

**The Euromarket and OPEC Oil Revenues**  
**A Study of Banking Intermediation**

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## 1. INTRODUCTION

The OPEC price escalations of 1973-74 and 1979-80 have had a crucial effect on the world economy and on international trade. Non-OPEC countries have had to adjust to higher petroleum prices. They have tried to develop alternative energy resources and have invested in various energy conservation measures.

One effect of all these changes has been an increase in the need for funds, partly in order to finance the above-mentioned adjustments but also to be able to cover balance of payments deficits. In both cases, there has been an increasing need for financial intermediation. A large part of this demand for finance has been met by Western banks through the so-called Eurocurrency market.

This paper concerns the change in financial intermediation over the time period 1973-82. Central issues include the actual functioning of the international financial markets, the roles played by the banks and the conditions under which they operate. Another theme is the interdependency between growth and decline of OPEC oil revenues on the one hand and banking intermediation on the other.

To be more specific, the main purposes of this paper are:

- a) to analyse year by year the changes in the Eurocurrency market and its long-term extension, the Eurobond market, in terms of instruments, volumes and pricing principles;
- b) to investigate from the point of view of a banking firm, the costs associated with Eurocurrency deposits and credits, in order to find out relevant principles for pricing the service of intermediation;
- c) to examine possible interdependencies between, on the one hand, the generation of OPEC oil revenues and corresponding credits and on the other, expansion of the Eurocurrency market. The aim is then to explain the pricing behaviour of banks operating on the international financial markets over the period 1973-82.

These three purposes lie behind the study of the international financial markets (in Section 2), the analysis of risk and return for banks as intermediators (in Section 3) and the search for an interdependency between the development of OPEC oil revenues and the conditions under which banks have been operating in the Eurocurrency market from 1973-82 (in Section 4). Finally, Section 5 is devoted to conclusions that can be drawn from the study.

## 2. THE GROWTH OF INTERNATIONAL FINANCIAL MARKETS

### 2.1 The Eurocurrency Market

It was only 25 years ago that it all started. At that time - at the end of the 50's - there had been several foreign exchange "crises", leading by 1957 to Britain putting restrictions on the use of sterling in foreign transactions. With that background British banks started to finance foreign transactions by dollar deposits. These dollars originated outside the US and can be traced to central banks in Europe, South-East Asia and oil-producing countries in the Middle East as well as to foreign subsidiaries of US firms.<sup>1</sup>

From 1958 onwards European banks were able to offer dollar financing to customers and correspondent banks - leading to the establishment of a European market in dollar deposits and loans. The unique feature of this market was its lack of control from the US. Among the earliest depositors were Soviet-owned banks - Moscow Narodny Bank in London and Banque Commerciale de l'Europe du Nord<sup>2</sup> in Paris.

At the end of 1958 several foreign exchange restrictions were lifted in Western Europe making it easier for non-residents to convert currencies. This led to a rapid expansion of the European market for external finance, now to be

called the Eurocurrency market or the Euromarket.

The Eurocurrency market has been widely used for credit denominated in a currency different to that where the bank itself is located. For example, a British bank lending dollars to a customer in London, Paris or even in New York is acting on the Eurocurrency market.

The first statistics available concerning the size of the Eurocurrency market are from 1963, when the Bank for International Settlements (B.I.S.) announced that the total short-term assets of foreign currency held by commercial banks in the nine "reporting" countries were \$12.4b (of which 75% were in \$US).

Then came 1965, with the introduction of the Voluntary Foreign Credit Restraint Program (VF CR) in the US. The purpose of this restraint was to limit US domestic banks lending directly to foreigners, thereby improving the US balance of payments. However, the effect was different. US companies started to use the facilities of the Eurocurrency market, and national banks began to develop a network of subsidiaries in the main financial centres, among which London took the lead.

Regulation Q was then introduced, imposing ceilings on the interest rates banks could offer on deposits in the US. There was an immediate transfer of capital into the Eurocurrency market, where interest rates were unaffected by this regulation.

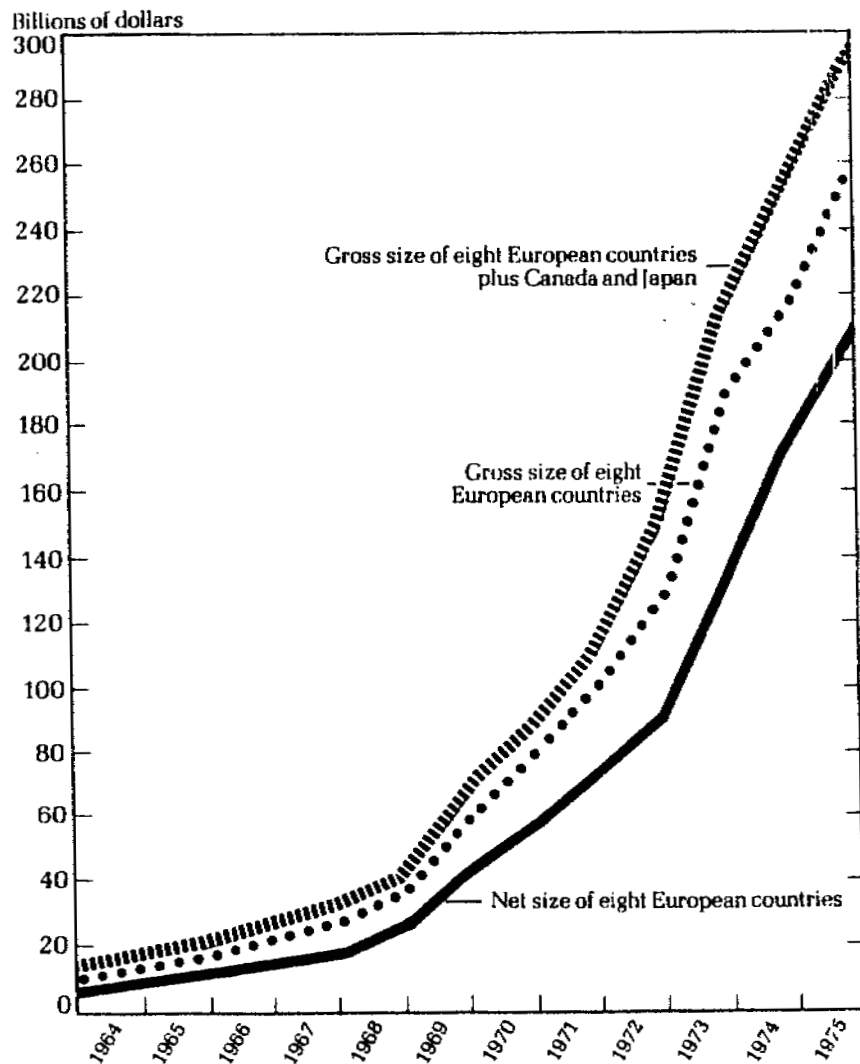
Foreign subsidiaries borrowed capital in Europe and transferred it back to their mother-company. The Federal Reserve Board tried to stop this by imposing a 10% reserve requirement on foreign loans. But it was too late; the US capital market was

already over-liquid. Furthermore, Western European countries had started to borrow heavily on the Eurocurrency market, and the annual expansion of the market was estimated at around 30% in those days. (see Figure 1).

Figure 1

Size of the Eurocurrency Market

(foreign liability positions of banks in reporting countries)



Source: Bank for International Settlements, Annual Reports, & Crockett (1977) p268.

The reason for this rapid expansion was not only a difference in interest rates. For many foreign companies like US subsidiaries, the Euromarket proved more convenient, as they could place short-term surpluses in accounts in the country where the income was earned and in a currency that was convenient for future payments (see Crockett, 1977, p177).

When the market began to grow in 1970 it immediately tended to spread worldwide. "Offshore" branches were opened in places like Nassau, the Cayman Islands, Panama, Singapore, Luxembourg, Kuwait, Bahrain, the British Virgin Islands, Granada, Curacao and Caracas. Of special interest are Bahrain, Caracas and Kuwait, as these offshore places were organized mainly to channel OPEC's financial surpluses.

The development of Hong-Kong and Singapore as offshore centres resulted in a parallel market being formed - the "Asian-dollar market". However, this market was mainly formed to serve the Far East region.

Thus, when in 1973-74 OPEC raised its oil prices and consequently received substantial surpluses, the Eurocurrency market was to serve as an intermediary between borrowers (the oil consumers) and lenders (the oil producers). It also became a market in which to place the liquidity of oil producers before its final disposition was decided upon (i.e. before the choice was made between shares, bonds and estates).

In addition to the OPEC financial surpluses of 1973-74 and 1979-80 the Eurocurrency market was influenced by the weakness of the dollar in 1978. At that moment it became profitable for US banks to place capital in this market,

resulting in a 40% expansion in their foreign lending in dollars (see Johnston, 1983, p23).

In total, all these transactions led to an extremely large expansion of the Eurocurrency market, and also to its diversification into different "instruments". The size and growth of the market can be measured in several ways - two main alternatives are those proposed by the B.I.S. and by Morgan Guaranty (see Johnston, 1983, Ch. 3). The data used in this paper will be based mainly on the B.I.S. statistics (see Table 1).

As concerns instruments, the original ones were short-term time deposits, but in order to meet the growing demand for medium-term alternatives, the banks presented, in 1966, the first negotiable time deposit - a London Certificate of Deposit (CD). Then, at the beginning of the 1970's, a great improvement came in the form of syndicated medium-term credits. The market for these instruments grew rapidly and at the end of the 1970's it amounted to a large part of the total stock of Eurocredits (see Table 1).

Syndication means that a number of banks join together in order to lend money to one customer. The group of banks is formed by a managing bank or a group of co-managers that lends capital to a single customer. The reasons for organising such joint projects are that:

- a) the risk of the customer becoming insolvent is shared between a set of banks;
- b) the customer is protected from the influence of one single lender;
- c) it is extremely difficult for a borrower himself to organize such a joint lending, as there is a long tradition that a customer has to negotiate with

**TABLE 1: THE GROWTH OF THE EUROCURRENCY MARKET 1973-82**

(Annual Net Additions in \$b)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Stock at end 1982
A. Total international lending by reporting banks	87.7	72.2	78.8	105.6	109.1	179.7	205.9	241.2	264.7	173.5	1686.7
B. Minus: Double-counting among banks	n.a.	n.a.	38.8	35.6	34.1	89.7	80.9	81.2	99.7	78.5	666.7
C. Net international bank lending (A-B)	n.a.	n.a.	40.0	70.0	75.0	90.0	125.0	160.0	165.0	95.0	1020.0
D. International lending to OPEC <sup>2</sup> by reporting banks	6.5 <sup>3</sup>	2.5	5.0	9.5	11.0	16.7	7.2	7.0	4.3	8.1	78.6
E. International borrowing from OPEC by reporting banks	16.0 <sup>3</sup>	26.5	7.5	12.5	12.5	3.3	37.4	41.8	3.3	-18.3	135.2
F. Long & medium term syndicated Euro-credits (part of A)	21.9	29.3	21.0	28.9	41.8	70.2	82.8	81.6	134.8 <sup>4</sup>	90.8	n.a.

1. Group of Ten countries and Switzerland, Austria, Denmark and Ireland and the offshore branches of US banks located in the Bahamas, Cayman Islands, Panama, Hong Kong and Singapore.
2. OPEC countries plus Bahrain, Brunei, Oman, Trinidad and Tobago.
3. Stock at the end of 1973.
4. \$41b is related to takeover activity in North America.

Source: Bank of International Settlements, Annual Report, various issues.

each bank in turn. Consequently, a syndicated Eurocredit is aimed at the customer who wants to obtain large scale credit in a reasonable amount of time.

The fees for starting such a credit are slightly higher than for a regular Euroloan (see Dufey & Giddy, 1978, p248 and Johnston, 1983, p169). The following ranges give examples of the size of the fees:

- a) lead manager : 0.375 to 0.625% of total credit.
- b) co-managers : 0.25 to 0.50% of manager's proportion of total credit.
- c) participants : \$1m: 0.125 to 0.25% of manager's proportion of total credit.  
\$3m: 0.25 to 0.375% of manager's proportion of total credit.  
\$5m: 0.375 to 0.50% of manager's proportion of total credit.

This formula implies that the larger the loan the higher these "front-end" fees. "Jumbo"-loans of \$1-3b will become rather expensive.

However, spread is a far more important cost to the borrower than the fees. Spread is the additional rate of interest above LIBOR that a customer has to pay for a credit.<sup>3</sup> One would expect that the longer the maturity of a loan the higher the spread, but such a correlation cannot be proved empirically (see Johnston, 1983, p173). The spread might vary between 0.50% and 2% depending mainly on who the borrower is and what the actual capital market conditions are. And in this syndicated Eurocurrency market maturities may be found of between three and ten years mainly depending on the credit-worthiness of the borrower. With this background the main conclusions that seem relevant to draw are that (see Johnston,

1983, pp168, 173):

- a) the lower the creditworthiness the higher the spread;
- b) lower fees and longer maturities are systematically accompanied by lower spreads;
- c) the spread can be taken as a reliable indicator of the conditions in the market.

Evidently, syndicated loans stand for the main long-term alternatives inside the Eurocurrency market, even though some ordinary loans may become long-term ones by letting them "roll-over" from one year to the next. The main purpose of these longer-term credits has usually been to finance balance of payments deficits, leaving other long-term credit needs to the bond markets.

## 2.2 The International Bond Market

The main reason for issuing international bonds has been to provide funds for long-term investment projects. This sector of the international financial markets - the international capital market - consists of two main categories, namely:

- a) Eurobonds, which are underwritten by international syndicates and sold in countries other than the one of the currency in which it is denominated;
- b) foreign bonds, which are underwritten by a syndicate composed of members from one country on behalf of a customer in another country.<sup>4</sup> These are usually sold in the country of issue, and denominated in the currency of that country.

There is one main difference between the Eurocurrency market and the Eurobond and foreign bond markets (the international bond markets). In the Eurocurrency market the banks act as intermediaries by taking risks in their own names. The banks will also transform short-term deposits into long-term

credits. In the international bond markets the investors are the ones that hold the securities issued by the final borrowers. These securities can be sold on a secondary market, but still outside the responsibilities of the banks.

Compared to foreign bonds, Eurobonds benefit from being sold outside the country, in that (a) registration and other regulations can be avoided, and (b) no withholding tax has to be paid. So when in the US the Interest Equalization Tax on foreign loans was established in 1963, followed by the Direct Investment Program in 1968 which required foreign investment to be financed outside the US, the Eurobond market expanded rapidly. In 1972 issues on the Eurobond market reached a level of more than \$6b.

The oil price escalation in 1973-74 resulted in a reduction in investment activities outside OPEC, and consequently, the issues of Eurobonds and foreign bonds were reduced. Then, in 1974, the Interest Equalization Tax and all restrictions on the domestic financing of US foreign subsidiaries were removed. Consequently, the US firms left the Euromarket. One would have expected its market size to be reduced further on behalf of foreign bonds in the US, but a new category of borrowers appeared - international organizations and the public sector in countries with substantial deficits in balance of payments caused by the high oil prices. The Eurobond market continued to grow. The volume of new issues rose as high as \$46b in 1982. The market for foreign bonds also increased but at a much slower pace and the growth came largely outside the US. Table 2 gives the statistics of this expansion.

The Eurobond issues have aroused considerable interest

TABLE 2: THE GROWTH OF THE INTERNATIONAL BOND MARKETS 1973-82

(Annual Net Additions in \$b)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
A. Eurobonds (net)	4.6	4.5	10.5	15.4	19.5	15.9	17.4	20.5	27.2	46.5
Of which in US\$	2.9	3.1	4.9	10.0	12.3	7.7	10.2	13.7	21.6	38.7
Of which in DM	1.0	0.6	3.1	2.8	5.2	6.5	4.8	3.5	1.4	3.3
B. Foreign bonds (net)	5.3	7.8	12.3	18.9	16.6	21.5	20.0	18.9	21.6	25.2
of which from USA	1.5	3.6	6.9	10.6	7.7	6.4	4.7	3.1	7.6	6.0
of which from Switzerland	1.5	1.0	3.5	5.4	5.0	7.6	9.5	7.5	8.2	11.3
C. International bonds (A+B)	9.9	12.3	22.8	34.3	36.1	37.7	39.7	49.7	48.8	71.7
D. Redemptions and repurchases	n.a.	n.a.	3.3	4.3	5.1	8.5	9.3	11.7	12.3	13.2
E. Net new international bonds financing (C-D)	n.a.	n.a.	19.5	30.0	31.0	28.9	28.1	28.0	36.5	58.5
F. Total bank and bond financing (E+C of Table 1)	n.a.	n.a.	59.5	100.0	106.0	118.9	153.1	188.0	201.5	153.5
G. Minus: Double-counting bonds by banks	n.a.	n.a.	2.5	3.5	4.0	6.0	8.0	8.0	6.5	8.5
H. Total net new bank and bond financing	n.a.	n.a.	57.0	96.5	102.0	112.9	145.1	180.0	195.0	145.0

Source: Bank of International Settlements, Annual Reports, various issues.

because neither the sellers (the syndicated banks) nor the buyers (the investors) have to release information about the transactions. Consequently a lot of "excess capital" is placed in this market. Also, the technique of issuing means that a substantial part of the Eurobond issues have been initiated by the investors in order to avoid national regulations. In the beginning these investors were mainly private people trying to avoid taxation. But as markets grew the investors increasingly became institutions like insurance companies, central banks, pension funds, etc. One would expect the public sectors of OPEC countries to be among the more substantial investors in this market. However, only a small percentage of the OPEC surplus seems to have been placed directly into the Eurobond market. On the other hand the substantial placements of OPEC surpluses into bank deposits made it possible for the banks themselves to place capital into this market in their own name. One prerequisite for this has been the development of a secondary market for Eurobonds. Furthermore, Kuwait was actively seeking a role for dinar-denominated funds. These actions reached a peak in 1978-79, when 31 new issues were floated for an amount of KD250 million (see Business International, March 1983, pp11-12).

The issues of Eurobonds are handled by a leading institution together with a number of underwriters. The structure depends on each bank's placing power and it is usual to choose banks according to the nationalities of the expected investors. Consequently it is usual to include Arab banks among the underwriters.

The costs for a bond issue depend on the maturity of

the bond. The following estimates are typical:

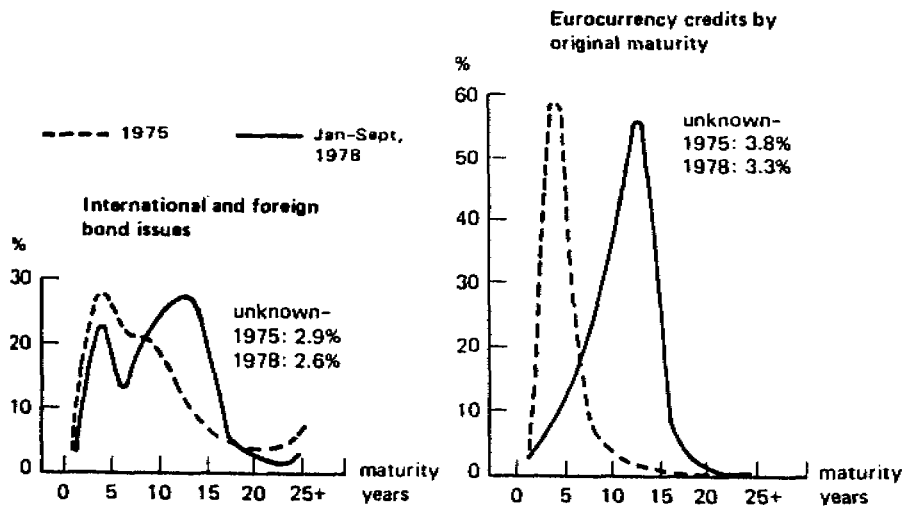
Maturity (yrs)	Fee (in %) to be paid to		
	Managing group	Under- writer	Sales bank
5-7	0.375	0.375	1.25
7-14	0.375	0.375	1.50
14-	0.50	0.50	1.50

(see Wennman, 1978, p102 and Business International, 1983, p7)

The maturity of a bond varies with the degree of stability in the world capital markets. In 1975 with worsening economic conditions it was difficult to obtain longer-term maturities. In 1978 the situation was completely different (see Figure 2).

Figure 2

The Change of the Maturity of Debt



Source: The Economist, London, March 24, 1979, p25. Presented in Feiger & Jacquillat, 1982, p255.

The secondary market for Eurobonds is managed by two institutes in London, Euroclear in Brussels and Cedel in

Luxembourg. The spread on this market depends on the type of bond. On "floating rate notes" it is about 0.25% to 0.75% but can be as high as 2% on less demanded bonds. About 60% of the bonds are issued in US dollars. The remainder are dominated by Deutsche Marks and Swiss Francs.

The Eurobond market is a market for borrowers with a high and stable income. By lending money to international organizations, governments, large-size multinational firms and banks, there is little risk of default.<sup>5</sup> Furthermore, the use of a large group of financial institutions as underwriters further reduces the risk to the lender.

### 3. RISK IN AND RETURN FROM INTERNATIONAL BANKING INTERMEDIATION

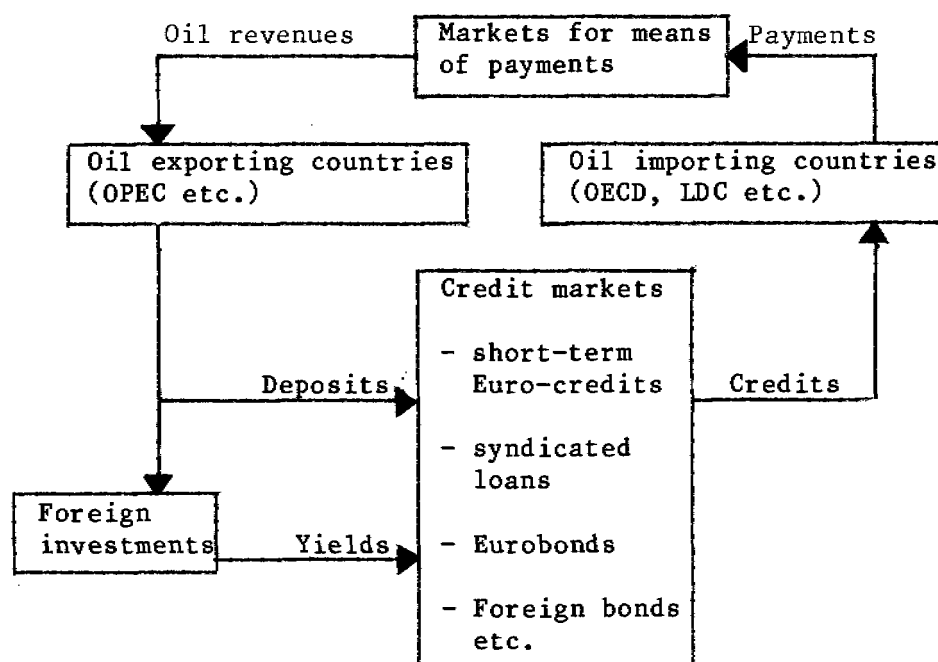
While the previous section gave an overview of the markets for international credits, we will now concentrate on the banks as intermediators in and between these markets. The main emphasis will be on what effect OPEC oil revenues have had on risk and return in international banking.

Let us start with the return from the additional banking intermediation that the oil revenues generate. There are two sides to this. First, the expansion in oil revenues has resulted in unexpectedly large volumes of cash surpluses, placed mainly on the Euromarket but also on domestic capital markets (eg in the UK and the US). Secondly, these increased oil revenues had to be paid by oil importing countries, which therefore had to expand their borrowing substantially. Thus the recycling of oil revenues generates both assets and liabilities for the banks (see Figure 3).

The intermediation between deposits and loans generates returns in terms of spread and fees. Spreads exist both on the deposit side and on the lending side, while fees apply only to loans. Spreads may vary, depending on the length of a deposit or on the maturity of a loan. They are also different for different currencies. While spreads are paid over the life of a loan or a

Figure 3

Recycling of Oil Revenues



deposit, fees are charged at the beginning (at the "front end").

The expansion of oil revenues has also generated additional and different forms of risk for the banks involved. These risks are mainly of two kinds: funding risks and credit risks. The funding risks concern sudden withdrawals of deposits and sudden reductions in new deposits in comparison to what was expected. The main reason for funding risks is a mismatch between depositing and lending. Normally a bank can manage these risks through roll-over loans or through the use of the interbank market. However, in certain situations these methods have turned out to be inefficient, causing a banking crisis as in 1974, when several banks encountered large foreign exchange losses and Franklin and Herstatt banks went out of business. A natural way to reduce the effects of such losses is to widen the margin

(spread) in order to cover the risks involved (see Johnston, 1983, pp289-294).

The credit risk is that a borrower may be unable to service its debt commitments. It also relates to the risk that governments, by using currency regulations or similar instruments, may hinder the servicing of the debt. In cases where there is a general tendency for firms and other organizations of a certain country to generate similar risks to external banks, it is usual to label these credit risks as country risks (see Johnston, 1983, pp294-296).

In many cases funds pass through a chain of banks on their way from depositors like the oil-exporting countries to final borrowers like the oil-importing ones. The maturity transformations between depositing and lending may occur in any of these chains. However, it seems likely that "most transformations take place between the final bank in the chain and its non-bank customer borrowing funds" (Ellis, 1981, p360). This indicates that it is the lending activity that causes the main risks, while the depositing activity will always be well matched by the banks.

In the highly competitive market of international credits and deposits one would expect the spreads in the Eurocurrency market to be set so as to cover risk and marginal costs for intermediation. It would then be reasonable to assume that these risks and costs were different from bank to bank depending on factors like:

- a) "capacity" - banks with a large volume of international credits and transactions, and consequently a larger experience of international

markets, might have lower costs and risks than others.

- b) "positions" - banks with a more matched position in currencies and in maturities make less extensive use of the interbank market than others. This will then give lower risks and costs of intermediation.
- c) "organisation" - banks with the experience and ability of managing syndicates, analysing borrowers' creditworthiness and working out combinations of loans (eg with fixed rate and floating rate issues) may present a product at lower costs and lower risks than others. (see eg Euromoney, October 1983).
- d) "efficiency" - banks with lower administrative costs and better computational facilities might have lower costs for intermediation.

Thus, with larger banks, better positions, more experienced organisations and lower costs of administration, one can expect the marginal cost of international intermediation to be further reduced.

Marginal cost pricing is a necessary condition for efficient prices in these competitive credit markets. And the existence of economies of scale in banking will imply fixed or joint costs, which it would be efficient to cover by fees and not by spreads. For example, in the syndicated Euromarket larger banks cooperate as in a cartel in order to establish a suitable system of fixed charges (fees). Cross-subsidisation will only occur in those cases where a single bank decides to accept spreads that are below its own marginal costs (possibly with a longer term view of profitability; see Llewellyn, 1983, pp71-73).

#### **4. BANKING INTERMEDIATION IN THE EUROCURRENCY MARKET: 1973-82: SOME EMPIRICAL RESULTS**

The flow of oil revenues in the years 1973 to 1982 was greater than ever before. This was a result of the succession of oil price rises in 1973-4 and again in 1978-80. The revenues were enormous, rising from about \$34b in 1973 up to a peak of \$278b in 1980 and falling to about \$200b in 1982 (see Bergendahl, 1984, Table 2; and Figure 4 below). At the beginning of this period a substantial amount found its way to Iran, but year by year Saudi Arabia became the main destination. An outstanding characteristic of these flows was that they were almost 100% denominated in US dollars.

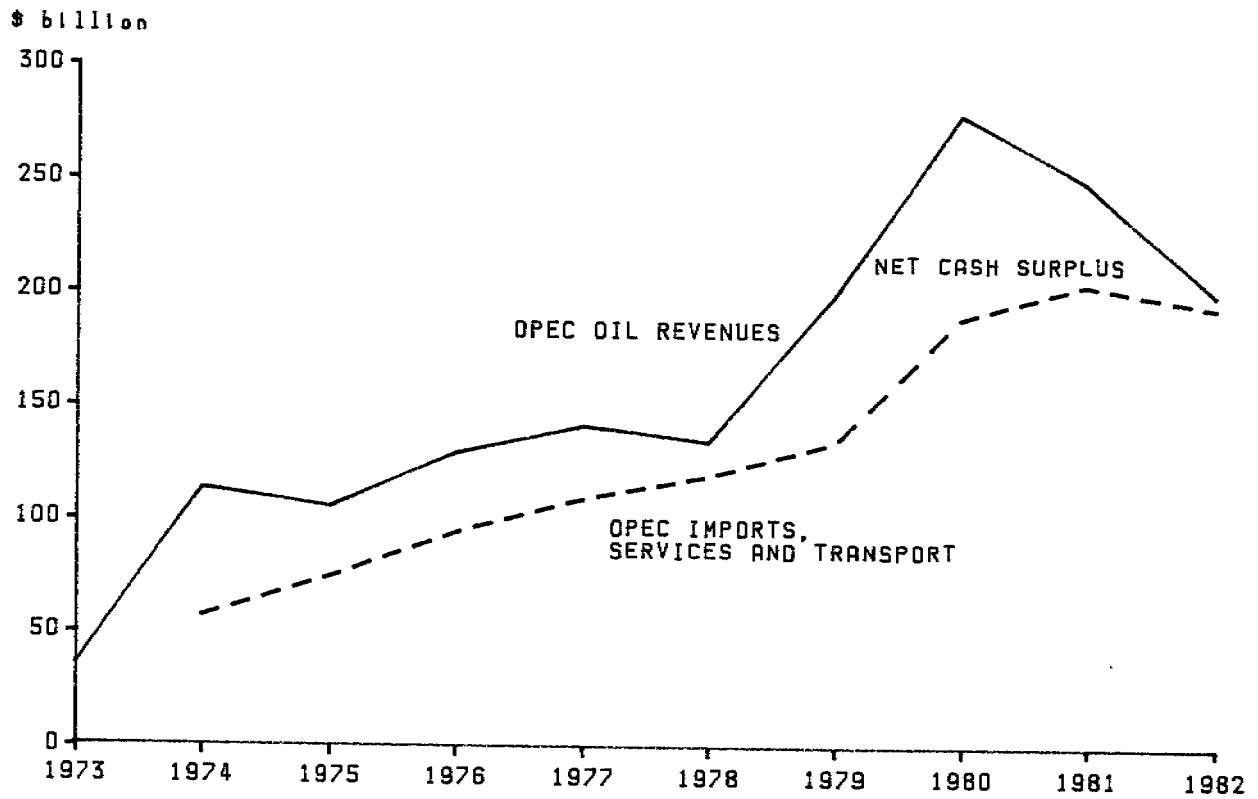
These enormous transfers of capital were managed by a network of mainly Western banks. Some OPEC countries demanded that their part of the flows should end up in their own national banks. Others were satisfied by leaving the payments in bank deposits with, for example, Citibank, Chase Manhattan or Morgan Guaranty, leaving the choice of final destination until later.

Most of these oil revenues were used for domestic consumption and investment. The remaining part - the so-called OPEC cash surplus - was deployed into various financial investment alternatives, both short-term and long-term (see Bergendahl, 1984, Table 9). In all these transactions, the

Figure 4

OPEC Oil Revenues, Imports, Services,  
Transfers, and Cash Surplus

Source: Bergendahl 1983



Western banks played dominating roles as intermediators.

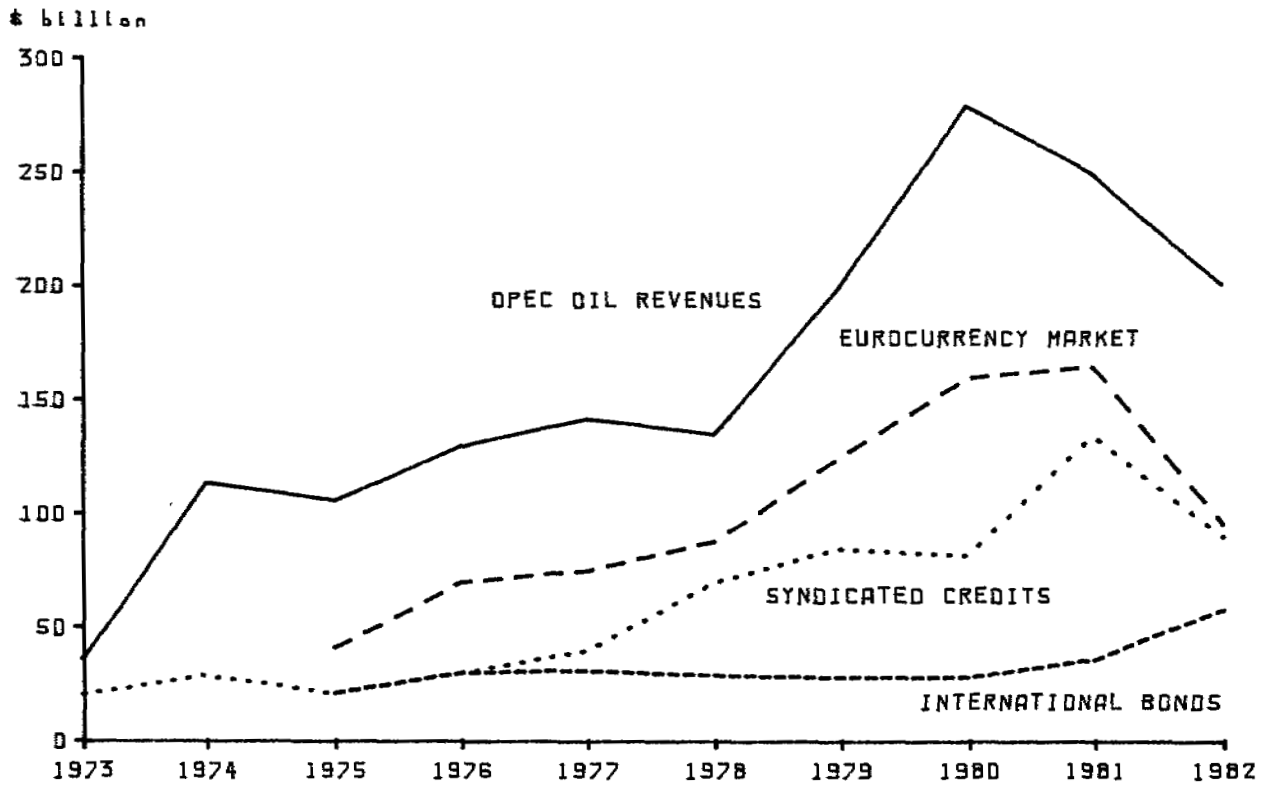
In the first case, where the funds were used for domestic investment and consumption, the banks' role was the ordinary one of capital transfer and currency exchange. But in the second case, where the revenues were "deployed" into different alternatives of foreign investment, the banks acquired quite new roles. First, they were asked to handle a large-scale supply of capital. A substantial part of this supply was directed into Eurodollar accounts, but domestic US dollar accounts, UK sterling accounts etc. were also used (see for example Bergendahl, 1984, Table 9). Secondly, some banks were asked to transfer deposited capital into bonds, notes, shares and estates. Here the role became that of managing a portfolio of securities.

Then there was the other side of the coin - demand for additional capital. The OPEC price escalations not only had an effect on the handling of surpluses, but more importantly on the oil-importing countries' need for credits. A first glance at the development of OPEC's annual oil revenues on the one hand and the annual increase in credits on the Eurocurrency market on the other, seems to indicate a close relationship (see Figure 5). Furthermore, the change on the Eurocurrency market is calculated on a net basis, which means that the amount of new credits necessary to match the OPEC oil revenues has been reduced by the repayment of old credits. So if it were possible to estimate the annual growth of the Eurocurrency market in terms of new credits, one might obtain an even closer relationship with OPEC revenues.<sup>6</sup>

It seems quite evident that it is the lending side of

Figure 5

OPEC Oil Revenues Year By Year Compared To  
The Growth of The Eurocurrency Market and  
The Eurobond Market.



the petroleum market that has had the largest effect on intermediation in international banking. If a large percentage of the payments that end up in OPEC oil revenues have been financed through the existing banking system, then the increased intermediation since 1973 must have been substantial.

In order to analyse the induced banking intermediation, the time period 1973-82 will be divided into four subperiods (see Bergendahl, 1984, pp23-4):

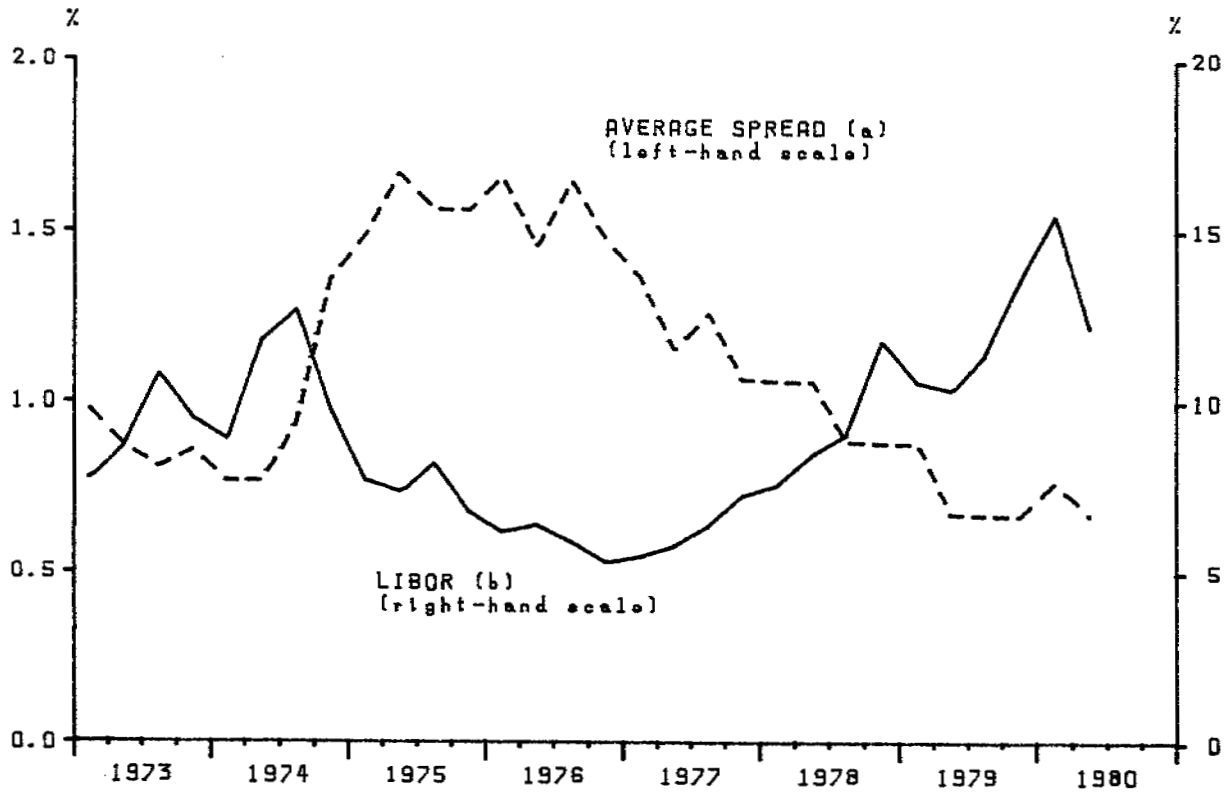
- (a) The first oil price escalation period 1973-74;
- (b) The first oil market adjustment period 1975-78;
- (c) The second oil price escalation period 1979-80;
- (d) The second oil market adjustment period 1981-82;

In the first period, 1973-74, there was a rapid growth in OPEC oil revenues from \$35b to \$113b. About half of this latter amount was used domestically, a net amount of \$19b was placed on the Euromarket, about \$15b in domestic bank deposits, and the remaining \$26b in longer-term securities (see BIS, 1975, p131 and Bergendahl, 1984, p37). However, at that time the oil importers were very insensitive to price increases in oil, which must have generated an extremely high demand for new credits.

The high demand for short-term credits seems to have been the main reason for the substantial increase in LIBOR (see Figure 6). Short-term deposit rates went above the medium-term ones. The banks felt an increase in risk mainly because a large proportion of the credits was taken by less developed countries. So the credit terms tightened and spread rose, while maturities and size of the loans fell. (see Figure 6 and 7).

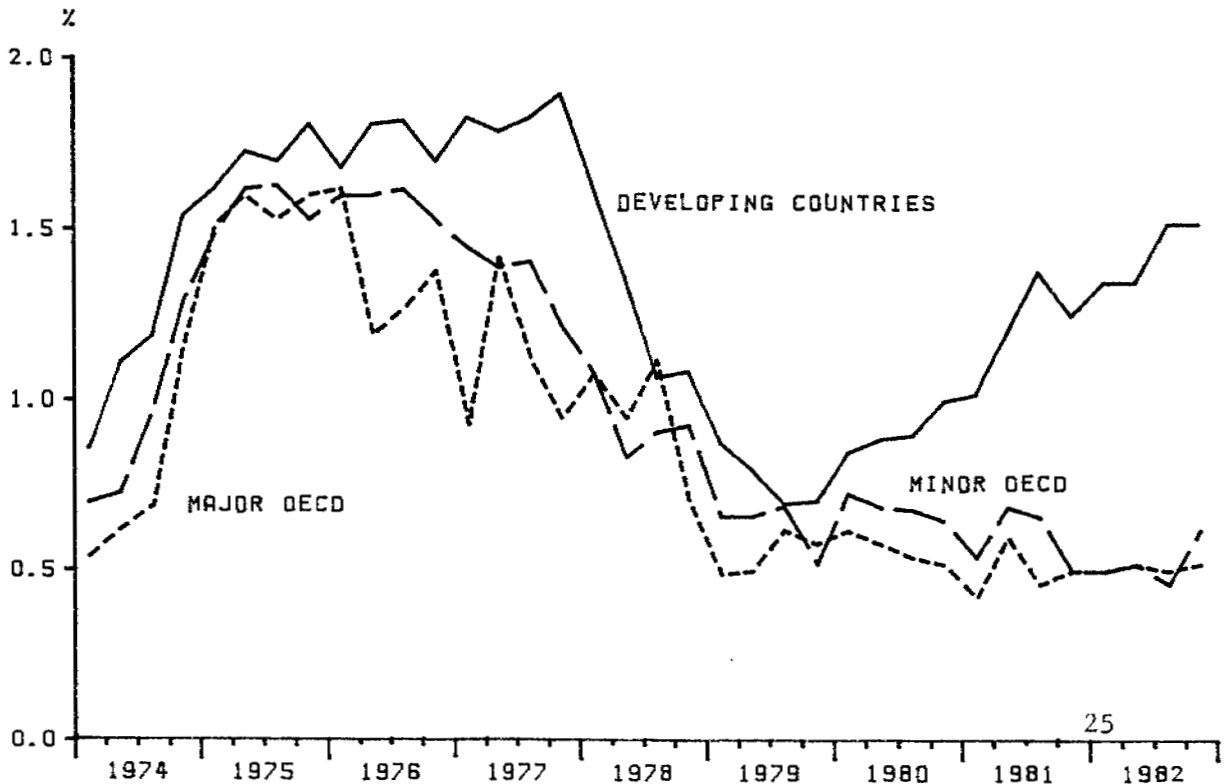
In the first oil market adjustment period, 1975-78, oil

FIGURE 6  
LIBOR AND AVERAGE SPREAD



Source: Fleming & Howson, 1980, p315

FIGURE 7  
AVERAGE SPREADS ON SYNDICATED MEDIUM-TERM EUROcredits



Source: Bank of England, 1983, p44

revenues grew but at a slower pace. As OPEC's imports doubled in size from 1974 to 1978, less capital was available to be placed in the banking sector. The OPEC countries' net additions to their bank deposits became relatively small (\$10b, \$12b, \$12b and \$7b for the years 1975 to 1978 respectively). Among these countries Saudi Arabia and Venezuela were the main depositors (BIS, 1975-76, p87). A large part of these placements was in the form of foreign exchange reserves.

This time period was characterised by an increase in OPEC's placement of funds in deposits and securities on longer terms. One reason may have been that LIBOR was low and spread high (see Figure 6). Consequently, both the syndicated Euromarket and the international bond markets grew rapidly (see Table 2). The money market reacted to this by lowering spread and increasing LIBOR.

Then in the second oil price escalation period, 1979-80, oil revenues grew enormously. As imports to the OPEC countries did not follow at the same speed, the cash surplus expanded rapidly. Liquidity grew on the Euromarket, where the OPEC countries placed \$30b in 1979 and \$34b in 1980 (both figures being net amounts). The heavy emphasis on long-term credits accelerated over this period, resulting in a substantial mismatching of maturities (see Table 3).

Lastly came the second oil market adjustment period (1981-82). Oil revenues decreased, although they were still substantial (see Figure 7). However, OPEC's imports were still expanding, almost eliminating the cash surplus. The money market

**TABLE 3: MATURITY MISMATCHING WITHIN THE UK INTER-BANK MARKET**

Average<sup>(a)</sup> net foreign currency liabilities (-)/claims (+) in inter-bank market as percentage of the group's total foreign currency liabilities in inter-bank market.

	<u>British</u> <u>banks</u>	<u>American</u> <u>banks</u>	<u>Japanese</u> <u>banks</u>	<u>Other</u> <u>Overseas</u> <u>banks</u>	<u>Consortium</u> <u>banks</u>
Remaining maturity					
Less than 8 days	1.2	-5.3	0.9	-2.9	- 2.7
8 days-1 month	-2.9	-0.9	-2.9	0.8	- 9.4
1-3 months	-8.7	3.4	-5.2	-3.3	-17.9
3-6 months	-8.8	4.4	-3.1	-3.3	-14.9
6-12 months	-2.7	1.0	-1.0	-0.7	- 2.8
1-3 years	0.6	0.9	0.4	1.7	2.7
3 years and over	2.8	1.3	2.4	2.2	4.4

(a) For the reporting dates in February and August between February 1974 and February 1981. These are based on the figures published in the Bulletin, which include liabilities to CMI's within the inter-bank totals. The figures include the counterparts to transactions with non-banks and so some of the apparent mismatching is offset elsewhere in the banks' balance sheets. These figures therefore overstate the amount of maturity transformation that takes place within the inter-bank market.

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(Source: Ellis, 1981, p359)

was hit by this running down of its sources of capital. The spread went up for less developed countries. Their increase in current account deficits meant a high demand and a low price elasticity for capital. Then, in 1982, the demand for credits went down, partly as a result of a reduced need to finance oil revenues. On the other hand, the bond markets now attracted large-scale capital resources, even if this latter market was not open to the less developed countries (see Maynard & Davies, 1982, p165).

In total, the ten year period of 1973-82 resulted in a

rapid increase in banking intermediation on the international financial markets. The international bank net lending had grown to a level of more than \$1000b by the end of 1982. A substantial part (about 70%) of this expansion refers to the growth of the inter-bank market,<sup>7</sup> where the majority of banks make very little profit but which is of great importance for the sharing of maturities and risks between banks.

Of these four time periods, the first became the most important one for international banking. It was then that the expansion of banking intermediation became considerable in size. The number of credit customers increased, as well as the number of transactions needed to finance the payments for oil imports. As the number of transactions is the main basis for the operating costs, one would expect these costs to expand rapidly over the two years.

There is empirical evidence to support these tendencies. Revell (1980, pp104-9 and private communication, 1984) has analyzed two kinds of time-series for commercial banks. The first was the ratio (IM/VB) of interest margin to the volume of business, and the second the ratio (OC/VB) of operating costs to the volume of business. It was shown that normally these two ratios move in the same direction. For 1973-74 all these ratios showed a sudden increase. This seems to indicate that the operating costs and interest margin increased more than the volume of business. However, only in a few countries (such as Sweden and the US) were interest margins large enough to keep up with the rise in operating costs (see Figure 8).

It is probably the case that many banks tried to match

FIGURE 8a  
RATIO OF OPERATING COSTS TO VOLUME OF BUSINESS

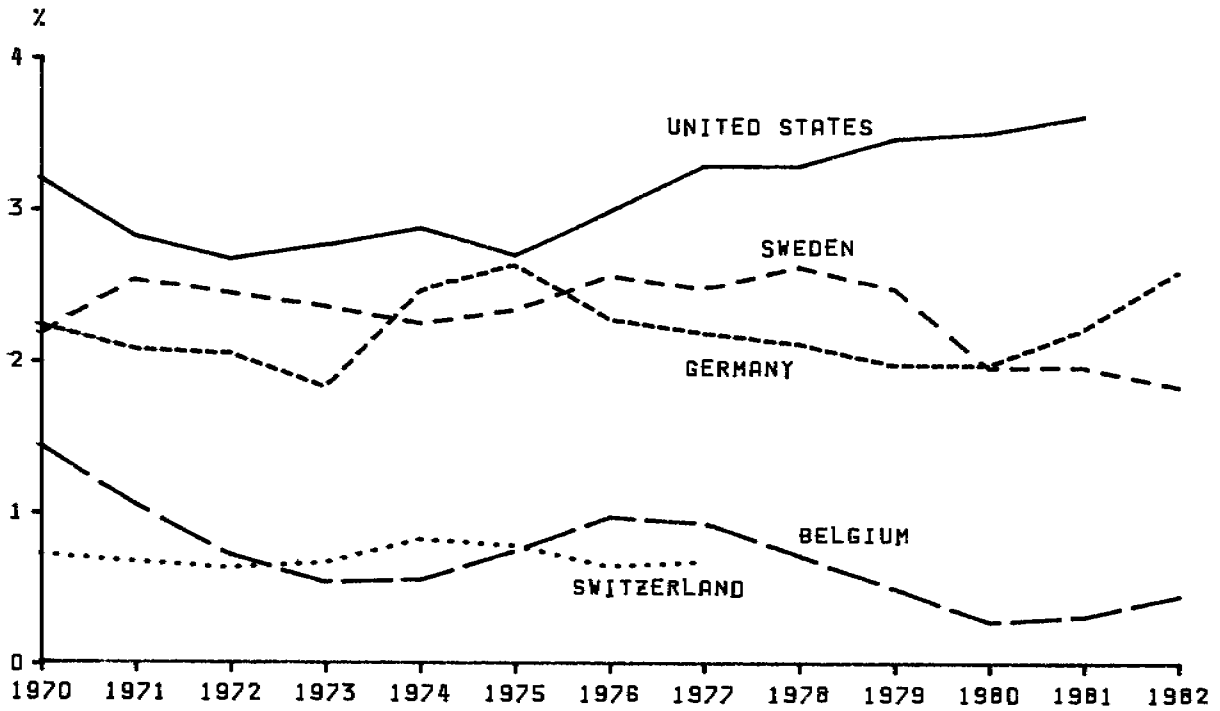
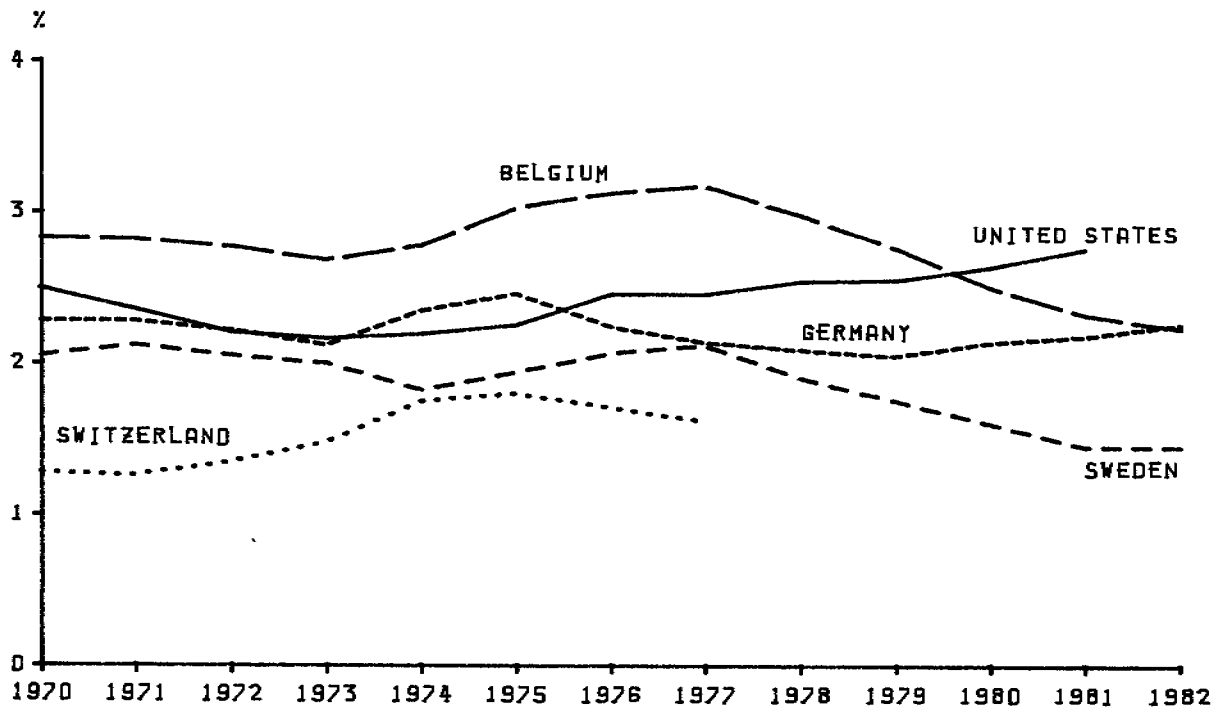


FIGURE 8b  
RATIO OF INTEREST MARGIN TO VOLUME OF BUSINESS



Source: Revell, 1980d and private communication 1984

LEGEND:

----- OC/VB  
 \_\_\_\_\_ IM/VB

B = Belgium  
 CH = Switzerland  
 US = U.S.A.

D = W. Germany  
 S = Sweden

the increased cost of operation in these years by a greater emphasis on wholesale business such as international transactions. But the increase in competition may have led to lower margins, which for many banks became so low that this expansion policy was less than successful.

A bank's interest income is almost proportional to the total volume of credits given to customers. And interest expenses are directly dependent on the total amount of deposits made in the bank. On the other hand, operating costs do not depend primarily on the volumes of credits or deposits, but rather on the number of transactions made by the bank. In this respect there are economies of scale in banking, meaning that the marginal costs of operation may decrease the larger the volume of transactions.

Given this background many banks have developed their "wholesale" intermediation business with large-scale customers and with other banks, where the number of transactions per unit of capital is low. Then, as an effect of competition, one could expect the interest margins ("spreads") of these sectors to go down year by year.

The management of OPEC's oil revenues, as well as the associated credits to oil-importing countries, must be seen as just such a wholesale business. However, in the period 1973-82, the expected reduction in interest margins may have been outweighed by an increase in risk premia and operating costs. The number of credit customers expanded as well as the number of transactions needed to finance the payments for petroleum. The observed increase in the overall operating costs for western

banks during that period (see Figure 8) might well stem from the larger scale of international intermediation. The increase in new depositors may have raised the interest margin for the Eurobanks in order to cover the marginal cost of rearranging the supply of customers' deposits into a form that can be traded on the Eurocurrency market. In cases where the volume of deposits grow for a given set of depositors (as in the case of inflation), this marginal cost might be constant (or even decreasing). In those cases, however, when an increase in deposits has to be from completely new depositors the marginal costs of intermediation will have to increase. This latter case lies behind Figure 8.

In the same way, a corresponding increase in new borrowers caused the marginal cost of intermediation to grow, and with it the spread on the lending side. At this point in time many banks were just operating on the short-term interbank market, and the OPEC oil surpluses and the corresponding demand for credits were not manageable at the existing capacity. Staff had to be hired and computational facilities had to be ordered (see Allen, 1974, pp1295-8).

But even if in 1973-74 there was not yet any default on the Eurocurrency loans, the mere risk of a withdrawal of capital from the market might have caused spread to expand.<sup>8</sup> At the same time the collapse of the Herstatt Bank and the Franklin Bank resulted in higher spreads on the inter-bank market. All these factors together pushed spreads upwards.<sup>9</sup>

From 1976 onwards, the banks were equipped with much more effective procedures for large-scale evaluations of new types of loans and of borrowers. Liquidity was also improved in

order to face sudden withdrawals of capital. So now the routine became more or less one of expanding deposits and credits for the same set of customers. Marginal costs went down and so did the spread (see Figures 6 and 7). The exceptions were customers from less developed countries. Their credits caused the banks substantial costs and consequently spread went up.

The OPEC price escalations of 1973-74 and 1979-80 seem to have been one of the most important reasons for the growth of the Eurocurrency market. They also had a large effect on competition between the banks. When the need for intermediation became urgent in 1973-74, there were few banks that had the capacity for large-scale intermediation. Year by year the number of major banks on the Eurocurrency market grew (see Table 4). Since the second oil price escalation period (1979-80) there has been another noticeable change, with a large number of Arab banks entering the market.

One would expect the declining spreads and increased competition to result in a worsening of the capital position of Eurobanks (see Maynard & Davies, 1982, p173 and the Banker, June 1983, p109). However, a year by year analysis of the capital/asset ratios for the largest Eurobanks gives little support to such a conclusion (see Table 5). From 1980 onwards the trend to declining spreads and lengthening maturities has been reversed.

For the OPEC countries this development had most effect on their choice of strategy for liquidity management. In periods with extremely high oil revenues (1973-74 and 1979-80), the Euromarket was flooded with funds, originating mainly from low-

**TABLE 4: EUROCREDIT LENDERS 1979<sup>1</sup>.**  
(by volume of loans)

<b>Group</b>	<b>\$millions equivalent</b>
1. Citicorp	11 144 30
2. Chase Manhattan	7 993 32
3. Crédit Lyonnais	7 459 71
4. Bank of Montreal	7 275 04
5. Lloyds Bank Group	6 555 32
6. Bank of Tokyo	6 243 84
7. Bank of America	5 361 49
8. Morgan Guaranty	5 136 39
9. WestLB	4 199 41
10. Manufacturers Hanover	3 869 00
11. Deutsche Bank	3 749 55
12. Chemical Bank	3 299 00
13. Industrial Bank of Japan	2 965 95
14. NatWest	2 926 50
15. Bankers Trust	2 852 00
16. Long-Term Credit Bank of Japan	2 781 94
17. Midland Bank	2 174 19
18. Barclays Bank	2 044 93
19. Sumitomo Bank	1 921 57
20. Royal Bank of Canada	1 818 69
21. DG Bank	1 600 00
22. Société Générale	1 580 00
23. Fuji Bank	1 540 00
24. Grindlays Bank	1 512 90
25. Canadian Imperial Bank of Commerce	1 402 00
26. BNP	1 383 00
27. Dresdner	1 317 66
28. Orion	1 297 14
29. Warburg	1 297 00
30. Toronto-Dominion	1 170 00

Source: Mendelsohn 1980, p61

1. Top lead managers for loans signed up until November 9, 1979. No official figures exist for the actual amounts signed by each bank. However the experience is that Citicorp, Bankers Trust, Chase Manhattan, Lloyds Bank, Midland, Deutsche Bank and Commerzbank are the "big players" today. Citibank is assumed to have signed up for \$1b in 1983. (The Banker, Nov.1983, p63).

absorbing countries. They came to the Euromarket at a time when there was a shortage of funds and consequently LIBOR was high (>10%). When LIBOR went down, these funds moved to other more

TABLE 5: CAPITAL ASSETS RATIO (%) FOR THE LARGEST EUROBANKS<sup>1</sup>

OVER THE PERIOD 1973-82

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Citicorp	4.02	4.24	5.15	4.22	3.79	3.75	3.50	3.50	3.80	3.98
Bank America	3.18	3.08	3.07	3.35	3.36	3.30	3.33	3.33	3.54	3.97
Banque Nationale de Paris	0.83	0.86	0.80	0.82	0.94	1.56	1.40	1.35	1.28	1.34
Crédit Lyonnais	0.94	0.76	0.87	0.77	0.80	1.37	1.22	1.07	0.95	1.25
Barclays Group	5.60	5.73	5.48	5.65	5.70	5.69	5.79	5.37	4.66	4.68
National Westminster	7.60	6.97	6.77	5.46	5.36	7.27	6.48	6.21	5.10	4.68
D.I.K. Bank	2.96	4.70	4.52	2.56	2.74	4.30	3.78	3.50	3.26	2.86
Société Générale	0.82	0.76	0.66	0.73	0.69	1.88	1.65	1.59	n.a.	1.56
Fuji Bank	4.44	5.07	4.72	4.55	4.64	4.56	4.15	3.83	3.51	3.00
Deutsche Bank	3.43	3.06	3.52	3.25	2.72	3.01	3.23	3.10	3.10	3.27
Mitsubishi Bank	4.09	5.05	4.81	4.73	4.73	4.59	4.02	4.07	3.25	2.90
Sumitomo Bank	3.68	4.98	4.86	4.66	4.38	4.68	4.20	3.56	3.12	2.95
Midland Bank	4.47	4.77	5.43	5.25	5.14	6.17	6.04	5.32	3.54	3.25
Chase Manhattan	3.66	3.72	3.98	3.71	3.53	3.04	3.27	3.55	4.77	4.26

(1) Given are the ratios of capital and reserves to total assets less contra accounts

Source: The Banker, 1973-82

productive investments. At the end of 1982 the OPEC countries were reported to have bank deposits of \$135b and bank credits of \$79b, a net difference of \$56b. This is almost identical to the net difference of \$55.5b reported for the low-absorbing countries alone (BIS, 1983, p116).<sup>10</sup> However, it is much smaller than the \$164b that can be estimated from the IMF data (see Bergendahl, 1984, Table 11) or the \$157b estimated by the Bank of England (see Bergendahl, 1984, Table 9). In the latter cases, however, many more countries had reported their assets and liabilities.

## 5. CONCLUSIONS

This study has been concerned with such diverse subjects as the development of the Eurocurrency market (Section 2), the risk and return for a banking firm (Section 3) and the simultaneous expansion of the markets for oil and for Eurocurrency over the time period 1973-82 (Section 4). The findings can be summarised as follows.

Banks get their main income from interest margins or spreads, which in turn depend on credit volumes and the size of deposits. Their main costs are operating ones, which in the short run are largely fixed or joint between a set of activities. The variable operating costs depend to a large extent on the number of transactions rather than on the volume of capital. Consequently, a bank will seek out activities with large capital volumes but with few transactions. "Wholesale" international credits and deposits belong to this category.

Intense competition in the Eurocurrency market and other international markets has resulted in a tendency to reduce spread year by year over the time period 1973-82. During this period more and more banks entered the Eurocurrency market, and as a result spreads shrank to a level where several banks might not be able to cover marginal operating costs. Others might do

so by taking advantage of the economies of scale.

Banks that compete successfully in the Euromarket can be characterised in terms of high capacity, matched positions, experienced organization and economic efficiency. The largest international banks have long since been members of this group of "Eurobanks". However, there are important newcomers like Japanese and Arab banks with the competitive advantage of close access to large-scale funds.

Economies of scale in banking stem to some extent from the substantial fixed costs (for salaries, computers, etc). However, in international banking there are three other and perhaps more important reasons, all related to risk-taking. First, a large bank with wide experience of evaluating different customers will be in a better position to estimate new customers' creditworthiness as well as the risks of them withdrawing their deposits. Secondly, a large bank with more credits will be more able to pool the credit risks of different customers. Thirdly, a bank with a larger volume of credits and deposits may be better able to match maturities, thus reducing the need for credits from the interbank markets.

OPEC oil revenues have had a substantial effect on the Eurocurrency market. In 1973-74 the international banks were not well prepared for handling large-scale deposits and credits from a limited number of customers. Spread rose, partly as an effect of the increase in risk-taking in connection with extensive interbank operations (including losses caused by the Herstatt and Franklin crashes). The increase was partly an effect of a substantial expansion of the banks' international service

manifested in terms of more personnel, more computers and more offices in more places. Once this adjustment had been made, spread fell again, only to rise in the 80's and then just to match risks with credits to less developed countries. It seems as if the growth in OPEC's oil revenues has had less effect on the deposit side than on the credit side of the Eurocurrency market. A substantial part of OPEC's cash surplus has been channeled to destinations outside this market. However, on the lending side, payments for OPEC's oil were financed through this market, both directly via the oil trade and indirectly to cover balance of payments deficits.

For the near future, it seems as if OPEC oil revenues will play a less dominant role in the Eurocurrency market. The internal efficiency of the individual banks seems to be of increasing importance. To be able to compete, each bank needs to reduce its marginal costs below the spreads, and it needs to recognize that interbank financing might in many cases become too costly. A competitive Eurobank will have to rely more and more on its own capacity, on its own positions and on its own organization. Efficiency in pricing and in investment is a necessity for those banks that are to expand in the Eurocurrency market.

## FOOTNOTES

1. For a detailed analysis of this background, see eg Johnston, 1983, pp9-16.
2. With the cable address EUROBANK.
3. LIBOR = London inter-bank offered rate.
4. A special kind of foreign bond issue is a parallel bond. This means a number of simultaneous foreign bond issues, where the borrower obtains funds from a number of countries.
5. For statistics on the distribution of borrowers as well as leading underwriters, see Lomax & Gutmann, 1981, pp8-11.
6. It should be noted that the growth of the Euromarket is measured in terms of annual net additions to reporting banks' assets and liabilities in foreign currencies. As most credits for oil imports are in shorter maturities than a year only a fraction of them will be treated as such net additions. So even if the OPEC oil revenues were financed by Eurocredits to 100%, their influence on the size of the Euromarket will become much smaller than Figure 8 seems to show. But more important are the similarities in structure between the development of oil revenues and the growth and contraction of the Eurocurrency market.
7. For an analysis of the interbank market, see Ellis, 1981.
8. A recent study of the 25 largest Bank holding companies made by Solomon Brothers revealed that the net loan losses from all banking sectors increased by 65% in 1974 (Hall, 1975).
9. Johnston (1983, p179) has presented the following arguments for the increase in spreads in 1974:

"The succession of banking failures in 1974....produced general fears about the solvency of banks in the Euro-currency market, caused sharp movements in Euro-dollar interest rates ....and led banks to withdraw at least temporarily from expanding their Euro-currency business. In those circumstances, even though the main effects of the banking crisis in 1974 was to influence confidence in certain banks and the banking system and not the risk of default by borrowers, it would not have been surprising if banks had sought sharply higher spread on their syndicated medium-term Euro-loans to compensate for the increased risks involved in funding loans, with the implication that the decline between 1976 and 1979 reflected only a recovery in confidence."

However this explanation does not take into consideration the sudden increase in operating costs of 1974-75 (see Figure 8 above).

10. Assets and liabilities in the BIS reporting area only.

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