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The rapid growth of the Euro-currency market from its beginnings in the 1950's to the present has been widely publicized.[1/] Little attention, however, has been given to the enormous differentials in the growth of business conducted through different money market centers within the Euro-currency market. London has been by far the largest center of Euro-currency business, and it continues to be such. But London's primacy relative to other market centers has been diminishing. During the 1970's, an increasing share of the business has been captured by various "off-shore banking centers," i.e., localities where banking transactions are mainly with foreign customers. One group of offshore centers where Euro-currency activity has been outpacing London by a wide margin and which is of particular importance to U.S. banks is the one now frequently

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1/ Euro-currency operations of banks consist of borrowing and lending funds denominated in currencies that are foreign to the country where the bank is located. The majority of Euro-currency transactions are denominated in U.S. dollars and are thus carried out in the "Euro-dollar market," but there are also markets for deposits and loans in Euro-Deutsche marks, Euro-Swiss francs, Euro-sterling, and several other currencies. ("Loans" is here used in a broad sense to include interbank placements.)

referred to as the "North American Euro-currency market." This market--not a separate market but a geographic subdivision of the worldwide Euro-currency market with certain unique characteristics--is now close to two-thirds the size of London in terms of amounts of Euro-currency assets outstanding.

Activity in the North American Euro-currency market is dominated by U.S. banks operating mainly through their branches in the Bahamas and Cayman Islands, which are heavily financed by placements from the head offices. Euro-currency business is also carried out by branches of non-U.S. banks in the Bahamas and Caymans and by banks in Canada, Bermuda, the Netherlands Antilles, Panama, and a number of other Caribbean localities of lesser importance. The principal common bonds among the banking offices in these centers are that they are in the same time zone as the Eastern Seaboard of the United States and have particularly strong links with the U.S. money market and with each other. These factors, together with several important tax considerations, have made it profitable for U.S. banks to book an increasing share of their Euro-currency loans at their Caribbean branches and to place a very large volume of funds into the Euro-currency market via these branches. This paper presents an examination of the impact which institutional and economic factors have had on the North American Euro-currency market.

Growth and Size of the North American Euro-currency Market

At the end of 1977, U.S. banks had 74 branches in the Bahamas and 58 branches in the Cayman Islands. All but a small handful are "shell" branches, managed at U.S. offices, that were established in the late 1960's or early 1970's to deal exclusively with nonresidents of those locations. The U.S. balance of payments program introduced in 1965 restricted U.S. banks' ability to fund their Euro-currency operations directly from the United States. This induced the banks to establish shell branches in the Caribbean to make it easier to finance Euro-currency lending with funds raised outside the United States, without incurring the expense of a full-service branch. The abolition of the U.S. balance of payments program in January, 1974 removed an important motivation for operating shell branches. However, by that time these overseas branches were profitably contributing to the global operations of U.S. banks for other reasons. Between the end of 1973 and September, 1978 the balance sheets of the Bahamas and Caymans branches increased almost four-fold to reach $89 billion.[2/] This was nearly

2/ Assets of the branches in the Bahamas and Caymans had earlier increased from $5 billion the end of 1970--the first date for which data are available--to $24 billion at the end of 1973. In 1970 there were no branches in the Cayman Islands.

four times as fast as the 100 per cent increase in the Euro-currency assets of banks in the United Kingdom, as shown in Table 1.

The expansion of U.S. branch operations in the Bahamas and Caymans has been the principal reason why the North American Euro-currency market has been outstripping London. However, the activities of non-U.S. banks in this area have also contributed to this growth. Data limitations make it impossible to determine precisely the size of their combined Euro-currency assets or liabilities. By using data collected by the Bank for International Settlements and the Federal Reserve System, we can estimate that in September, 1978 the non-U.S. banks in the Bahamas and Caymans had $19-20 billion of Euro-currency assets and the non-U.S. banks in other Caribbean island centers held an additional $8-9 billion, for a total of $27-29 billion. These estimates, together with September, 1978 figures for U.S. branches in the Bahamas and Caymans ($89 billion) and for banks in Canada ($28 billion) and Panama ($12 billion) suggest that the banks in the North American Euro-currency market held $156-$158 billion of Euro-currency assets in September, 1978. This was 60-61 per cent of the London market total. Only two and three-quarter years earlier, at the end of 1975, the comparable percentage had been 36-38 per cent.

An overview of the operations of the Bahamas and Caymans branches of U.S. banks is provided by the data in Table 2. The combined balance sheet of these branches on November 30, 1978 shows that, on the assets side,

Table 1. Euro-Currency Assets of Banks in Selected Countries
(in billions of dollars; end of month)

	December 1973	December 1975	December 1976	December 1977	September 1978
I. North American Euro-Currency Market					
A. U.S. bank branches in Bahamas and Cayman Islands	24	31	67	79	89
B. Banks in Canada	13	16	20	23	28
C. Banks in Panama 1/	2	6	8	10	12
Subtotal	39	53	95	112	129
D. Non-U.S. banks in Bahamas, Caymans, other Caribbean centers 2/	n.a.	10-13	13-17	18-21	27-29
Total	n.a.	63-66	108-112	130-133	156-158
II. United Kingdom 3/	128	174	197	233	261
III. Seven Continental European Countries 4/	107 5/	174	210	266	310 6/
IV. "Worldwide" 7/	305	455	560	660	795

1/ Loans and other claims on nonresidents only.

2/ Authors' estimate.

3/ Figures refer to the mid-month bank reporting date of the month concerned. Sterling values have been converted into U.S. dollars at the end-of-month market exchange rate

4/ Belgium-Luxembourg, France, Germany, Italy, Netherlands, Sweden, and Switzerland.

5/ Excludes (for lack of data) funds placed with other banks in the home country of the reporting bank. Such interbank placements were 17-19 per cent of the total Euro-currency assets shown on the later dates.

6/ Partly estimated.

7/ Major European countries, Bahamas, Bahrain, Cayman Islands, Panama, Canada, Japan, Hong Kong, and Singapore.

Sources: IA, Federal Reserve System; IB, Bank of Canada; IC, International Monetary Fund; ID, authors' estimates; II, Bank of England; III, Bank for International Settlements data for these countries and the United Kingdom, from which data for the United Kingdom from U.K. sources have been subtracted; IV, Morgan Guaranty Trust Company.

Table 2. Assets and Liabilities of U.S. Bank Branches in the Bahamas and Cayman Islands
(in billions of dollars)

	December 31 1970	December 31 1973	December 31 1975	December 31 1976	December 31 1977	Nov. 30 1978
Assets	4.8	23.8	45.2	66.8	79.1	89.6
I. Claims on United States	1.2	2.2	3.2	3.5	5.8	7.5
Parent Bank	.5	.3	1.5	1.1	3.1	4.4
Others	.7	1.9	1.8	2.4	2.7	3.1
II. Claims on Non-U.S. Residents	3.6	21.0	41.0	62.0	71.7	79.9
Banks	n.a.	11.8	21.7	33.5	39.1	46.5
Nonbanks 1/	n.a.	9.2	19.3	28.6	32.6	33.4
III. Other Assets	.1	.5	.9	1.2	1.6	2.2
Liabilities	4.8	23.8	45.2	66.8	79.1	89.6
I. Liabilities to United States	.5	1.6	11.1	22.7	32.2	40.6
Parent bank	n.a.	.3	7.6	16.2	21.0	24.0
Others	n.a.	1.3	3.5	6.6	11.2	16.6 2/
II. Liabilities to Non-U.S. Residents	4.2	21.7	32.9	42.9	45.3	47.3
Banks	n.a.	19.6	27.4	35.6	36.7	36.7
Nonbanks 1/	n.a.	2.2	5.6	7.3	7.8	10.6
III. Other Liabilities	.1	.5	1.1	1.2	1.6	1.7

1/ Including central banks, central governments, and other official institutions.
2/ Of which $11.7 billion was owed to U.S. nonbanks.

Source: Federal Reserve System

almost 40 per cent of total assets consisted of loans to nonbank borrowers outside the United States, i.e., private and public corporations, national and local governments, central banks, international organizations and all other borrowers except commercial banks. All but a negligible percentage of these borrowers are located outside the Bahamas and Caymans Islands. The loans to these borrowers are negotiated at non-Caribbean centers such as New York, London, and Continental European cities, but are "booked" at the Caribbean branches largely for tax reasons.

Interbank placements are also important, on both sides of the balance sheet, in reflection of the fact that Euro-currency funds received from an initial borrower are typically placed through a "chain" of reporting banks before being lent to a final borrower. Operations with other commercial banks outside the United States--unaffiliated banks and sister branches of the same parent--accounted for over 50 per cent of total assets in September 1978 and over 40 per cent of total liabilities. Only a small percentage of total liabilities were deposits from nonbanks, but banking sources in the United States (parent banks and unaffiliated banks) provide one-third of the total resources of the Bahamas and Caymans branches.

The rate of growth of both the volume of lending activities and interbank placements conducted through the North American Euro-currency market should begin to taper off as its total size increases. However, this Western Hemisphere market--with the bulk of the activity conducted through the Caribbean--will continue to play a dominant role in international banking developments and will provide an aggressive source of competition for London-based Euro-banking.

Factors Contributing to the Growth of the North American Euro-currency Market

The growth of U.S. branch activity in the North American Euro-currency market has, of course been influenced by the same general factors that have caused Euro-currency banking around the world to expand faster than domestic-currency banking. Chief among these factors has been the absence of central bank regulations. In almost all Euro-currency centers there are no reserve requirements on Euro-currency deposits. This enables "Euro-banks"[3] to attract customers by paying a higher rate of interest on deposits or charging a lower rate of interest on loans than would otherwise be profitable. In addition, Euro-banks have been able to pay interest on deposits of less than 30 days while banks in the United States have been prohibited from doing so. Principally because of these

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3/ "Euro-banks" is a convenient term that can also be misleading. Most Euro-currency business is done not by banks engaged solely or primarily in such business, but by banks doing a general banking business of which the borrowing and lending of Euro-currency is but one facet. A "Euro-bank" is thus usually a department of a diversified institution. Apart from the currency aspect mentioned in footnote 1, the principal characteristics that distinguish "Euro-banking" from ordinary banking are: 1) the higher proportion of foreign customers among both deposits and borrowers, and 2) the much higher proportion of both deposits and loans that consists of funds received from, or relent to, other banks.

institutional factors there has been a shift of business from domestic-currency banking to Euro-banking. This shift, which has been gradual because the learning process that customers undergo takes time, explains the more rapid growth of Euro-market transactions. These factors do not, however, explain why the activities conducted in the Caribbean area have increased much faster than have Euro-currency operations in general.

An aspect of the Caribbean branches which differentiates them from other foreign branches of U.S. banks is that almost all are shell branches managed and staffed at the head (or other U.S.) office of the parent rather than locally. The reduction in information costs derived from directly coordinating the operations of these branches at the head office, rather than communicating between managers at two locations, has enhanced the usefulness and profitability of the shell operations. In fact, to implement more effective control of their world-wide operations, major U.S. banks have increasingly coordinated their international banking activities on a global basis from the head office. The efficiency gains derived from this management strategy are considerable. However, in terms of their impact on stimulating the growth of Caribbean branch activity, these gains have been overshadowed by several tax considerations the importance of which has varied from bank to bank.

Tax Factors

The absence of income taxes in the Bahamas and Caymans together with U.S. Federal income tax rulings have had a major impact on Caribbean activity. The United States tax authorities give a credit for foreign income taxes paid. However, this credit has a limit: the income tax that the bank pays to the United States, levied on its <u>worldwide</u> income, must be a minimum percentage of the bank's taxable <u>domestic-source</u> income, that minimum percentage being the statutory rate of corporate income tax in the United States. Currently that rate is 46 per cent. This means that a bank <u>cannot</u> take credit for any portion of its income tax payments to foreign governments that may <u>exceed</u> 46 per cent of its taxable <u>foreign-source</u> income. For this reason, U.S. banks have strived to ensure that the weighted average of the income tax rates they pay in foreign countries does not exceed the U.S. rate (which was 48 per cent prior to 1979).[4/]

For several years the effective income tax rate has exceeded 48 per cent in, <u>inter alia</u>, the United Kingdom, France, Germany, Japan, Austria, and Ireland. When income tax surcharges, local income taxes, and special taxes on income are added to the basic corporate income tax paid in these countries, the comprehensive tax rate ranges between 50 and 60 per cent. In contrast, neither the Bahamas nor the Cayman Islands imposes income taxes on income earned by residents--including the branches of U.S. banks and other foreign banks. Thus, the goal of reducing its average foreign income tax rate to 48 per cent has stimulated

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4/ Banks are allowed, and usually prefer, to take a single credit for all foreign income taxes combined rather than for each one separately, since in the latter case any excess of payments over a 46 per cent rate could not be offset against shortfalls below the 46 per cent rate in places such as the Bahamas and Caymans.

some banks to give their Bahamas or Caymans branches a bigger role in their overall foreign-branch lending activities.[5/] Once the share of a bank's foreign-source income earned in the Caribbean becomes large enough to lower its average foreign income tax rate to 46 per cent, the bank may not have an incentive to increase the share further. However, if foreign income tax rates are subsequently raised, it may again be necessary to increase the share of foreign-source income earned in the Bahamas or Caymans. This occurred when the United Kingdom raised its income tax rate from 40 per cent to 52 per cent effective with taxes due on income earned after March 31, 1973. Because of the high percentage of total branch activity that is conducted in London, this tax increase had a significant impact on the after-tax earnings of U.S. banks and induced them to raise substantially the share of their branch activity conducted in locations where tax rates are low or zero.

Under certain circumstances, a U.S. bank may also want to increase the share of its foreign-source income earned in low-tax (or no-tax) centers even if its average foreign income tax rate is down to 48 per cent. If a bank's domestic-source taxable income is, or is expected to be, negative while its foreign-source taxable income is positive, its foreign-source taxable income will exceed total taxable income. In this situation, the bank's foreign income tax payments will exceed its total

5/ This consideration would not apply to many banks, for which a Bahamas or Caymans branch is its _only_ foreign branch.

income tax liability to the United States. The bank cannot get tax credits from the United States for this excess. Hence, it is advantageous for the bank to reduce its average foreign income tax rate below 48 per cent by an amount sufficient to reduce its foreign income tax liability to the level of its U.S. tax liability. The reduction needed to accomplish this depends upon the amount by which the bank's foreign income exceeds its global income. In 1975-77, when U.S. bank domestic incomes were sharply reduced from earlier years, the realization or expectation of negative taxable domestic-source income induced some banks with extensive foreign branch operations to step up the scale of their Caribbean operations.

In addition to these Federal tax considerations, certain state and local taxes have also influenced the growth of the overseas branch operations of U.S. banks. In many U.S. localities the interest on loans booked in the United States is subject to state or local income taxes. According to market sources, the absence of analogous taxes in the Bahamas and Caymans has induced some U.S. banks to increase their after-tax net earnings by booking loans on "shell" branch books rather than head office books. This has been particularly true for New York City banks which are subject to both New York State and City income taxes.6/

6/ Mention might also be made that foreign taxes cannot be credited against New York State and City taxes.

The sharp increase in New York taxes at end-1975 which brought the effective tax rate for New York City banks to 62 per cent, further increased incentives for New York banks to book loans at their Caribbean branches. High New York taxes have thus had a considerable impact on the growth of the North American Euro-currency market. These taxes have also been instrumental in stimulating the interest of New York City banks in establishing "free-trade zone" international banking facilities in New York City.7/ If these facilities are established, some of the international Euro-currency business which is currently conducted through the Bahamas or Caymans branches of U.S. banks will presumably be shifted to these domestic facilities. At present, however, the Caribbean branches of U.S. banks are of prime importance in carrying out the Euro-currency transactions of the U.S. parent banks.

Non-Tax Factors

In addition to tax considerations and the efficiency gains derived from managing shell branch operations from U.S. head offices, there are several other factors which have induced U.S. banks to conduct an increasing proportion of their total business at their Caribbean branches.

7/ New York State legislation has been passed to exempt international banking activities conducted through domestic international banking facilities ("IBF's") from New York State and local income taxes. These facilities, however, will not be established unless the Federal Reserve Board exempts certain aspects of their operations from Federal Reserve Regulations, particularly Regulations D and Q which otherwise would subject deposits at "IBF's" to reserve requirements and interest rate limitations. See Eugenie D. Short, "How to Abolish Tax Havens", Euromoney (December 1978): 160-162.

One is that the Caribbean shell branches operate during the same hours as their parents and others in the same time zone. This coincidence of working (trading) hours has given the Caribbean area a competitive edge over other overseas financial centers in attracting funds from financial institutions, corporations, and other entities in the United States that are investing rapidly-increasing amounts of funds in either Euro-dollar (or other Euro-currency) deposits.

As one striking aspect of this competitive edge, the Bahamas and Caymans branches are the logical outlet for the ballooning volume of funds that parent banks have wished to employ in the Euro-currency market. Head office placements with Caribbean branches have soared from \$0.3 billion at the end of 1973 to \$24 billion in November 1978, as Table 2 shows. One explanation for the rise is that parent banks have been a convenient source of competitively-priced funds for financing the growth of these branches' assets. The parent bank is one of several sources of funds for which the branch pays a market rate of interest, the other principal source being other banks in the Euro-currency market.[8/] Relative interest rate levels, or interest rate expectations, have sometimes favored branch borrowing from the parent and sometimes borrowing from other Euro-banks.

8/ In addition to the cost of funds to it, some parent banks charge their foreign branches a "finders fee" on placements with the branch.

Parent banks and other banks outside the United States provided Bahamas and Caymans branches with 68 per cent of their total resources in November 1978. In contrast, deposits from corporations and other nonbanks outside the United States provided only 12 per cent; depositors of this type tend to keep funds in long-established financial centers such as London, Paris, etc., because of historical relationships.

But the amount of funds that head offices have "laid off" with Caribbean branches has in fact increased much more rapidly than have the branches' assets. Basically this reflects the fact that loan demand in the Euro-currency market has been increasing more vigorously than loan demand in the United States, especially the demand for loans at large money center banks that dominate shell branch activity. Consequently, these banks have found it profitable to employ an increasing share of their funds in the Euro-currency market.

The coincidence of trading hours for head offices and shell branches has also made it convenient for the U.S. agencies and branches of foreign banks to place funds with and take funds from Caribbean branches. The activity of U.S. agencies and branches of foreign banks has grown spectacularly over recent years.[9] While many of their external transactions are with their own head offices or affiliated branches abroad, they also conduct a considerable portion of international

9/ Their assets increased from $24 billion in November, 1971 to $103 billion in December, 1978.

business with branches of U.S. banks. Of particular importance are week-end arbitrage activities involving U.S. head offices, their overseas branches, and the agencies and branches of foreign banks operating in the United States.[10/]

Another factor behind the exceptional growth of the Caribbean branches has been the reduction in risk that banks, along with nonbank investors, now perceive in placing funds in these branches. Any cross-border placement of funds carries both a commercial risk and a sovereign or transfer risk. The latter reflects concern that for political or national economic reasons government actions will interfere with the scheduled repayment or repatriation of invested funds. The reduction in perceived transfer risk that has occurred over recent years as lenders have become more accustomed to placing funds in the more "nontraditional" Euro-market centers has induced lending banks to increase their credit lines to borrowing banks in the Caribbean. Also, nonbank borrowers have become more willing to have part of their loan proceeds from syndicated Euro-credits credited to their accounts at branches in the Bahamas or Caymans. All this has made it easier for Caribbean branches to raise

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10/ Because of certain peculiarities of the reserve requirements of Federal Reserve member banks, some member banks find it profitable to borrow overnight Euro-dollars through their foreign branches on Friday for repayment Monday. U.S. agencies and branches of foreign banks (which are not members of the Federal Reserve) are frequently the lenders on the other side of these transactions who supply the additional funds needed by the foreign branches of the member banks to satisfy the latters' week-end borrowing needs.

funds and is reflected in the elimination of premiums over London rates on deposits held at these branches.

Competitive pressures have forced changes in the way U.S. banks price loans, and this, too, has tended to channel more business to Caribbean branches. Foreign customers who have borrowed from head offices of U.S. banks have increasingly felt that it was in their interest to obtain dollar loans on Euro-dollar terms--i.e., priced essentially on the cost of Euro-dollar funds to banks plus some stated "spread" over that rate--rather than traditional U.S. terms based on the prime rate. Banks have yielded to pressures to negotiate lending terms in this way. Some banks have not hesitated to put loans priced on Euro-dollar terms on head office books, but others place these loans on their foreign branch books where the cost of funding the loan would be more closely related to the price charged on the loan. Since these loans are usually negotiated at the head office, it is usually more convenient to book them at a Caribbean branch than at a branch outside the Western Hemisphere. This, too, has marginally contributed to the increasing volume of international lending activity being conducted through the Caribbean branches of U.S. banks. Tax factors, however, have been the primary stimulus behind the growth of the international loan portfolios of these Caribbean branches.

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