types of activities which can be carried on by a bank inside the organization of the international intermediation function. As a consequence, different potential strategies or roles are open to a financial institution entering the field. Each one implies particular strengths and organizational structures. A clear vision of which strategy is viable and optimal for a specific bank is the first crucial step; then the choice of location and the proper organizational arrangements will follow. There are many examples of banks setting up in international financial centres with vague ideas about what kind of activities they were going to carry on. Some banks misplaced themselves, convinced they could run, internationally, traditional retail banking through facilities on the street. Others entered the intermediation chain with the intention of collecting offshore funds from non-bank customers without having sufficient standing. The identification of the proper positioning is not at all easy: it requires deep strategic thinking and an understanding of the organization of international markets.

Equally important for a bank is the decision whether and how to extend its activity from short-term commercial banking to merchant banking. For institutions unable to do so at home, the lack of know-how and expertise in the new fields makes the diversification extremely hazardous.

A movement towards these new activities should be made only if there is an understanding of the key factors for success and of the risks involved, and by the implementation of the adequate organizational arrangements in order to manage and control the operations. The policy as regards the money desk and foreign ex-

⁵ See, S.I. DAVIS, *The Management Function in International Banking*, McMillan Press 1979, pp. 26-27.

change operations is also very important. Here, what is needed is a clear headquarters policy defining the scope of both functions in order to avoid the risk of overtrading. The more a bank moves away from its natural business — which is intermediation — and takes positions on its own account, the more it resembles a gambler: it may be successful, if it is superior in predicting future changes, but it has to cope with the volatility of the results.

VII. Implications for Regulators

The model presented in this article should help regulators to scrutinize the various activities performed by banks in the international financial markets. Three issues appear to be important:

- (i) money creation in international activity;
- (ii) the behavior destabilizing domestic monetary policy;

(iii) the risks to the soundness of banks engaged in international financial activity.

The debates regarding the money creation properties of international financial activities are familiar: given the nature of the issue, no definite conclusions will ever be reached. Thus, I will limit myself to a few modest observations.

First of all, it should be clear that the operations in international offshore markets are nothing but an intermediation of checking deposits, which still remain booked in the domestic markets of the currency denominating these deposits. This activity is similar to the one carried on by non-bank intermediaries in national financial systems. Whether non-bank intermediaries create or do not create money is an old issue, which has never been settled.⁶ But at least one point should now be clear: there are no checking accounts in the off-shore books, and therefore there is no M₁ multiplication in these external markets.

⁶ See, J. TOBIN, "Commercial Banks as Creators of 'Money'," in *Banking and Monetary Studies*, R. Irwin, Inc., Homewood, Illinois, 1963, pp. 408-419.

For the large number of subsequent articles specifically on the issue of money creation in the Eurodollar market, see bibliography at the end of article in note 7.

There is, however, a better utilization of the money already created in the various national systems via its rapid recycling from surplus units with idle funds to deficit units spending them.

Thus, it is true that this intermediation produces an increase of the total purchasing power in action. In Fisher's terms, there is a speed-up of the velocity of money.

Another question of interest to regulators is the extent of liquidity creation, as distinct from money creation. Does the international activity produce substantial maturity transformation so that the surplus units remain with liquid assets, while the deficit units are given long-term availability of funds?

If this were true, liquidity creation would be implied, with a potential impact on total spending. This issue had already been dealt with by some authors, who have demonstrated the limited maturity transformation taking place in international financial markets.⁷

This outcome is consistent with the nature of these markets as described in this article: the role is essentially that of a worldwide reallocation of liquidity, with little maturity transformation. A different issue is the potential disturbances on the domestic markets due to international financial operations. These do exist with regard to the monetary base, interest rates and foreign exchange rates. When funds move from one system to another, they produce desired as well as unwanted effects on these variables. But, it is the very existence of an open market which creates this ambivalent situation.

The offshore market sometimes operates as a buffer, ensuring domestic monetary equilibrium. Excess funds flow out, attracted by the expectation of higher yields, or a domestic shortage of liquidity is satisfied by the inflow of outside funds. Sometimes, however, the offshore market works against internal equilibrium, baffling the monetary authorities' efforts to control the domestic monetary environment.

The action against a country's policy is visible when the monetary authority of this country attempts to maintain certain foreign exchange rates, while the market bets against it. What can be done in order to save the advantages of the offshore market and to

⁷ See, J. NIEHANS - J. HEWSON, "The Eurodollar Market and Monetary Theory," in *Journal of Money, Credit and Banking*, February 1976.

avoid its disturbances is a central issue in all plans aiming at controlling the international financial markets. The answer lies in the possibility of central banks elaborating a plan of mutual assistance when the market plays against their targets. This approach respects the market, but prevents organized speculation from setting the prices.

The last issue to be raised concerns the responsibility assigned to regulators to monitor the solidity of the banks.

When moving into markets, most banks face a dramatic change in their traditional activity: they go into money desk banking, whose development is not limited by the constraints typical of retail banking.

In the offshore market, furthermore, banks are free from regulations and can play space and time arbitrages to an almost unlimited extent. They can also play (and overplay) the foreign 'exchange markets.

In short, because of the nature of international financial activity and of the unregulated environment, banks in the offshore markets can inflate their operations beyond the point of equilibrium, with consequent risks to their liquidity and solidity.

Since more than one thousand billion of dollars are recycled by banks in international financial markets, protecting the soundness of the system has become a major issue for the international community. The plan to create an international protocol on minimum capital ratios to protect banks' solvency is one of the steps under way to solve the problem.

But the extensive trading required in order to perform the allocation function should also be carefully monitored. In addition, liquidity and capital ratio guidelines should be considered as a control mechanism, as is the practice with the internal procedures of the best managed banks.

Milan

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