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The Eurocurrency Market and World Economic Stability

Prepared by a Research Department Working Group

Approved by John H. Young

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The Eurocurrency Market and World Economic Stability

In response to a request by the Managing Director in December 1977, the Research Department set up a working group to carry out a study of the Eurocurrency market. The group consisted of Messrs. Heller,^{1/} White, Kennedy, Knight and Young. In January and February visits were made within the United States and Europe. Discussions took place with representatives of the Federal Reserve System, OECD, BIS, Bank of England, Deutsche Bundesbank, Banque de France, the French Ministry of Finance, and the regulatory authorities in Luxembourg, and with officers of private financial institutions in New York, London, Frankfurt, Luxembourg and Paris.

The working group concentrated its efforts on the macroeconomic aspects of the Eurocurrency market, with attention given to other questions only to the extent that they help to throw light on the way in which this market affects world economic stability. This means that there are important issues arising out of the Eurocurrency market that are only touched upon in this report. These include the whole range of problems associated with the question of prudence in lending practices. Work on these issues within the Fund has been coordinated by the Exchange and Trade Relations Department, which also has the responsibility for providing current reports on recent and anticipated developments in lending activity.

While much has been left out of this report, it has still been necessary to consider the most important quantitative and qualitative characteristics of the Eurocurrency market in order to provide the essential foundations for an analysis of the major policy issues. Parts I-III of the paper are devoted to the statistics, history, and operating characteristics of the Euromarket leading up to Part IV on macroeconomic effects, and Part V on the policy issues.

I. Statistical Information

An essential first step in assessing the nature and importance of the Eurocurrency market is an understanding of the statistics on this market published by the Bank for International Settlements. The BIS series on the narrowly-defined Eurocurrency market, which runs from 1964 to the present, measures the foreign currency position of banks in eight European reporting countries. It appears that the accuracy of this series may be affected by some differences in individual reporting country definitions, and there are also some discontinuities which have arisen as national compilers have extended their statistical coverage. Nevertheless, these statistics are

^{1/} Mr. Heller took part in the work of the group until he left the Fund in April 1978.

the basic source of information, and the estimates made by others are built upon the BIS collation of data supplied to it by reporting central banks. It is thus important to have a clear understanding of the conceptual framework on which they are based.

This is particularly needed because the Eurocurrency market is not a unique market institution; it comprises elements of banking transactions that overlap and merge with various aspects of both the foreign exchange market and the national, or international, banking markets. As a first approximation, a Eurocurrency deposit may be defined as any bank liability (whether to a resident or nonresident) denominated in a currency other than the currency of the country in which the bank is located.^{1/} Thus, in order to determine the size of the Eurocurrency market, a measure is needed of all U.S. dollar denominated deposits in banks or bank branches located outside the United States, all sterling denominated deposits in banks outside the United Kingdom, all deutsche mark deposits in banks located outside Germany, etc. The BIS has traditionally published two sets of data relevant to the narrowly-defined Eurocurrency market, the first setting out the gross foreign currency asset and liability positions of banks in the eight reporting countries ^{2/} vis-à-vis nonresidents, and the second providing estimates of the net size of the Eurocurrency market by excluding interbank redepositing. Such redepositing has always been very important for the effective operation of the Euromarket, but the inclusion of such positions would provide a misleading estimate of the original sources of the Eurocurrency funds and the amount of loans made to ultimate borrowers. Estimates of the "net" size of the market represent an attempt to provide this type of information.

The eight European reporting countries account for a major share of all banks' foreign currency positions, but, at some expense in terms of precision, coverage can be extended to include the Eurocurrency deposits of banks in Canada, Japan, and selected offshore centers. In order to assess the macroeconomic impact of the Eurocurrency market, it was therefore decided that estimates were required for as broad an area as possible, and that they were also needed for both the gross and net concepts of market size.

In this respect, it is important to note that the BIS concept of the net size of the narrowly-defined Eurocurrency market (which was adopted for the working group's compilation of the net size of the more broadly-defined Eurocurrency market) diverges slightly from the approximate definition of a

^{1/} As pointed out below, the BIS concept of the Eurocurrency market allows for various exceptions to this simple definition.

^{2/} This series, by excluding foreign currency positions with residents and various Swiss bank trustee funds yields lower estimates than those recorded for the gross size of the Eurocurrency market as defined for purposes of this report.

Eurocurrency liability given above, as various bank liabilities denominated in foreign currency are excluded from the BIS definition of the net market. Quantitatively, the most important of the exclusions concerns the allowance for redepositing between reporting banks, but the BIS net Eurocurrency market concept also omits various other foreign currency denominated liabilities which are not considered to reflect Eurocurrency transactions. Essentially, these comprise foreign currency liabilities that represent the "normal" links between national financial markets that existed prior to the establishment of the Eurocurrency market, and would continue to exist in its absence. Typically, any interest rates on such liabilities are related more directly to comparable rates and practices in the national financial markets than to Eurocurrency rates. Liabilities of this kind would include such items as working balances in foreign currencies, and trade bills or other trade financing paper denominated in foreign currencies, but, in practice, data limitations prevent the BIS from making allowance for all of these items.

In Table 1 we include estimates of the gross and net size of the broadly-defined Eurocurrency markets including Canada, Japan, and selected offshore centers, and these estimates are compared with those of the narrowly-defined market and estimates of total international bank lending. In recent years, the average cumulative rate of growth of the broadly-based market has been somewhat higher than that of the narrowly-defined market, and as a result the net size of the broadly-based market has increased from about 10 per cent larger to about 20 per cent larger than that of the eight European reporting countries. An estimate is also given in Table 1 of total international bank lending. This includes international loans made in domestic currency which are not part of the Eurocurrency statistics, but excludes foreign currency loans made to residents which, as noted above, are part of the net size estimates for the broadly-defined Eurocurrency market. The net size of the broadly-defined Eurocurrency market is only marginally smaller than estimated net international bank lending.

In Table 2 a breakdown is provided of the sources of Eurocurrency deposits for the more broadly-defined market. Over the years there has been a significant decline in the share of the non-banks, offset by a rise in the share of central monetary institutions and a measure of stability in the share of banks.

It is not surprising, given the fact that Eurobanks are either banks or branches of banks, that there is a temptation to classify their deposits as money and add their net size to the global money stock. This was in fact done by Professor Arthur Laffer and led to a correction in 1976 from Helmut Mayer, one of those who has had major responsibility for the compilation of these data. His article on "The BIS Concept of the Eurocurrency Market," Euromoney, May 1976, was useful in elaborating some of the devices used to obtain estimates of the net size of the market.

Table 1. Alternative Estimates of the Size of the Eurocurrency Market, 1964-77

(In billions of dollars, unless otherwise specified)

	Narrowly-Defined Eurocurrency Market		More Broadly-Defined Eurocurrency Market		Estimated Net Inter-national Bank Lending 4/	Memo Item: Annual Per Cent Change in Net Size of More Broadly-Defined Eurocurrency Market	
	Gross size 1/	Net size 2/	Gross size 3/	Net size 3/		...	...
1964	16	12	25	17	...	...	12
1965	19	13	28	19	...	...	21
1966	26	16	35	23	...	...	30
1967	33	21	44	30	...	...	27
1968	47	30	58	38	...	...	32
1969	81	44	98	50	...	...	24
1970	105	57	127	62	...	...	26
1971	136	71	165	78	...	...	28
1972	183	92	222	100	...	...	48
1973	265	132	331	148	...	...	40
1974	310	177	403	208	220	260	15
1975	354	205	464	240	260	330	22
1976	417	247	560	294	330	405 5/	28 5/
1977	512	300	675 5/	375 5/	405 5/		

1/ Comprises BIS estimates of external positions of reporting European banks in dollars and other foreign currencies, plus the estimated foreign currency positions of those banks with residents. Also includes allowance for trustee funds held by Swiss banks to the extent that they are not reported as liabilities by the Swiss banks themselves.

2/ Gross size estimates adjusted to exclude redepositing between banks in the reporting area. Essentially based on published BIS figures with minor allowances for breaks in the series in earlier years due to changes in coverage.

3/ Concepts are comparable to those shown for the narrowly-defined market. Comprised of BIS estimates for the banks in the eight European reporting countries, plus the positions of banks in Canada and Japan, and of branches of U.S. banks in selected offshore centers (viz., the Bahamas, Caymans, Panama, Singapore, and Hongkong).

4/ Published BIS estimates. Data relate to the external liabilities to nonresidents of banks in the more broadly-defined reporting area, plus similar liabilities of banks in the United States.

5/ Preliminary.

Table 2. Sources of Eurocurrency Deposits for the More Broadly-Defined Eurocurrency Market, 1964-77

(In billions of dollars)

	Inter-bank			Of which:		
	Total Gross Market 1/	Redepositing	Total Net Market 1/	Non-banks	CMI 2/	Banks
				(%)	(%)	(%)
1964	25	8	17	(53)	2	6
1965	28	10	19	(53)	4	5
1966	35	12	23	(52)	5	6
1967	44	14	30	(48)	5	10
1968	58	20	38	(46)	7	13
1969	98	48	50	(54)	8	15
1970	127	65	62	(50)	14	17
1971	165	87	78	(44)	16	27
1972	222	122	100	(41)	26	33
1973	331	183	148	(41)	35	53
1974	403	195	208	(38)	58	71
1975	464	224	240	(36)	68	87
1976	560	266	294	(35)	85	105
1977	675 3/	300 3/	375 3/	(34)	112 3/	136 3/
Memo item: Average cumulative rate of growth, 1964-77 (%)	28.8	32.2	26.8		36.4	27.2

1/ See footnote 3, Table 1, for details.
 2/ Central Monetary Institutions.
 3/ Preliminary.

Even more important was the reminder given of the nature of the deposits made in the Euromarket. Mayer points out that any attempt to add the liabilities of Eurobanks to domestic estimates of M1 (demand deposits and currency in the hands of the public) in order to estimate global money supply is wrong on at least three counts. First, the deposits held by banks in the Euromarket, net of interbank balances, are the counterpart of domestic deposits that have already been counted in the money supply of individual countries. Second, just under a third of Eurodeposits is held by official institutions rather than the public and would thus not be included in any of the monetary magnitudes. Third, of the deposits held by non-banks (approximately one third) almost all would be classified as in the higher M categories, since they are all time deposits of varying periods to maturity. After discussing a number of the qualifications required, Mayer reached the following conclusion on the effects of the Eurocurrency market on global monetary magnitudes:

...hardly any addition would have to be made to the narrowly defined money stock (M1); what would have to be added to the other world monetary aggregates (M2, M3, M4, etc.) might be about 25 per cent of the BIS net size estimate... . Expressed as a percentage of relatively liquid total world financial assets, this would hardly amount to more than 2 or 3 per cent.

To put these numbers in perspective, it is worth noting that the liabilities to non-banks of Savings and Loan Associations in the United States are roughly three times as large as the total of all non-bank deposits from all countries in the broadly-defined Eurocurrency market.

II. The Development of the Euromarket

Two standard explanations given for the origin of the Euromarket are: (a) that some foreign holders of dollars (the socialist countries) wished to deposit these funds outside the United States; and (b) that some national authorities discouraged the international activities of their domestic banks in domestic currency by various forms of voluntary or mandatory payments restrictions. Both factors have played some part in the subsequent growth of the Euromarket. Socialist countries are apparently not alone in wanting to have some of their holdings of dollars in banks outside the United States; and the decision of the British in 1957 to curtail sharply the use of sterling in international trade transactions was only one example of similar steps taken by other countries at various times. Describing the U.S. experience with lending restrictions in the nineteen sixties, one shrewd observer remarked, "The American attempt to stop the export of capital in the nineteen sixties led to the export of the American banking system instead." These and restrictions in other countries help to explain the further development of the Euromarket.

Less dramatic, but of more importance in the long run, has been the competitive advantage enjoyed by Eurobanks as a result of their relative freedom from the costs and impediments of the regulatory arrangements covering domestic banking. For foreign branches of U.S. banks this means no reserve requirements, the avoidance of the costs of Federal Deposit Insurance, freedom to pay interest on deposits of less than thirty days without resorting to repurchase agreements, and the absence of any form of interest rate ceilings. With some exceptions, the same freedom is enjoyed by the banks of other countries for operations in dollars or other Eurocurrencies.

Market opportunities may be available but entrepreneurial talent is required to make the most of them. Innovative bankers were found in London and elsewhere in the late fifties and early sixties, and others following in their footsteps have helped to maintain the forward momentum of the Euromarket. A leading figure in the early days, Sir George Bolton, was at Bretton Woods as part of the British delegation, later served as the United Kingdom's Executive Director on the Fund's Board from 1946 to 1952, and became Chairman of the Bank of London and South America (Bolsa) in 1957. One of his first acts as Chairman was to encourage his foreign exchange dealers to look for deposits in foreign currencies. One of them reports that "In September 1957 we started to canvass banking connections and other correspondents in continental Europe for dollar deposits and we very quickly began to collect funds once it was realized that we were paying realistic and worthwhile rates in excess of the going rate in New York." As Richard Fry has put it, "Bolton was one of the first to plunge headlong into the new medium, and...for several years Bolsa was the largest single dealer in Eurodollars in London."^{1/} Sir George was not only a major operator in the Euromarket but also contributed some of the best short pieces analysing the development of these markets. For example, in 1966 he wrote the following:

From very modest origins, the market, which is an integral part of the foreign exchange market, has developed into a highly technical process of spot exchange transactions, forward operations and deposits or loans; rates of interest vary not only for all the different currencies involved and the term of deposits, but also from hour to hour according to the pressures of supply and demand, the movements following the interplay of forward rates of exchange and many other influences. ... Many of the leading banks of the world now actively participate in the deposit and re-deposit of currency with each other, in the adjustment of their liquidity positions, entirely without security, and at rates of interest which are affected but not determined by the margins of the official money rates prevalent in the New York and London

^{1/} A Banker's World, Speeches and Lectures of Sir George Bolton, edited by Richard Fry, Hutchinson of London, 1970, p. 32.

markets. This has been accomplished as a result of international needs, the enterprise of the banks, the confidence they have in each other and because the orthodox money markets have become too much subject to domestic requirements and political direction.^{1/}

There are many others who contributed to the adaptation of existing banking practices to dealing in foreign currencies, but so far no comprehensive history is available that provides a detailed account. It is clear, however, that while the direction of influence first ran from domestic banking to Eurobanking, after a time techniques and habits developed in the Euromarket began to influence domestic banking practices. One example is the practice of setting lending rates at a spread over the cost of funds. Another is the recognition that the governments of developing countries constituted a better credit risk than a wide range of domestic bank borrowers. A third is the development of the inter-bank sterling market which is said to have resulted from the experience of U.K. banks in dealing with each other in Eurocurrencies.

The close relationship between domestic banks and Eurobanks both in terms of institutional ties and financial practices, led many to analyze the Eurocurrency market along the same lines as traditionally used for a domestic banking system.^{2/} Thus in explaining the growth of the Eurobanking system, they tended to think in terms of the multiple expansion of deposits which would follow a fresh injection of funds into the system. This has not proved to be a particularly rewarding approach. It is not surprising that there has been a good deal of disagreement on the size of the deposit multiplier since most Eurobanks do not hold specific reserves against their Eurodeposits. Rather they rely in general on their continued access to the Eurocurrency market to meet liquidity needs, and assume that if some catastrophe should overtake this market without at the same time suspending operations in domestic markets, they could fall back on the financial strength of their parent organizations and the central banks that stand behind them.

The fact that Eurobanks are "banks" or departments of "banks" and take "deposits" has been a barrier to what some regard as a more fruitful comparison, namely that with non-bank financial intermediaries. In recent years it has come to be recognized that there is less difference between banks and non-banks than was formerly thought, but it remains true that in analyzing the growth of non-bank intermediaries attention is directed to the demand for the type of lending provided by the intermediary, and the

^{1/} Op. cit., p. 143.

^{2/} As early as a decade and a half ago Professor James Tobin pointed out some of the limitations of the traditional method of analyzing banking systems in his "Commercial Banks as Creators of Money," reprinted in James Tobin, Essays in Economics.

competitive advantages or disadvantages of such financial institutions in obtaining a supply of funds.

In a number of countries some non-bank financial intermediaries have grown more rapidly than banks over several decades. They have been able to do so by being specialized in a type of lending for which demand is growing relative to general bank lending, and by being able to compete with banks for funds through having lower reserve requirements and fewer regulatory restrictions. When these intermediaries make a loan to a customer they do this by issuing a check on a bank rather than one drawn on their own institution.

These generalizations also apply to Eurobanks. Thus, like operations involving non-bank financial intermediaries when a payment in dollars has to be made by a Eurobank, this is generally done by a check written on a bank in the United States,^{1/} just as a deutsche mark deposit or loan is made with checks drawn on banks in Germany. Similarly, like the activities of some other intermediaries, Eurobank business has grown more quickly than that of banks in most countries, and certainly much faster than that of banks in almost all of the countries whose currencies are used in the Euromarket. The Eurobanks are wholesale international lenders and over the years the general growth of demand for this type of lending, and the voluntary or mandatory restrictions on this type of lending by domestic banks, have led to a continued growth in Eurobank loan demand. At the same time a considerable measure of freedom from formal reserve requirements and deposit insurance has given Eurobanks a competitive advantage over domestic banks, and the absence of any ceilings or other restrictions on their interest rates has enabled them to use this competitive advantage over domestic banks to attract funds.

A significant proportion of these funds has come from official institutions. For example, from the end of 1973 to the end of 1977 the BIS estimates that the sources side of the narrow Eurocurrency market (banks in the eight reporting countries) increased by about \$168 billion. Of this total we would estimate about \$75 billion came from an increase in holdings of official institutions. In the absence of the Euromarket, this increase would have gone to the reserve currency centers, most of it into U.S. Treasury bills or U.S. certificates of deposit. Given the higher interest rates on deposits in the Eurocurrency market, a number of official institutions have been prepared to diversify in order to raise the yield on their reserve portfolios.

The role of official institutions among the different classes of participants in the Euromarkets has become more important in recent years. In the latter half of the nineteen sixties less than 20 per cent of funds

^{1/} Among some of the banks operating in London some dollar clearing takes place, with only the net balances of participating banks needing to be cleared through New York.

came from official institutions with about 30 per cent coming from banks and 50 per cent from non-banks. In the period 1975-77, 29 per cent came from official institutions, 36 per cent from banks, with non-banks falling to about 35 per cent.

It is more difficult to identify changes on the uses side of the balance sheet, and data on Eurocurrency credits are of limited usefulness for this purpose. It is noteworthy, however, that an analysis of publicized Eurocurrency credits over the years 1974, 1975 and 1976 shows official borrowers as taking 72, 71 and 77 per cent, respectively. These official borrowers, of course, include a wide range of corporations and institutions which are able to obtain a guarantee from a government.

Over the years there have also been shifts in the geographical location of the Eurocurrency market. Throughout, London has played a key role and has remained the principal center. There has been a sharp increase in recent years in what is, in effect, Eurobanking by U.S. domestic banks booked through offshore centers, and Luxembourg has risen in importance with the growing participation of German banks in the Euromarkets. Paris has remained significant, being roughly the same size as Luxembourg, and other centers have had declining shares including those in Canada, Japan, Italy and Switzerland.

Attitudes vary on the importance attached to the distribution of the Eurobanking "industry." There is a strong "City" spirit in London actively promoting the continued location of an important part of the market there. Something of the same attitude is to be found in Luxembourg, although it is accepted that this will remain a center with particular attraction to the German banks and to a lesser extent other North European countries and Switzerland. The same kind of ambition for a larger share of the market does not appear so clearly in either Paris or New York. The French authorities are not unprepared to see a good deal of business done in Paris, but they do not appear to seek a substantially larger share of the market. Some of the French commercial bankers also appear to take a cautious attitude toward extending their operations in the Euromarket.

U.S. banks, particularly New York banks, have certainly sought Eurocurrency business aggressively, and large amounts of Euromarket transactions are arranged and handled in New York and simply booked offshore. While there has been a proposal to establish a "free trade" zone for banks in New York, those at the operating level do not generally seem to regard London as a rival to be bested, and appear quite content to see substantial operations carried on in the United Kingdom. One explanation is that London gives the U.S. banks an opportunity to do business within the same time zone as a heavy concentration of borrowers and lenders. The relative lack of enthusiasm of major U.S. banks to extend their operations in Luxembourg reflects the fact that duplication of facilities within one time zone may have limited advantages. It is also true that the concentration of financial institutions in London makes it easy to do business there, and many

expatriate bankers are enthusiastic supporters of the City and the Bank of England. It is interesting, for example, to hear an expatriate American banker stoutly denying a domestic U.S. bank view that what can be done in London to put together a syndicated loan can be equally well done in San Francisco. There are differing views on the extent to which other centers, including those in Hong Kong and Singapore, will develop an important life of their own as opposed to being a channel for borrowing and lending arranged elsewhere.

There are differences in the attitude of the authorities in the various centers to the regulation of the banks within their jurisdiction. For example, the view in Luxembourg is that banks operating there are subject to the regulatory authorities of Luxembourg, and there is considerable resistance to what is regarded as outside interference. The Bank of England takes a different view. While it considered that it has a special responsibility for U.K. banks or consortium banks registered in the United Kingdom, the Bank was quite prepared in 1974 to request comfort letters from the parent institutions of consortium banks indicating a willingness to provide support in the event of difficulties. In the case of foreign banks, including both branches and subsidiaries, the Bank is prepared to share supervision. In general, the British view is that the examination and regulation of the portfolios of foreign banks is primarily a matter for those overseeing the activities of the parent banks, and officers of foreign regulatory agencies are welcome in London. The Bank of England exercises its own oversight as well, and it is interesting to find foreign bankers, accustomed to more direct techniques of control taking considerable pleasure in reporting what the Governor is said to accomplish by raising his eyebrows.

From the very beginning of the Euromarket there have been those who predicted that its rapid growth was a temporary matter and would be succeeded by a slowing down or even a decline with business being surrendered again to domestic banking systems. In the early nineteen sixties Paul Einzig concluded the preface to a book on Eurodollars with the following words:

Towards the close of the seventeenth century Madame de Sévigné remarked about her great contemporary Racine: "Il passera comme le café," meaning that his reputation, like the habit of coffee drinking--which was a novelty in the West in her day--would prove to be a passing fashion. Both coffee and Racine have survived, however. And so will, I am confident, the Eurodollar system.

This was written at a time when the Euromarket was just getting well-established and Oscar Altman of the Fund was estimating its size at about \$4-5 billion. In the interval the market has grown to more than sixty times its size fifteen years ago, while the business of domestic banks in the United States has increased by about three times.

It is very often argued that new forms of financial intermediation, particularly unregulated forms, go through several phases. First, there is a tendency for an increasing number of transactors to become aware of the new opportunities with the result that the rate of growth is high for a period. Second, problems may arise if an unregulated institution fails, or some major borrower cannot meet his obligations. Third, if the new form of intermediation can weather such storms it will tend to settle down to a rate of growth somewhat similar to that of other parts of the financial system.

The point to emphasize here is that various forms of highly specialized borrowing and lending can have rates of growth that diverge from the rest of the financial system for several decades. If, for example, the requirement for capital in the housing industry rises more rapidly than that for the financing of consumer durables, manufacturing or service industries, then institutions specialized in housing finance can grow at higher rates than other financial intermediaries for extended periods. The same applies to the Eurobanks which deal in wholesale international business. Their recent growth, for example, has in significant measure resulted from their role in the "recycling" process, and there may or may not be equally important new possibilities in the future. Eurobanks have also had their times of trial, including, for example, the repercussions of the Herstatt failure. During the summer of 1974 some Eurobanks could only obtain funds in the interbank market at rates well above the yields they were obtaining on their loan portfolios, but with expressions of general support from the central banks of the Group of Ten, and in particular from the Federal Reserve, the market recovered and resumed a significant rate of growth. Indeed, in spite of its advanced age, the Euromarket still appears to be attracting new customers, both private and official. It is perhaps noteworthy, however, that the rates of growth of the broadly-defined Euromarket have been somewhat lower in the last three years than in the previous decade.

One of the important determinants of the future growth of the Eurocurrency market will be decisions made about the reserve requirements of domestic banks. If action should be taken at some time in the United States to reduce the reserve requirements of member banks or pay interest on reserves as a means of discouraging the withdrawal of banks from the Federal Reserve System, this will narrow the competitive advantage of Eurobanks in dealing in dollars. In the late nineteenth century it was said of Bank rate in London that 7 per cent would bring gold from the moon. Neither then nor now would anyone expect 10 or 20 basis points to have a similar effect in moving money. Thus if spreads narrow to margins of that order, London and other non-U.S. centers dealing in dollars will have to depend to a greater extent on such competitive advantages as location and ingenuity to retain and increase their business.

While the officers and shareholders of particular institutions would be affected by changes in the competitive advantage of particular locations,

concerns of this kind are in a sense inconsistent with the attitudes prevailing in international banking. The general impression conveyed is that following the developments of recent years banks and other financial institutions doing an international business are prepared to deal in any country, with any creditworthy customer, in any of a wide range of currencies. Two decades ago few, if any, would have expected the development of as sophisticated and as responsive a private international financial system as the one we now have. There is a widely shared view among those in both the private and public sectors who have contributed to this development that in considering what steps, if any, are necessary to exercise further oversight over this system, care should be taken to preserve its contribution to world economic welfare.

III. Operating Characteristics of the Euromarket

As is evident from the substantial differences in the gross and net size of the Euromarket, much of the borrowing and lending in this market takes place among banks, and, in contrast to most domestic banks, a large proportion of the balance sheet of a typical Eurobank consists of liabilities to and claims on other banks. Because the core of this interbank market consists of a group of large, well-known and respected international banking firms, interbank transactions take place on a "name" basis, through the medium of unsecured credits. These procedures greatly enhance the flexibility with which banks active in the interbank Euromarket can manage their assets and liabilities. Under normal conditions the "breadth and depth" of this market allow banks to borrow and lend in the maturities and currencies that are best suited to their overall portfolios.

As in any other financial system, bank transactions in the Eurocurrency market include borrowing (funding) and lending (credit) transactions, and these are discussed below. In addition, Eurobanks switch funds borrowed in the Euromarket into the currency of the country in which they are resident, and similarly use domestic funds to finance their international lending. These are considered below in the section concerned with capital movements, interest arbitrage, and the forward exchange market. Finally, other aspects of the Eurobanks' portfolio management include liquidity and maturity transformation.

1. Funding operations in the Euromarket

As was pointed out in Part I, the funds of a Eurobank can come from residents of the country where the Eurobank is located, and from banks, non-banks, and official institutions abroad. The freedom with which non-bank residents can place funds with Eurobanks varies considerably from one country to another, and depends essentially on the extent and nature of a country's exchange controls. For example, U.K. exchange controls prevent British residents from switching domestic sterling deposits into the Eurocurrency market, either directly or via the banking system. In the case of the United States, a variety of voluntary restraints existed during much of the

sixties and early seventies. These included a letter to member banks in 1969 from the Chairman of the Federal Reserve, Mr. Martin, stipulating that in view of the freedom from reserve requirements and interest rate ceilings enjoyed by banks in their offshore operations, it was the policy of the Federal Reserve System to "discourage deposits by United States residents at foreign branches of United States banks unless such deposits have been placed to secure a definite, necessary purpose outside the United States." When other restraints were removed in 1974, this one was retained by a reaffirming letter from Mr. Burns in 1975 stressing that "it would be inappropriate for member banks to solicit or encourage the placement of deposits by United States residents at their foreign branches unless such deposits are placed to secure a definite, necessary purpose outside the United States." The Burns-Martin guidelines apparently have an effect on the actions of the banks, but opinions about the exact implications of these guidelines differ, and even those banks which adopt a strict interpretation would not hesitate to accept a Eurodeposit from any corporation that has international activities. Furthermore, U.S. non-bank residents are not constrained from making Eurodeposits in foreign banks in London, Toronto, etc. Thus, these guidelines would not inhibit a U.S. asset holder who was seriously interested in placing funds in the Eurocurrency market, whatever the nature of his commercial activities.

It would appear that the learning process about the Euromarket is still going on among U.S. corporations and other non-bank lenders. For some lenders to the Euromarkets there is an awareness of the increased risk of holding Eurodollar deposits which are subject to local laws in the offshore centers. The Euromarket is attractive to U.S. lenders who want to place funds from 1 to 30 days since Regulation Q prevents payment of interest on such deposits by onshore banks. In this maturity range Eurocurrency deposits must compete with repurchase agreements (RPs), but we were told that on occasion banks may have difficulty in finding enough suitable assets for RPs, and thus find it difficult to make arrangements to pay interest on funds available for less than one month.

Deposits by official institutions in the Euromarket had been growing steadily even before the oil price increase of 1973-74. The substantial change in the structure of balance of payments deficits and surpluses induced by the rise in oil prices redistributed large quantities of reserves to the central monetary authorities of oil exporting countries. This led to a considerable rise in the demand for Eurocurrency deposits, especially by low absorbing OPEC countries, at the same time that the demand for Eurocredit on the part of non-oil producing countries was increasing. By the end of 1977 approximately \$112 billion of reserves were held in the Euromarket by official institutions.

The Euromarket competes for official dollar holdings with the New York money market. At the end of 1977 about \$126 billion of official reserves were held in New York. The Federal Reserve Bank of New York is the main agent for foreign central banks, and at the end of 1977 held on their behalf approximately \$92 billion of U.S. Treasury securities, including

nonmarketable securities payable in foreign currencies. There is active competition among private financial institutions to provide services to official institutions in handling their reserve portfolios. As indicated earlier, official holdings in the Euromarket have risen rapidly in recent years, in part as a result of the higher yields available.

As shown in Table 2, Eurocurrency deposits by banks made up approximately one third of the sources of funds in the broadly-defined Euromarket in recent years. In the absence of capital controls, banks have an incentive to switch funds obtained in domestic financial markets into the Eurocurrency markets whenever the covered yield on Eurocurrency placements is above that on domestic assets of similar characteristics. Banks in different countries are, however, subject to different forms of control on such net-switched positions. U.K. banks, for example, are able to switch funds borrowed in the Eurocurrency market into sterling but their out-switching is limited to approximately £300 million for the system as a whole. In the case of U.S. banks, the Burns-Martin guidelines do not apply to claims held by U.S. banks in Eurobanks. Regional banks in the United States do not appear to place significant amounts of funds in the Eurodollar market, but the large money market banks adjust their net claims on the Euromarket as part of their global portfolio management. Any switching that induces a net liability position of head offices to their foreign branches or to foreign banks abroad is liable to a 4 per cent reserve requirement under Regulation M. Similarly, effective December 1, 1977, foreign branches of U.S. banks must hold a 1 per cent reserve against deposits used to fund loans to U.S. non-bank residents.

Whatever the ultimate source of their funds, most Eurobanks obtain a large proportion of their total deposits via the interbank market. Such funding transactions take place directly between the lending and borrowing banks or through the medium of a broker. The basic rates in this market are the London interbank bid (LIBB) and offer (LIBO) rates. The former, which is typically 1/8 to 1/4 per cent below LIBOR, is the rate at which the largest banks borrow U.S. dollar funds in the market, while LIBOR itself is the rate at which these banks will lend to others with top names. Since the market relies on names, the interest rates paid by the smaller banks are "tiered" above LIBOR, with the degree of tiering depending on market conditions. Nevertheless, the market has great "depth and breadth," and bankers to whom the group spoke were fully convinced that they would always be able to get funding in the market at a price, except in the most extraordinary conditions.

The U.S. banks engage in funding operations on a global basis, borrowing Federal funds or Euros, depending on their relative cost. In order to avoid U.S. state and local taxes and reserve requirements, deposits are often booked in offshore branches, but in the case of the Bahamas' and Caymans' branches all major funding decisions are made in New York. Most bankers informed us that the interest rate on Federal funds in the United States is now the basic determinant of the cost of funds to the Eurobanks, and the London interbank bid and offer rates, are very tightly linked to it.

While it is difficult to get precisely comparable series on yields, and while the series that are available are frequently criticized, it is noteworthy that there is a very close correspondence in Chart I between the U.S. CD rate adjusted for reserve requirements and the rate on three-month Eurodeposits. These two series also move closely with the changes in the Federal funds rate. The difference in level reflects the fact that Federal funds are very short-term liabilities, while the yields shown here for U.S. CDs and Eurodollar deposits are for three-month maturities.

The market shares of banks whose head offices are located in countries other than the United States depend more on their size and reputation than on their nationality, though certain banks have experienced funding problems when their countries encountered severe balance of payments difficulties. Arbitrage processes ensure that the interest rates paid by banks on Eurodeposits denominated in currencies other than dollars equal the relevant Eurodollar rate plus the annualized forward discount on the currency relative to the dollar.

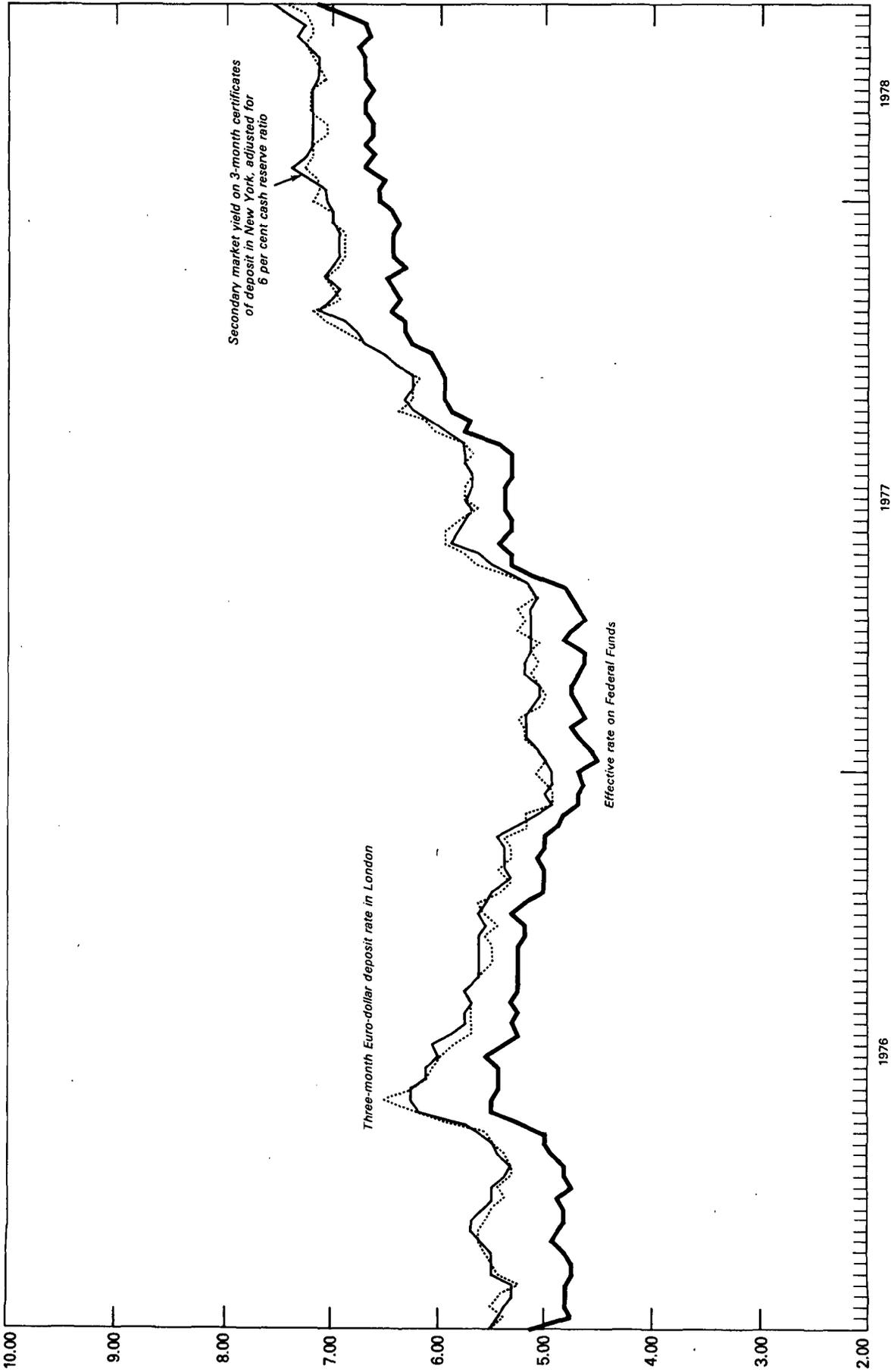
2. Lending operations in the Euromarket

The standard Eurobank loan at the short end of the market has a fixed maturity and interest rate, but for longer-term credits most contracts contain an agreement that the bank will roll the credit over at some spread over the cost of funds (in practice this is LIBOR). Thus, for large medium-term loans (i.e., several years' maturity), the standard lending contract is the syndicated revolving Eurocredit, and the interest rate on such a credit is quoted as a spread over LIBOR. This published spread is frequently significantly less than the effective yield on the loan for the participating banks because of various front-end fees (participation fees, signing fees, commitment fees, etc.). Many loan agreements permit the borrower to alter the revision period at each roll-over date. This provision could create liquidity problems for banks if interest rates were generally expected to rise at a time when banks were engaging in substantial maturity transformation, but the experience of the bankers with whom we discussed this provision did not suggest that this constituted a potential problem.

3. Capital movements, interest arbitrage, and the forward exchange market

Whenever a bank switches funds borrowed from foreigners in the Eurocurrency market into domestic currency and invests them in domestic assets it causes a capital flow into the domestic economy. Conversely, a capital outflow occurs when a bank switches funds borrowed from domestic residents into foreign currency and places them in the Eurocurrency market with non-residents. In recent years Eurocurrency transactions have become a common avenue for short-term capital movements between countries. These capital flows are induced either by changes in the configuration of domestic and Eurocurrency interest rates and spot and forward exchange rates, or by expected changes in these variables. Other things equal, capital movements (whether covered or uncovered) between one country and the rest of

CHART 1
COMPARATIVE INTEREST RATES FOR U.S. DOLLAR FUNDS, 1976-78
(Weekly data; in per cent)



the world will affect either the country's official international reserves or its exchange rate, or both, depending on the intervention policy of the authorities.

For banks which eschew an uncovered foreign exchange position, there is an incentive to move funds out of the country when the covered yield on Eurocurrency assets is above that on domestic assets. An important instance of this behavior arises when banks use the interbank Euromarket to cover forward exchange commitments that they have undertaken on behalf of their non-bank customers. For example, suppose that a Canadian bank has a customer who wants to purchase three-month forward deutsche mark. (The customer might be hedging an import transaction, engaging in interest arbitrage, or speculating on the forward market--the source of his demand is irrelevant.) The Canadian bank can cover this transaction by swapping Canadian dollars into deutsche mark spot and lending in the Euromarket until the date (three months hence) when it must deliver the deutsche mark to its customer. The price that the bank quotes its customer for forward deutsche mark will be calculated in such a way as to make this transaction profitable for the bank, given the interest rates on assets denominated in deutsche mark and Canadian dollars.

For banks that are willing to hold an open position, expected exchange rate changes can induce capital flows. Most of the bankers interviewed by the group stated flatly that their banks had extremely strict limits on uncovered open positions, but, as is usual in such discussions, felt that some other banks were not as prudent as their own. One of the bankers with whom we spoke informed us that his bank could have an open foreign currency position equal to 30 per cent of shareholders' equity, but hastened to add that they would never consider an open foreign currency position of this magnitude.

4. Eurocurrency portfolio management

The main considerations in portfolio management are liquidity and maturity transformation between liabilities and claims.

a. Liquidity

The U.S. banks told us that foreign banks active in the dollar market hold only very small amounts of demand deposits in U.S. commercial banks. These balances may be associated with correspondent facilities provided by banks in the United States or may serve as compensating balances against credit lines. But they do not rise pari passu with the total Euro-dollar liabilities of foreign banks. In general Eurobanks rely on their ability to fund in the interbank market.

b. Maturity transformation

Liquidity policy is a particular aspect of the general question of the degree of mismatching in the maturity structure of a bank's assets

and liabilities. Since there is normally a significant profit incentive for a bank to engage in greater maturity transformation, maturity mismatching is the area where each Eurobank's preferences between risk and return are most apparent. Thus, the setting of limits on mismatch ratios 1/ for various categories of assets and liabilities is a matter of high policy within each bank and is reviewed frequently by senior management, especially when interest rates are expected to change. Since most loans to non-banks are extended in the form of floating-rate credits, banks generally use the rollover period (the period after which the interest rate is adjusted) rather than the commitment period (the full period for which the funds are available to the borrower) in calculating the degree of mismatching between their liabilities and claims. We were told that significant mismatching occurs at times of heavy inflows and outflows of funds (e.g., in connection with the proceeds of oil exports). However, for credits of six months or more, the degree of mismatching between bank assets and the liabilities that are used to fund them is rather small when maturities are defined in terms of rollover dates.

c. Global portfolio management

As regards overall portfolio management, techniques vary considerably from bank to bank. To some extent this is a matter of national practice with, for example, foreign branches of Canadian banks being much more tightly controlled than those of U.S. banks. Beyond this it is often the case that the smaller banks employ a system of global asset management by the head office, whereas the largest banks with an extensive network of branches throughout the world usually have regional officers who enjoy a measure of autonomy in their operations. There is also a difference in approaches to banking. For example, we were told in London that many banks tend to regard growth in their overall balance sheet as a basic objective of their portfolio management. One banker expressed the view that this was a major reason for the precipitous reduction in spreads between borrowing and lending rates in the Euromarket during 1977.

Part IV. Macroeconomic Effects of Eurobanking

Throughout most of its history Eurobanking has generated a good deal of controversy. Many of the disagreements have turned on technical matters such as the applicability or nonapplicability of multiple expansion analysis to this kind of banking system, and, if such analysis is attempted,

1/ Mismatch ratios are obtained by dividing a bank's claims in a given maturity category (say 6 months) by all its liabilities that have the same maturity. The higher this ratio is above unity, the greater is the degree of maturity transformation by the bank in each maturity range. Some banks calculate various indices of their mismatch ratios in order to get an idea of the overall degree of maturity transformation in their aggregate portfolio.

differences on the size of the estimated multiplier. At the same time there has been a continuing difference of view on the broader issue of whether or not the Euromarket poses a serious threat to world economic stability. A number of distinguished economists and central bankers have argued in favor of imposing additional restraints on Eurobanks, but so far they have not been able to convince enough of their colleagues to bring about major changes.

It would be overambitious to assume that anything written here could settle deep-seated differences of this kind. What will be attempted is much more modest. A review will be made of some possible positions on the Euro-market, and an effort made to isolate the key theoretical and empirical differences that lead to varying views of the potential dangers of Eurobanking.

Broadly speaking, we found that in Washington, New York, London and Basle the most widely accepted view was that Eurobanking was not a serious threat to stability. In Frankfurt and Paris, on the other hand, views were rather different. While it was not felt that under existing conditions of economic slack there was any imminent danger, there was generally a certain amount of uneasiness about the potential for expansion at some future time.

This suggests a rather black and white distinction which is perhaps overdrawn. Indeed, it would be somewhat more accurate to use a threefold classification, although this, too, is a rather stylized presentation of a more continuous spectrum of views. The three views that are frequently encountered are, first, the approach of those who are concerned about the possible destabilizing effects of the Euromarket; second, the view of those who do not directly question the theoretical analysis of the first group, but argue against restraints on Eurobanks on pragmatic grounds; and third, the position of those who differ from the first group in a more fundamental way and argue that additional restraints on Eurobanks are neither necessary nor desirable. From the point of view of monetary analysis, the interesting differences are those between the first and third positions. As a practical matter, however, the failure of the first group to bring about major policy changes largely derives from the fact that most policymakers do not see the kind of clear and present danger which is regarded as necessary to justify major restrictive measures.

It is not surprising that an undercurrent of concern has persisted about Eurobanking, and that the view that there are current or potential problems strikes a resonant chord among those interested in monetary matters. There are few who would argue with the traditional generalization that money will not manage itself. Similarly, there are few who would deny that given the continuum of substitution between various forms of money and near money, Eurobanks either increase the quantity of money or have effects on its velocity. Thus, there is a natural inclination to be uneasy about the existence of an international banking system which attracts "deposits" and makes "loans" without being "managed" by any central bank. Indeed, there is a sense in which the Euromarket appears to operate outside the scope of any form of national control providing what Professor Machlup has called "stateless money." Moreover, the natural defense against any

form of intermediation that takes business away from regulated institutions such as banks, is that complaints will be made about unfair competition and pressures brought to bear to right the balance. In this case, however, Eurobanks are largely branches, departments, affiliates, or subsidiaries of the major domestic banks and, given that these banks share in any business diverted from their domestic operations, they are unprepared to form a lobby to attack this form of unfair competition.

Thus, not only does Eurobanking appear to be a substantial system of unregulated and uncontrolled banking, but, given its competitive advantage and absence of opposition to a continuation of that advantage, it is often argued that it will continue to grow at the expense of domestic banking. With reference to the financial system of the United Kingdom, Professor Sayers once referred to the possibility that bank deposits might become the small change of the system. In view of the past rates of growth of the Euromarket, it is possible to raise the specter that domestic deposits throughout the world could become the small change of the system. In view of all this it is understandable that some have felt that the Eurocurrency market is out of control, and some steps are required to bring it under some form of restraint. As former Bank of Italy Governor Carli put it in a paper 1/ in 1971:

... there is no system of restraints set up by monetary authorities on the operation of this market, which is thus theoretically capable of expanding itself without any limits except discretionary fractional reserves... .

In a later paper in 1972 2/ he suggested a number of steps including open market operations in the Euromarket by central banks acting collectively, and "the imposition of reserve ratios similar to those applied in domestic banking operations." Other critics of the Euromarket have been less explicit in putting forward concrete suggestions for additional restraints, but the general tenor of the comments has been enough to arouse a good deal of opposition.

Some of this opposition has been very moderate in nature--with no attempt being made to question the fundamental assumptions of those critical of the Euromarket. Those opposing action at present need simply point out that the net addition to the supply of new money in the hands of the world public that derives from the Euromarket can hardly have been a significant factor in increasing world demand. It is admitted that if this market continues to grow at its past rates, then at some stage its size will call for action. For the present and for some time to come, however, such action is not required.

1/ "Eurodollars: A Paper Pyramid?", Banca Nazionale de Lavoro Quarterly Review, June 1971.

2/ "The Eurodollar Market and Its Control," Swiss Institute of International Studies, Zurich, September 1972.

Moderate defenders of Eurobanking can also accept the charge that the Euromarket encourages the mobility of capital and in some cases leads countries to postpone needed adjustments. Indeed, they point out that when the "recycling" need arose, it was a good thing that a highly developed system of international lending and borrowing was already in place to provide adequate mobility of capital. They go on to point out, however, that the Euromarket is only one contributor to capital mobility, and that, in the absence of strict restrictions over the international activities of domestic capital markets, additional restraints on the Euromarket would still leave capital free to move with all the consequences that follow from this. In summary, those taking this position do not need to differ in principle from those urging action, but can merely argue that such action is not at present justified.

Members of a third group are prepared to go much further. They do not deny the contribution of the Euromarket to international capital mobility and the resulting opportunity of creditworthy countries to make their own choice in allocating expenditure over time; but they are likely to be much less tolerant of any limited attempts to restrict the mobility of capital. They tend to stress the fungibility of money, and point out, for example, that any success in limiting the ability of British banks to lend dollars would simply mean a transfer of business to U.S. banks lending from the United States, or perhaps to Canadian investment dealers arranging a Euro-bond issue in U.S. dollars in Paris. In short, if restrictions are to be really effective nothing less may be required than a return to the practices of the early postwar years when controls and discrimination were thought by many to constitute economic wisdom, and defenders of markets regarded as hopelessly out of date.

And what, it is asked, is supposed to be the gain from turning the clock back to a fragmented world? It is certainly true that, from time to time some surplus countries that have intervened heavily in the exchange market to prevent or reduce an appreciation of their currencies, have had increases in their reserves that have contributed to domestic expansionary effects. To the extent that some of these reserve additions could be attributed to the higher mobility of capital resulting from the existence of the Euromarket, then this market could be said to have contributed to inflation in these particular cases. This is, however, a very limited contribution in a small group of countries.

Those who do not see a need for additional restraint on the Euromarket are also quick to provide a reminder that in a market system the rates of interest at which a financial institution borrows and lends constitute the prime source of restraint on its activities. Credit rationing by means other than price is after all simply the consequence of imperfections in the system, and where markets are competitive, and allowed to remain so, price is the only rationing device. Borrowing and lending rates are free to move without impediment in the Euromarket, but with the removal of most of the restraints between the Eurodollar and dollar markets it is not surprising that there is a close relation between the rates in the two markets.

While everything depends on everything else, given the ability of the U.S. monetary authorities to influence the Federal funds rate, and given the close association between changes in that rate and both domestic dollar and Eurodollar deposit rates, there is some evidence that Eurodollar deposit rates are largely determined by U.S. monetary policy in the short run, and by U.S. real rates and the U.S. rate of inflation in the longer run. U.S. monetary policy in turn is determined in the light of all the forces playing upon the economy of the United States, including any developments resulting from the activities of the Euromarket itself. No one suggests that Savings and Loan Associations within the United States are not responsive to decisions on the part of the Federal Open Market Committee to change the terms on which borrowing and lending take place. And, it could be argued, the same reasoning applies to Eurobanks dealing in dollars.

This last point helps to illustrate the extent to which differences in the fundamental approach to monetary analysis can lead to differences in conclusions. Those who think that there are no fundamental theoretical differences between approaches to monetary analysis that put greater stress on interest rates and those that concentrate more on quantities would not expect a difference in approach to lead to a difference in results. Nevertheless, it is easy for some of those who stress quantities to conclude that the fact that the Euromarket has been expanding at a rapid rate is conclusive evidence of lack of control. On the other hand, anyone who regards interest rates (appropriately adjusted for anticipated inflation) as an important control device can hardly regard the Euromarket as uncontrolled when its rates for Eurodollar deposits are so closely connected to interest rates prevailing in the United States.

Either approach to monetary analysis should yield similar results, but the use of both is often safer. Interest rates, for example, certainly were a treacherous guide to central banks at various times in the past, with major declines in rates during recessions masking the fact that quantities were falling absolutely. Similarly, major increases in nominal rates during periods of inflationary expansion were sometimes wrongly regarded as evidence of monetary tightness when quantities were rising rapidly. The fact that enthusiasts of an interest rate or "credit conditions" approach to monetary policy have, from time to time, made mistakes in their policy prescriptions should not lead to a blind eye being turned to situations in which exclusive attention to quantities can also be misleading. In the case of the Euromarket, for example, an approach restricted to quantities requires appropriate comparisons with domestic magnitudes. The growth of deposits of central monetary institutions, for example, should be compared with the growth of official holdings held in reserve centers rather than domestic monetary magnitudes such as M1, M2, M3, etc. Similar allowance should be made for the special nature of bank and non-bank deposits in the Euromarket when searching for appropriate domestic comparisons. In short, a high rate of growth of the Euromarket is not in itself evidence of lack of control.

This is only one of the differences in approach between members of the first and third groups. Another example is the way in which it is assumed that national monetary authorities react to the existence of Eurobanks. The first group appear to think domestic monetary authorities pursue a target rate of growth of the money supply which is unaffected by the existence of the Euromarket. Thus to the extent that the Euromarket is of any quantitative importance and grows more rapidly than domestic banking systems, any given target rate of monetary growth will yield a higher rate of inflation than in the absence of Eurobanks. This assumes, however, that the monetary authorities select a target rate without close attention to the results that follow from it, and would not adjust that rate if it turned out to be inappropriately high.

Given the limited net size of the Euromarket, there has been little opportunity to test these hypotheses, and it is not surprising that most domestic monetary authorities do not regard the annual growth of the Euromarket as a particularly important variable. It is evident, however, that the sharp difference in view on the likely response of domestic monetary authorities to a more sizable Eurobanking system leads to differences in prescription.

V. Policy Issues

One of the difficulties we encountered in sounding out views on the inflationary dangers of the Euromarket under present conditions was that it was hard to arouse much interest among those concerned with economic policy. This was, of course, particularly the case with those who thought the question was not an important one, but it was also not easy to get considered views from those who felt that in a more rapidly expanding world economy some concern was justified. When the question was posed as a hypothetical one, some comments were forthcoming, but such questions do not get the kind of undivided attention given to more pressing matters. It is clear, however, that possible methods for restraining Eurobank lending, if such action were thought desirable, must include steps to limit the flow of funds into Eurobanks or to discourage lenders from making use of the Euromarket.

Reductions in the flow of funds in the Euromarket could be brought about either by making Eurobanking relatively less attractive to depositors, or by using moral suasion or controls to discourage deposits. A relative change in attractiveness in turn could be brought about either by raising the costs of Eurobanks or lowering those of domestic banks. It is indicative of the lessons derived from Eurobanking that most of those who have considered the question think that the most obvious direction to move is in lowering the competitive disadvantage of domestic banking either by reducing reserve requirements,^{1/} or by paying interest on reserves, or

^{1/} With, of course, appropriate offsetting open market operations to maintain the interest rates and monetary growth sought at the time.

some combination of both. As indicated earlier, a move of this kind is already afoot in the United States arising from domestic considerations and, if in fact steps are taken in this direction, the attractiveness of Eurodollar deposits as compared with U.S. dollar deposits will be correspondingly reduced with consequential effects on the growth of the Euro-market. It is difficult to see how anyone could legitimately complain if the competitive position of the domestic side of U.S. member banks is improved by the reduction in what is, in effect, a tax advantage available to the foreign side of their business, or enjoyed by other countries' banks dealing in U.S. dollars.

At the same time, it would be wrong to assume that a change of this kind, which reduced the rate of growth of the Eurocurrency market, would necessarily have any significant effect on the level of economic activity and the rates of inflation prevailing throughout the world. Members of what was described in Part IV as the third group find this notion analagous to the suggestion that in the absence of the rapid expansion of Savings and Loan Associations in the United States, there would have been a significantly lower rate of U.S. economic activity and inflation over the course of the last couple of decades. No one seriously maintains this position, which, in effect, requires the assumption that the Federal Reserve has ignored any effects on interest rates or on the velocity of M1 and M2 arising from the existence of these and other financial intermediaries. Thus, the third group would argue that to the extent that there was any noticeable effect on economic activity from a slower growth of the Euromarket, it would be surprising if over time this were not offset by domestic policy changes.

Another way of restraining deposits in the Euromarket would be to take advantage of the fact that a significant proportion of deposits is held by official institutions. If it were possible to convince these institutions that a useful purpose could be served by redirecting their placements to the reserve centers, then the net size of the Euromarket could be reduced below what it would have been. Again, the question arises whether in fact this would mean a reduction in the availability of credit in the world. Suppose, for example, that official institutions add \$10 billion to their holdings of U.S. Treasury Bills instead of adding \$10 billion in Euro-deposits during the coming year. To the extent that the U.S. market is an open one (and this is a widely held view in both North America and Europe), funds will flow back to the Euromarket, or borrowers in the Euromarket will redirect their borrowing to the U.S. banking or bond markets. In this case, the results will not be worth the trouble of carrying out the operation.

To the extent that the channels are not free, and there are certainly some institutional barriers in the U.S. money and capital markets, the results are still not very attractive from an international point of view. Suppose as much as \$1 or \$2 billion of the \$10 billion were in effect trapped within the U.S. market, all that would have been accomplished is that those with access to the U.S. market would benefit at others' expense. Thus, in the extreme, there would be more funds for condominiums in Miami and less for balance of payments and other financing for countries that would now be

unable to borrow. While this might ensure earlier recourse to conditional borrowing from the Fund, and hence in some cases a more timely process of adjustment, this method of bringing it about would be unlikely to receive widespread support.

This has suggested to some that there may be greater merit in a more direct approach in cases where further borrowing without adjustment is becoming clearly inappropriate. While, in their view, the main responsibility for avoiding excessive commitments lies with the banks and the countries themselves, some think that national regulatory authorities can be helpful in applying a timely correction. Given the strong competition among lenders from various countries, it is clear that a measure of collective effort among regulatory authorities might well be required. Some initial steps have been taken to achieve a fuller exchange of information among lenders.

There may also be a role for the Fund in this connection through its influence over the behavior of borrowers. Among other things, Fund surveillance over exchange rate policies will be directed to situations in which countries appear to have an unsustainable level of official or quasi-official borrowing, and this may help to bring about more timely adjustment. More generally, efforts to limit imbalances in the international system can contribute to the more prudent use of borrowing in private markets.

The central macroeconomic issue does not turn, however, on whether adjustment comes earlier or later for some individual borrowers. Rather, the question is whether action limited to restraints on the Euromarket alone would make an important contribution to world economic stability. The differences among those holding varying views on this issue do not in general spring from differences in objectives. It is common ground among those with whom we discussed this question that the rate of inflation is too high in virtually every country. It is also widely held that the inflation of today is in large measure the consequence of too high a level of demand in the past, and of expectations that the level of nominal demand in the future will grow rapidly enough to accommodate significant rates of wage and price increases. Further, few would disagree that monetary expansion is a crucial element in affecting the level of demand. Thus it is common ground that monetary expansion has been too rapid in the past and is bound to continue for some time at rates inconsistent with reasonable price stability.

Where then are the differences? Essentially they lie in the scope of the monetary action suggested. Some argue that the real cause for concern is Eurobanking and that it should be restrained. On occasion, they go further and, recognizing the close relationship between Eurobanking and international banking, suggest that international banking as a whole should be subject to some form of control. But given the close relationship between international banking and domestic banking in the countries that issue the vehicle currencies of the Eurocurrency and international banking markets, the most effective way to apply restraint to Eurobanking or international banking is by general monetary restraint in two or three major countries.

It is evident, however, that this deals with only part of the problem. Even if prices in terms of the dollar and the deutsche mark were relatively stable, this would provide no guarantee that prices in terms of sterling, lira, Canadian dollars, or the Argentine, Mexican or Chilean peso would be stable. In short, if inflation is a problem in almost all countries, then virtually every government must be involved in attempts to deal with it. Insofar as it is excessive banking expansion that permits inflation to persist, the solution is not to limit restraint to Eurobanking or to international banking as a whole; rather, it is the application of restraint by all national authorities over their financial systems. This is clearly recognized in the new Article IV, which, with its emphasis on the pursuit of orderly economic growth and reasonable price stability by individual members, recognizes that national economic policies are the key to a stable international monetary system. The primary contribution of the international community to stability thus derives from its influence over the policies of national governments. Some major countries have already made substantial progress in lowering wage and price increases, and a broadening of this group would make an important contribution to world stability. It needs to be recognized, however, that rates of inflation throughout the rest of the world cannot be determined by the actions of a few countries.

Statistical Appendix

There are three sections to this Appendix. The first outlines the conceptual framework developed by the BIS to measure the size of the Eurocurrency market and explains how this has been used in the present paper to compile Eurocurrency market estimates for a more broadly-defined area. The second section presents details of these broader market estimates, distinguishing various components of the market and drawing some comparisons between these estimates and other attempts to measure Eurobanking and international banking. The third section gives statistical details of some of the market developments discussed in the report, and provides notes on the sources of interest rates used in Chart I.

Oscar Altman, one of the early analysts of the Eurodollar market, noted that "It is obvious that the size of the Eurodollar market can be nothing but a guess--perhaps a very wild guess." (Staff Papers, December 1961.) Since the early 1960s when Altman made this pessimistic assessment, the statistical foundations for such estimates have undergone considerable improvement. It remains true, however, that estimates of the size and structure of the Eurocurrency market are subject to a considerable degree of uncertainty. Thus, while the data presented above and in this Appendix allow a reasonably accurate assessment of the major developments in the market, more detailed estimates of components should be treated with caution.

A. BIS concept of the Eurocurrency market

The BIS collations diverge in two respects from the simple definition of Eurocurrency positions given in the text (p. 2) (i.e., all bank asset or liability positions that are denominated in a currency other than the domestic currency of the bank concerned). First, the BIS focuses on the foreign currency positions of banks in the eight reporting European countries which account for a major share of all banks' foreign currency positions.^{1/} This grouping is referred to as the European Reporting Area. Second, the BIS definition of the net size of the Eurocurrency market is not based on the premise that all foreign currency-denominated bank assets and liabilities reflect Eurocurrency positions, but allows for certain exceptions. For example, the BIS concept of net Eurocurrency positions excludes some foreign currency-denominated bank assets including working balances in foreign currencies, time deposits or money market instruments denominated in debtor countries' currency, and trade bills and other trade financing paper denominated in foreign currencies. It also excludes the following kinds of bank liabilities denominated in foreign currency: bankers' acceptances and bank bonds issued on foreign national markets. In the BIS definition these assets and liabilities are all assumed to represent "normal" links between national financial markets that existed prior to the establishment of the Eurocurrency market and that would continue to exist in

^{1/} Belgium-Luxembourg, France, Germany, Italy, Netherlands, Sweden, Switzerland, and the United Kingdom.

its absence. Although statistical deficiencies prevent the identification of all of these types of foreign currency-denominated assets and liabilities in the data that is obtained from national authorities, the BIS does attempt to make allowance for some of these factors when presenting estimates of the net size of the narrowly-defined Eurocurrency market.

The BIS publishes two sets of data relevant to the narrowly-defined Eurocurrency market. The first, "External positions of reporting European banks in dollars and other foreign currencies," contains gross (i.e., total) foreign currency asset and liability positions vis-à-vis nonresidents of banks in the European Reporting Area, and distinguishes between positions with banks and non-banks. Foreign currency positions with residents, also disaggregated into those with banks and non-banks, appear as a memorandum item, but complete data on these positions are only available from the end of 1975 (see Appendix Table 1). By adding these two estimates, and including some allowances for the unreported positions vis-a-vis residents in earlier years, an adjusted series has been produced in Table 1 of gross Eurocurrency liabilities of banks in the European Reporting Area.

Table 2 contains comparable estimates adjusted to exclude the double-counting of balances held between banks in the European Reporting Area. These estimates are based on the second set of data published by the BIS under the title, "Estimated sources and uses of Eurocurrency funds." The successful operation of the Eurocurrency market arises from the ability of individual participating banks to fund foreign currency loans at the maturities required by borrowers, by obtaining similar maturity Eurocurrency deposits in the market. To no small extent this ability arises because of the existence of a large interbank market in Eurocurrency deposits.

Despite their importance in the operation of the market, however, most foreign currency positions between banks in the reporting area should be netted out of any measure of the net size of the market since they do not represent liabilities to ultimate lenders. This is because the analyst is frequently concerned with the original sources of Eurocurrency funds, and the provision of loans to ultimate borrowers. Eurocurrency placements by non-banks and central monetary institutions within the reporting area are all regarded as ultimate sources of funds to the market but, with specific exceptions, foreign currency flows between banks in the reporting area are regarded as redepositing transactions, and are therefore excluded from the "net" market estimates. The only Eurocurrency transactions of the commercial banks within the reporting area that are regarded as original sources of Eurocurrency funds are foreign currency assets that arise when these banks use domestic currency deposits to fund Eurocurrency lending. This is done either by (i) purchasing foreign currency spot and lending it in the Euromarket, or (ii) by lending domestic currency to a bank located in other countries in the reporting area, e.g., a deutsche mark loan by a bank in Germany to a bank in the United Kingdom. All other foreign currency transactions between reporting banks are regarded, conceptually, as part of the redepositing process and hence are netted out. Of course, various statistical difficulties prevent the data from mirroring this objective exactly, and that must be borne in mind when assessing the accuracy of net

size Eurocurrency market estimates. The present attempt to broaden the statistical coverage to include foreign currency positions of banks in a more broadly-defined area was carried out using a conceptual framework consistent with that developed by the BIS.

B. Estimating the size of the "more broadly-defined" Eurocurrency market

This section describes the methods used to estimate the size of the "more broadly-defined" Eurocurrency market which in addition to the banks in the European Reporting Area (the "narrowly-defined Eurocurrency market") includes banks in Canada, and Japan, and branches of U.S. banks operating in the following offshore centers: the Bahamas, Caymans, Panama, Hong Kong, and Singapore. The section goes on to indicate some of the data problems encountered, and compares the resulting estimates with other measures of Eurocurrency and international banking.

It was a relatively simple undertaking to obtain estimates of the gross size of the Eurocurrency market for the more broadly-defined area. Apart from the need to extrapolate the external liabilities of the branches of U.S. banks operating in the selected offshore centers for the years prior to 1969 (when these data first became available), published foreign currency-denominated liabilities to residents and nonresidents of banks in the additional reporting area were simply added to the (adjusted) estimates of the gross size of the more narrowly-defined Eurocurrency market. The results are shown in Table 3.

Incorporating the foreign currency positions of banks in the additional countries with the net size estimates of the narrowly-defined Eurocurrency market was rather more complicated; essentially it required consolidating the foreign currency positions of all banks in the more broadly-defined area. This process first involved isolating interbank foreign currency positions, and then distinguishing between the positions with banks located inside and outside the broader reporting area. The gross foreign currency liabilities of banks to non-banks in the more broadly-defined area were thus deducted from their total (gross) foreign currency liabilities to obtain estimates of their gross foreign currency liabilities to banks. Estimating the part of these positions with banks that related to banks in the more broadly-defined area required adding the following components to the (adjusted) BIS estimates of the European Reporting Area banks' gross liabilities to each other: (1) the foreign currency liabilities of banks in the European Reporting Area to banks in the additional area; and (2) the liabilities of banks in the additional area to all banks in the more broadly-defined area. The first component, apart from the need to approximate the (unpublished) value of foreign currency liabilities to banks in the selected offshore centers, was available from BIS sources. The second required more assumptions because of the limited geographical disaggregation of the liabilities of banks in the additional area.

The final step in estimating the net size of the more broadly-defined Eurocurrency market was to deduct from the gross foreign currency liabilities of banks in the broader area all interbank positions except those that

could be regarded as providing original sources of Eurocurrency funds to the broadly-defined market. As noted earlier, the BIS envisages three types of liabilities of reporting banks that provide original sources of funds: domestic currency loans made by banks in one European Reporting Area country to banks in another reporting country; domestic deposits switched into foreign currency and lent in the Euromarket, and the Eurocurrency deposits of the central monetary authorities in the reporting area. As the BIS already publishes estimates of the extent to which European Reporting Area banks are ultimate suppliers of funds to the narrowly-defined Eurocurrency market (see Table 2), the missing pieces of information were: (i) Eurocurrency placements (if any) of monetary authorities of countries within the European Reporting Area with banks in the additional area; (ii) the placement of domestic currency deposits (apart from working balances) of banks in the European Reporting Area with banks in the additional reporting area; and (iii) any original source Eurocurrency funds supplied by banks in the additional reporting area. In the absence of data, elements (i) and (ii) were assumed to be insignificant. With respect to element (iii), approximate estimates of the supply of original source Eurocurrency funds by banks in the additional reporting area were made on the basis of limited information concerning: (i) official Eurocurrency placements by the authorities of Canada and Japan; and (ii) information concerning the amount of net switching from domestic to foreign currencies by banks in the additional reporting area.^{1/}

Table 4 contains the results of the group's efforts to estimate the net size of the more broadly-defined Eurocurrency market. It is of interest, in this respect, that these estimates are comparable to similar estimates that the BIS has presented for a limited number of years in the textual comment of its annual reports.^{2/} It is also instructive to compare the working

^{1/} It was again assumed, in the absence of data, that direct domestic currency placements by banks in the additional reporting area with banks in the broader reporting area, were comprised only of "normal" working balances.

^{2/} In its Annual Reports for 1973/74 and 1974/75, the BIS provided estimates of the "net" size of the more broadly-defined Eurocurrency market in textual comments (see pp. 158-9 and 130, respectively). This practice was discontinued in subsequent annual reports. The table below compares these figures with the estimates in Table 4.

Estimated Net Size of More Broadly-Defined
Eurocurrency Market, 1972-74
(In billions of U.S. dollars)

	<u>BIS Estimates</u>	<u>Working Group Estimates</u>
1972	105	100
1973	155	148
1974	210	208

The small discrepancies between these two sets of estimates could well reflect BIS allowances for direct onlending from European Reporting Area banks to banks in the additional reporting area, plus the latter's onlending to banks in the broader reporting area.

group's estimates of the size of the more broadly-defined Eurocurrency market with a similar set of estimates prepared and published by Morgan Guaranty. Table 5 indicates that, at least in the aggregate, the two sets of estimates are of similar magnitude.

Like the present estimates, Morgan Guaranty's estimates of the gross and net size of the Eurocurrency market begin with the BIS data for the narrowly-defined market. Morgan Guaranty does not attempt to adjust these data for coverage breaks in the earlier years, nor does it include allowance for a special adjustment which the BIS makes with respect to the treatment of Trustee accounts held by Swiss banks. These two factors account for all of the discrepancies between the two sets of data shown for the European Reporting Area banks. As can be inferred from Table 5, the Morgan Guaranty estimates relate to banks in the same countries as the more broadly-defined area used in the present study, except that they also include the operations of banks in Bahrain, a recently established but rapidly growing financial center. Only marginal differences are apparent between the respective estimates of the positions of banks in Canada and Japan. The Morgan Guaranty figures for the gross foreign currency liabilities of banks in the five offshore centers are, however, substantially higher than the estimates in this paper because Morgan Guaranty includes the positions of non-U.S. banks in addition to U.S. branches in three of these centers (Hong Kong, Panama, and Singapore). This approach was considered, but rejected by the working group because it results in an increased resort to arbitrary assumptions to prepare the net market size estimates.

Table 6 contains a comparison of the present estimates of the size of the more broadly-defined Eurocurrency market with the BIS published estimates of international banking liabilities. The table shows how the two concepts may be reconciled and indicates that the close similarity between these two series over recent years is the result of offsetting factors that are roughly equal in size. The value of gross foreign currency liabilities to residents of banks in the more broadly-defined reporting area, which is included in the Eurocurrency estimates but excluded in the international banking estimates, has been about equal to the sum of the domestic currency liabilities of those banks to non-residents, and similar liabilities to nonresidents of banks in the United States. Both of the latter are included in the international banking series but excluded from the Eurocurrency compilations.

C. Developments in the Eurocurrency market: an overview of some highlights

The balance of this appendix presents some estimates and brief observations in support of various statements in the main body of the report which refer to developments in the size and nature of the Eurocurrency market. The average annual growth rates of the Eurocurrency market, from 1964-77, have all been in the range of 26-30 per cent per annum, whether measured net or gross or on a narrow or broader basis.

1. Sources of Eurocurrency funds

Table 4 classifies the banks' estimated foreign currency liabilities into three major categories of holders: central monetary institutions, non-banks, and commercial banks. This disaggregation provides some interesting insights into the relative contribution to the growth of the Eurocurrency market that has been made by each of these groups of depositors.

a. Official placements by central monetary institutions ^{1/}

Official placements in the Eurocurrency market have made a major contribution to the growth of net Eurocurrency liabilities. On average, annual official placements grew over one third faster than the estimated 27 per cent per annum increase recorded in total Eurocurrency liabilities (after allowance for interbank redepositing). This high level of official placements in the Eurocurrency market caused the ratio of identified official Eurocurrency placements to total foreign exchange reserves (as reported in IFS) to rise from about 10 per cent at the end of 1964 to about 40 per cent at the end of 1977.

A regional breakdown of total official placements is also of interest. Our estimates suggest that since 1974 official claims on Eurocurrency banks held by the authorities of the major oil exporting countries have accounted for the bulk of new official placements in the Eurocurrency market. These placements are estimated to have contributed about 70 per cent of total official placements in the period subsequent to the end of 1973. Official reserve placements in the Eurocurrency market by the authorities of the industrial countries (which, on average, had accounted for between one fifth and one third of total official placements in the years 1964-73) appear to have risen fairly slowly since end-1973, when they contributed about one third of the total. As a result, their share of total official placements at the end of 1977 is estimated to have declined to well under 20 per cent. Official Eurocurrency placements by the authorities of the non-oil primary producing countries presently account for almost one third of the total official placements of this kind.

b. Placements in the Eurocurrency market by non-banks

Eurocurrency placements by non-banks are also an important original source of funds for the Eurocurrency market. Whereas this group was the

^{1/} The estimates of official placements in the Eurocurrency market that are used throughout this paper are primarily based on information on the composition of foreign exchange reserves reported to the Fund by most member countries for publication, in aggregate form, in the Fund's Annual Reports. In the case of major oil exporting countries, this directly reported information was supplemented with Fund estimates.

predominant source of Eurocurrency funds in the 1960s (when its contribution frequently exceeded one half of the total), the growth of such placements (although extremely rapid at an estimated 23 per cent per annum over the period 1964-77) did not keep pace with "original source" placements by either commercial banks or central monetary institutions. As a result, by the end of 1977 non-banks were no longer the largest original source of placements.

It is also possible to determine the broad geographical location of these non-bank entities supplying funds to the Euromarket. For example, in recent years well over one half of total non-bank placements in the Eurocurrency market have been made by residents of the more broadly-defined area. Furthermore, almost one half of placements by resident non-banks in the broader area apparently consist of resident non-banks making foreign currency deposits with banks in their own country. For example, at the end of 1977 when total non-bank placements in the Eurocurrency market amounted to about \$127 billion, some \$78 billion was estimated to have come from residents of the reporting area, including \$32 billion lodged with banks by depositors of the same country. The United States is the main source of placements from non-bank entities residing outside the reporting area. Although the estimates are subject to a considerable margin of error, non-bank residents of the United States probably accounted for about one half of total non-bank placements from outside the reporting area at end-1977. This share appears to have been fairly steady over most of the years under study.

c. Original source placements in the Eurocurrency market by commercial banks

According to the estimates in Table 4, the contribution of commercial banks as "original source" suppliers of Eurocurrency funds amounted to just over one third of the total of such funds as of the end of 1977. Over the period 1964-77, these placements grew at about the same average rate as the total. After excluding redepositing between banks in the reporting area, the original source contributions of commercial banks within the reporting area are relatively minor (in recent years they contributed only about one fifth of all commercial bank original source placements in the market). The bulk of original source placements by commercial banks therefore reflects placements by banks outside the reporting area, and, in recent years Eurocurrency placements by banks in the United States appear to have accounted for about one third of all commercial bank funds emanating from outside the reporting area.

2. The geographic location of the Eurocurrency market

Another interesting question concerns the changes that have taken place in the geographic location of the Eurocurrency market itself. Although data deficiencies again prevent precise measurement, it is apparent that London has long held, and continues to hold, the predominant position in the market (see Table 7). In recent years, banks operating in the United Kingdom have accounted for more than one third of the gross foreign currency liabilities

of all banks in the broader-reporting area, and they have managed to hold about this proportion despite the substantial increases in business transacted through branches of U.S. banks located in offshore centers. By the end of 1977, for example, foreign currency liabilities booked through branches of U.S. banks operating in the five main offshore centers exceeded \$100 billion (or nearly one fifth of the gross Eurocurrency market). This compares with the position at end-1969 when similar liabilities only amounted to \$1 billion (or about 4 per cent of the gross market at that time). Some observers view the rapid buildup of the Eurocurrency business of these branches as the New York contribution to the market, as most of the business booked in these branches is actually transacted in New York. From this point of view, New York is the only Eurobanking center that operates on a scale comparable to London. The next largest centers, Paris and Luxembourg, both presently account for about one tenth of the gross Eurocurrency liabilities of banks in the broader-reporting area.

3. Interest rates

In addition to its analysis of the growth of the Eurocurrency aggregates, the text also discusses interest rate developments. Chart I (p. 7) shows the relationship among the rate of interest on Federal Funds in the U.S., the effective cost of U.S. CDs in the secondary market, and the three-month Eurodollar rate during the 1976-78 period. U.S. CDs in denominations of over \$5 million have a required reserve ratio of 6 per cent, while Eurodollar deposits carry no such requirement. Thus for purposes of comparison the effective cost to banks of borrowing via U.S. CDs can be considered to be $1/(1-0.06)$ times the U.S. CD rate. The effective rate on U.S. CDs in Chart I is based on the average of the range of secondary market offering rates for three-month negotiable CDs, adjusted for reserve requirements, while the Eurodollar rate is the weekly average of daily figures for three-month deposits in London. Strictly speaking, the comparison should be between the adjusted secondary market rates on CDs of a particular group of banks in New York and that for Euro-CDs of branches of the same banks in London, but time series of this kind are not available on a consistent basis.

While the available series for the U.S. CD and Eurodollar deposit rates are not strictly comparable, the extremely close relationship between both the levels and rates of change of these two interest rates is very striking. This correlation no doubt reflects arbitrage activities on the part of U.S. banks, which adjust their borrowing between U.S. CDs and Eurodollar deposits until the effective cost of funds is equalized in the two markets. During the period covered by Chart I the mean difference between the Eurodollar rate and the adjusted U.S. CD rate was 1 basis point with a standard deviation of 8.9 basis points. The correlation coefficient for the levels of these two interest rates was 0.99, while that for weekly changes was 0.75.

A second striking feature of Chart I is the high correlation between movements in the U.S. CD and Eurodollar rates on the one hand, and changes

in the Federal Fund rate on the other. The correlation coefficients are:

	<u>Levels</u>			<u>Weekly First Differences</u>		
	(1)	(2)	(3)	(1)	(2)	(3)
(1) Eurodollar Rate	1.0	-	-	1.0	-	-
(2) U.S. CD Rate (adjusted)	0.994	1.0	-	0.752	1.0	-
(3) Federal Funds Rate	0.980	0.982	1.0	0.527	0.542	1.0

Table 1. The Gross Size of the Narrowly-Defined Eurocurrency Market, 1964-77

(In billions of U.S. dollars)

	Published Estimates				Adjusted Estimates					
	Nonresidents		Residents		Nonresidents		Residents			
	Total	Of which: nonbanks	Total	Of which: nonbanks	Total	Of which: nonbanks	Total	Of which: nonbanks		
1964	12	...	...	...	13	4	3	1	16	6
1965	14	...	...	...	15	5	4	1	19	6
1966	18	...	...	...	20	6	6	2	26	8
1967	22	...	...	...	24	7	9	3	33	9
1968	34	8	...	...	35	9	11	3	47	12
1969	57	12	...	...	61	16	21	4	81	19
1970	75	14	...	...	81	19	25	4	105	23
1971	98	13	4	...	106	21	30	4	136	25
1972	132	15	4	...	140	23	43	5	183	28
1973	192	23	8	...	203	34	62	8	265	42
1974	221	30	13	...	235	45	75	13	310	58
1975	259	31	13	...	276	48	78	13	354	61
1976	311	39	15	...	329	57	88	15	417	72
1977	383	46	17	...	408	70	104	17	512	88

1/ Including the value of trustee funds held by Swiss banks.

Table 2. The Net Size of the Narrowly-Defined Eurocurrency Market, 1964-77

(In billions of U.S. dollars)

	Net Foreign Currency Liabilities of ERA Reporting Banks to:								
	All Creditors	Nonbanks			Banks			All Banks	
		Inside ERA	Outside ERA	Total	Inside ERA	Outside ERA	Total	CMI ^{1/}	Other Banks
1964	12	2	3	6	4	2	6	2	4
1965	13	3	4	6	4	2	6	4	2
1966	16	4	4	8	5	4	9	5	4
1967	21	5	4	9	6	5	12	5	7
1968	30	8	6	12	9	9	18	7	11
1969	44	12	7	19	10	15	25	8	17
1970	57	14	9	23	14	21	34	14	20
1971	71	16	9	25	16	30	46	16	30
1972	91	18	11	28	17	46	64	26	38
1973	132	28	14	42	23	67	90	34	56
1974	177	37	21	58	31	88	119	55	64
1975	205	39	22	61	41	103	144	64	80
1976	247	45	27	72	43	132	175	81	94
1977	300	55	33	88	54	158	212	108	104

^{1/} These estimates are based on an amalgamation of BIS and Working Group estimates. They differ slightly from the estimates of central monetary authority placements in the more broadly-defined Eurocurrency market (see Table 4) because of small amounts of official Eurocurrency placements with banks outside the narrowly-defined reporting area.

Table 3. The Gross Size of the Broadly-Defined Eurocurrency Market, 1964-77

(In billions of U.S. dollars)

	<u>Gross Liabilities To:</u>			<u>Gross Liabilities To:</u>			Estimated Gross Size of BRA 3/
	Nonresidents			Residents			
	ERA 1/	ARA 2/	BRA 3/	ERA 1/	ARA 2/	BRA 3/	
<u>Total liabilities</u>							
1964	13	6	20	3	2	5	25
1965	15	6	22	4	2	6	28
1966	20	6	26	6	3	9	35
1967	24	8	32	9	3	12	44
1968	35	8	44	11	3	14	58
1969	61	12	72	21	5	26	98
1970	81	16	97	25	5	30	127
1971	106	23	129	30	6	36	165
1972	140	31	171	43	8	51	222
1973	203	54	257	62	12	74	331
1974	235	78	312	75	16	91	403
1975	276	96	372	78	14	92	464
1976	329	126	455	88	17	105	560
1977 Preliminary	408	144	552	104	19	123	675
<u>Of which vis-a-vis</u>							
<u>nonbanks</u>							
1964	4	2	6	1	2	3	9
1965	5	2	7	1	2	3	10
1966	6	2	7	2	3	5	12
1967	7	2	8	3	3	6	14
1968	9	2	11	3	3	6	17
1969	16	3	19	4	4	8	27
1970	19	4	22	4	5	9	31
1971	21	4	25	4	5	9	34
1972	23	5	29	5	7	12	41
1973	34	8	42	8	11	19	60
1974	45	11	56	13	11	24	79
1975	48	13	61	13	11	24	85
1976	57	19	76	15	13	28	104
1977 Preliminary	70	25	95	17	15	32	127

1/ ERA (= European reporting area) adjusted as per Table 1.

2/ ARA (= additional reporting area).

3/ BRA (= broader reporting area).

Table 4. The Net Size of the More Broadly-Defined Eurocurrency Market, 1964-77

(In billions of U.S. dollars)

	Net Foreign Currency Liabilities of BRA Reporting Banks to:								
	Nonbanks				Banks				All Banks
	All Creditors	Inside BRA <u>1/</u>	Outside BRA <u>1/</u>	Total	Inside BRA	Outside BRA	Total	CMI <u>2/</u>	Other Banks
1964	17	4	5	9	3	5	8	2	6
1965	19	5	5	10	4	5	9	4	5
1966	23	7	5	12	5	6	11	5	6
1967	30	8	6	14	5	10	15	5	10
1968	38	11	6	17	8	12	20	7	13
1969	50	17	10	27	7	16	23	8	15
1970	62	20	11	31	9	22	31	14	17
1971	78	23	11	34	11	32	43	16	27
1972	100	27	14	41	10	49	59	26	33
1973	148	43	17	60	14	73	88	35	53
1974	208	52	27	79	22	107	129	58	71
1975	240	55	30	85	31	124	155	68	87
1976	294	65	39	104	25	165	190	85	105
1977 Prelim.	375	78	49	127	42	206	248	112	136

1/ The disaggregation of these liabilities to nonbanks both within and outside the broader reporting area (BRA) is rather tentative. It is based, amongst other things, on the assumption that all Japanese bank external liabilities to nonbanks are with nonbanks in the United States and hence, outside the BRA, whereas all of the offshore center banks' liabilities to nonbanks outside the United States are assumed to be with residents of BRA countries.

2/ These estimates for central monetary institutions (CMI) holdings are based on the amalgamation of BIS and Fund data.

Table 5. Comparison of Morgan Guaranty Estimates with Working Group Estimates of the Size of the More Broadly-Defined Eurocurrency Market, 1970-77

(In billions of U.S. dollars)

	Estimates of Gross Foreign Currency Liabilities of Banks in:										Estimated Net Foreign	
	European Report-		Canada and		Five Offshore		Bahrain		All Countries		Currency Liabilities	
	Working	MG	Japan	MG	Centers	MG	MG	MG	Specified	MG	MG	Working
Area	Group ^{1/}	Working	Group	Working	Group	Working	Group	MG	MG	MG	Group ^{2/}	Group ^{3/}
1970	91	105	14	16	6	6	6	--	111	127	65	62
1971	118	136	17	18	10	10	10	--	145	165	85	78
1972	159	183	23	23	18	15	15	--	200	222	110	100
1973	234	265	34	36	34	29	29	--	303	331	160	148
1974	272	310	48	50	50	42	42	--	370	403	215	208
1975	337	354	49	51	67	59	59	2	457	464	250	240
1976	399	417	56	58	91	84	84	6	559	560	310	294
1977 ^{4/}	490	512	61	63	117	101	101	16	684	675	380	375

Sources: MG, Data provided by Morgan Guaranty.

Working Group estimates as provided in the Tables indicated.

^{1/} See Table 1.

^{2/} See Table 3.

^{3/} See Table 4.

^{4/} Preliminary.

Table 6. Reconciliation of Gross Eurocurrency Liabilities (For More Broadly-Defined Reporting Area) With International Banking Liabilities, 1964-77

(In billions of U.S. dollars)

	Less Gross		Plus		Sub- Total	Liabili- ties to Non-Resi- dents of Banks in the United States	Total	Less: Allowance For Swiss Bank Trustee Accounts	Adj. of Liabili- ties of U.S. Bank Branches ^{1/}	Gross Liabili- ties	Published BIS Estimates of International Banking Net Liabili- ties ^{2/}
	Gross Foreign Currency Liabili- ties to Residents of Banks in BRA	Domestic Currency Liabili- ties to Non-Resi- dents of Banks in BRA	Domestic Currency Liabili- ties to Non-Resi- dents of Banks in BRA	Liabili- ties to Non-Resi- dents of Banks in the United States							
1964	25	5	12	32	17	49	...	...	...	...
1965	28	6	12	34	18	52	...	...	...	...
1966	35	9	12	38	22	60	...	...	...	...
1967	44	12	13	45	24	69	...	...	...	...
1968	58	14	15	59	28	87	...	...	...	...
1979	98	26	16	88	38	126	...	...	...	...
1970	127	30	20	117	30	147	...	...	...	...
1971	165	36	27	155	24	179	...	...	...	...
1972	222	51	27	198	30	228	...	...	...	...
1973	331	74	33	290	39	329	...	...	...	...
1974	403	91	42	354	60	414	-15	-42	3/	4/	
1975	464	92	42	414	59	473	-17	-8			
1976	560	105	47	502	71	573	-18	-10			
1977	675	123	61	613	78	691	-25	-9			

1/ Difference between external liabilities of branches of U.S. banks in selected offshore centers that provide geographical details of their positions and those that do not report such detail.

2/ Derived by deducting from gross liabilities the BIS estimates of redepositing among reporting banks as published on p. 98 of the BIS Annual Report for 1976/77 with respect to banks' international lending

3/ Comprised of all liabilities of U.S. bank branches in the offshore centers. See footnote 4. activities.

4/ This estimate contains a break in coverage in that it excludes liabilities of banks in the selected offshore centers that are included in the later years.

5/ Preliminary.

Table 7. The Location of the Broadly-Defined Eurocurrency Market, 1964-77

(In per cent)

	U.S.											
	Branches in		Individual European Centers									
	Canada	Japan	Offshore Centers	ERA	United Kingdom	Belgium-Luxembourg	France	Germany	Italy	Netherlands	Sweden	Switzerland
Relative shares of gross foreign currency liabilities to residents and nonresidents												
1964	17.5	15.1	2.4	65.0	27.4							
1965	14.4	14.1	2.8	68.7	29.6							
1966	10.7	11.8	3.2	74.4	33.7							
1967	9.7	12.0	3.0	75.4	35.9							
1968	7.8	9.7	3.4	79.1	39.7							
1969	7.5	5.7	3.6	83.2	42.2							
1970	6.7	5.4	4.4	83.5	40.8							
1971	4.7	6.4	5.9	83.0	39.1							
1972	4.4	6.2	6.9	82.5	39.2							
1973	4.4	6.5	8.9	80.2	39.2							
1974	4.2	8.3	10.4	77.1	39.8							
1975	3.6	7.5	12.6	76.3	39.4							
1976	3.8	6.7	15.0	74.6	36.0							
1977 ^{1/}	3.6	5.7	15.0	75.9	34.0							
Relative shares of gross foreign currency liabilities to nonresidents												
1964	14.3	15.0	3.3	67.5	27.4	5.2	7.5	2.8	10.4	2.8	0.9	10.5
1965	11.7	14.3	3.9	70.1	29.1	5.7	7.8	2.2	10.5	3.6	1.1	10.1
1966	8.8	11.6	4.5	75.1	34.2	6.6	8.0	1.4	10.3	4.6	1.3	8.6
1967	7.9	12.6	4.4	75.1	35.2	6.5	8.7	1.1	9.8	3.7	0.9	9.2
1968	6.4	9.9	4.7	79.0	40.1	6.2	10.9	1.3	8.7	3.4	0.7	7.6
1969	6.3	6.0	5.1	82.6	42.0	5.8	10.9	3.0	9.1	3.8	0.7	7.2
1970	6.0	5.5	6.1	82.4	39.8	7.5	10.0	3.2	10.3	4.4	0.5	6.7
1971	5.2	5.5	8.1	81.3	38.0	8.7	11.6	2.6	10.3	4.1	0.5	5.4
1972	5.0	4.6	9.4	81.0	36.7	9.1	11.8	2.4	11.5	3.9	0.4	5.2
1973	4.7	5.3	12.0	78.0	37.0	9.7	11.1	2.7	9.7	3.9	0.4	3.8
1974	3.9	8.1	14.1	73.9	37.3	10.5	10.9	2.6	4.6	4.2	0.3	3.5
1975	3.4	7.1	16.5	73.0	36.2	10.2	10.7	2.6	4.2	4.6	0.5	3.4
1976	3.4	6.2	19.2	71.2	34.1	10.9	11.2	3.1	3.4	4.5	0.5	3.5
1977 ^{1/}	3.2	5.0	19.2	72.6	32.5	12.4	11.9	2.9	4.1	4.8	0.6	3.4

^{1/} Preliminary.

Table 8. Publicized Gross Eurocurrency Credits
by Nature of Borrower, 1974-76

(In billions of U.S. dollars)

	1974	1975	1976
Central government	7.5	4.4	5.7
State or local government	1.0	0.4	0.9
Central monetary institutions	<u>1.5</u>	<u>1.6</u>	<u>2.5</u>
<u>Government</u>	10.0	6.4	9.1
Public ent.: nonfinancial	6.8	4.7	8.4
financial	<u>3.6</u>	<u>3.5</u>	<u>3.6</u>
<u>Total public</u>	20.4	14.6	21.1
International organizations	<u>--</u>	<u>0.1</u>	<u>0.4</u>
<u>Total official</u>	20.4	14.7	21.5
Private	<u>8.1</u>	<u>5.9</u>	<u>6.3</u>
<u>Total</u>	<u>28.5</u>	<u>20.6</u>	<u>27.8</u>
Memo item: Expressed as a share of total borrowing (in per cent):			
Central government	26.3	21.4	20.5
State or local government	3.5	1.9	3.2
Central monetary institutions	<u>5.3</u>	<u>7.8</u>	<u>9.0</u>
<u>Government</u>	35.1	31.1	32.7
Public ent.: nonfinancial	23.9	22.8	30.2
financial	<u>12.6</u>	<u>17.0</u>	<u>12.9</u>
<u>Total public</u>	71.6	70.9	75.9
International organizations	<u>--</u>	<u>0.5</u>	<u>1.4</u>
<u>Total official</u>	71.6	71.4	77.3
Private	<u>28.4</u>	<u>28.6</u>	<u>22.7</u>
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>