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## Foreign Dollar Balances: A Review and Extension of the Statistical Record

### *A Functional Approach*

THE principal aim of this chapter is to provide a summary view of the growth of foreign holdings of dollar balances in recent years. We shall look first at foreign liquid claims on the United States on both a gross and net basis; then at liquid dollar claims by foreigners on each other in the Eurodollar market, again on a gross and net basis; and finally at the picture which emerges when foreign holdings of American dollars and Eurodollars are combined.

The selection, classification, and combination of items entering into the statistics are necessarily related to the functions which the dollar performs in the international economy. It is suggested that the principal functions are as follows:

1. To provide foreign central banks and other official institutions with a medium for holding reserves.
2. To provide an international standard of value and an intervention currency for maintaining the desired pattern of exchange rates.
3. To provide foreign commercial banks and businesses with transactions balances and precautionary balances for use in effecting payments in international trade.
4. To provide a medium for financing capital transactions.
5. To provide foreign commercial banks, business firms, and individuals with an attractive medium for investing in interest-earning assets of relatively high liquidity.

Consideration of these functions is helpful in deciding what to include in compiling statistics on liquid dollar claims whether these claims are those of foreigners on U.S. residents, or those of U.S. residents on foreigners, or Eurodollar claims involving claims of foreigners on other foreigners. For some purposes it would be desirable to include in liquid dollar claims all short-term claims calling for payment of dollars.<sup>1</sup> However, data are lacking for measuring the total volume of short-term dollar claims, and, in addition, definitions of liquid dollar liabilities and claims which depart substantially from those employed in the compilation of U.S. official statistics would be confusing. Hence, with minor exceptions, we shall include in U.S. liquid liabilities to foreigners those items regarded as liquid in Department of Commerce balance-of-payments statistics. These items with minor changes are detailed in an appendix to this chapter.

We are also concerned with liquid claims of U.S. residents on foreigners. These data enable us to analyze the net international liquidity position of the United States. For some purposes it is also instructive to examine the net liquid dollar position of major categories of foreigners vis-à-vis U.S. residents.<sup>2</sup> Our data include those items listed as U.S. liquid claims on foreigners in U.S. official statistics plus certain additional items. (See Appendix A to this chapter.)

Our functional approach has also led us to consider the role of Eurodollars and to compile Eurodollar statistics from the various sets of partial data available. From the point of view of analyzing the U.S. balance-of-payments position, Eurodollars are, of course, not claims on the United States. Nevertheless we must recognize

1. Liquid claims as defined by the Department of Commerce consist mainly of short-term claims on banks, U.S. government securities (both short-term and long-term) and marketable short-term claims on nonbanks. Short-term claims on foreign commercial firms arising out of international trade transactions are not regarded as liquid. (For a list of liquid claims according to the Department of Commerce definition, see Appendix A to this chapter.)

2. It would also be useful to examine the net liquid dollar position of major categories of foreigners vis-à-vis U.S. residents by major country or region since, for example, nonbank net creditors may be located in one region and nonbank net debtors in another. Unfortunately, however, data are not available to the authors for this type of disaggregation.

that Eurodollars serve some of the same functions as American dollars—particularly functions (1) and (5) above—and are directly redeemable in American dollars. This subject will be taken up in a separate section of this chapter.

In our statistical analysis of liquid dollar claims we have employed three categories of foreign dollar holders, namely, official institutions, commercial banks, and private nonbanks. Although each of these categories of foreign holders employs dollar balances for more than one purpose, each category of transactor can be assumed to have a unique demand function for dollar balances. Thus the demand for liquid dollar assets by *foreign official institutions* is in large measure a demand for official reserves held in the form of dollars. This demand function is a complex one in the case of the large developed countries since, in recent years, the volume of their official dollar holdings has reflected in considerable measure their exchange rate policies, i.e., the acquisition of dollars in order to avoid an appreciation of their currencies in relation to the dollar. *Foreign commercial bank* demand for American dollars and Eurodollars largely reflects their financial operations as lenders and borrowers (i.e., recipients of deposits) in a variety of currencies. The rapid changes in liquid dollar assets and liabilities of foreign commercial banks in recent years can only be understood through an analysis of the operations of the Eurodollar market. Since a large portion of the recorded liquid dollar claims constitutes internal accounting entries of multinational banks, special consideration will be given to this type of dollar claim. Finally, *foreign nonbanks* demand dollar balances to finance international transactions and to provide them with a highly liquid investment media. While the first function must be served by American dollars, in recent years the second function has been served more by Eurodollar deposits.

#### *Foreign Holdings of American Dollars*

Table 2.1 summarizes the changes in foreign liquid claims on U.S. residents between 1957 and 1971<sup>3</sup> by category of holder, and in

3. The statistics employed in this chapter do not extend beyond the end of 1971, but preliminary figures for the end of 1972 are given in the Appendix Tables.

U.S. liquid claims on foreigners also by category of holder.<sup>4</sup> Although the total volume of foreign liquid claims rose from \$14.9 billion at the end of 1957 to \$66.2 billion at the end of 1971, the rise in volume was fairly steady over the period until 1971 when the total rose by nearly 50 percent as a consequence of the international currency crisis in that year.<sup>5</sup> However, there have been important shifts in the relative size of the holdings by category of holder over the period. Prior to 1966 liquid dollar claims of *foreign official institutions* constituted over half of the total, but by the end of 1969 liquid dollar claims of *foreign commercial banks* represented over half the total, and liquid claims of foreign official institutions had declined from \$18.2 billion at the end of 1967 to \$16.0 billion at the end of 1969.<sup>6</sup> This development was a consequence of the borrowing by U.S. commercial banks from the Eurodollar market, largely through their foreign branches, and some of these borrowed dollars came from foreign official reserves via the Eurodollar market. In 1970 this trend was reversed with the large repayments by U.S. commercial banks to the Eurodollar market, with the result that dollar holdings of foreign official institutions increased substantially to \$23.8 billion, while claims of foreign commercial banks declined from \$23.8 billion at the end of 1969 to \$17.5 billion at the end of 1970. This trend continued during 1971 when claims of foreign commercial banks fell back to the level of four or five years earlier, and claims of foreign official institutions more than doubled to \$50.7 billion.

Liquid claims of *private nonbanks* rose slowly from \$2.7 billion

4. As of December 31, 1971, all but \$2.1 billion of the foreign liquid claims on U.S. residents were payable in dollars and, of the nondollar portion, \$1.9 billion represented claims of foreign official institutions, mainly in the form of non-marketable U.S. Treasury bonds and notes payable in foreign currencies.

5. The total volume of foreign liquid claims on the United States rose from \$8.4 billion at the end of 1950 to \$14.9 billion at the end of 1957, or by 78 percent. Two-thirds of the increase in foreign claims was accounted for by foreign official institutions. See Appendix Table 1.

6. U.S. data on liquid claims of foreign official institutions include dollar claims of the BIS and of the European Fund. Conceptually, these claims should not be included since they do not constitute claims of foreign central banks and governments. Short-term liabilities to the BIS and European Fund reported by U.S. banks constitute the vast bulk of the short-term liabilities to "Other Western Europe" reported regularly in the *Federal Reserve Bulletin* and in the *Treasury Bulletin*. These amounts are given in Appendix Table 2, footnote 1.

TABLE 2.1  
International Liquidity Position of the United States, 1957 and 1963-71  
(end of period; billions of dollars)

	1957	1963	1964	1965	1966	1967	1968	1969	1970	1971
I. Foreign liquid claims on U.S. residents										
A. Central banks and other official agencies										
1. Demand deposits in U.S. banks	3.1	1.4	1.6	1.5	1.7	2.1	2.1	1.9	1.6	1.3
2. Short-term time deposits in U.S. banks		2.5	2.8	2.9	2.7	2.5	1.9	2.9	2.6	2.0
3. U.S. government obligations	5.0	9.5	10.0	10.0	8.2	10.4	9.6	7.5	17.3	44.0
4. Other liquid claims	0.6	1.0	1.4	1.6	2.3	3.2	3.7	3.7	2.3	3.4
Subtotal	8.7	14.4	15.8	15.8	14.9	18.2	17.3	16.0	23.8	50.7
B. Commercial banks (incl. branches of U.S. banks)										
1. Demand deposits in U.S. banks	2.7	4.1	5.0	4.9	6.6	7.8	10.4	16.8	12.4	3.4 (7.0) <sup>e</sup>
2. Short-term time deposits in U.S. banks		0.8	1.0	0.9	1.2	1.1	1.3	2.0	1.4	0.3 (0.9) <sup>e</sup>
3. Other liquid claims	0.7	0.9	1.3	1.6	2.1	2.2	3.0	5.1	3.7	7.7 (2.8) <sup>e</sup>
4. Subtotal	3.5	5.8	7.3	7.4	10.0	11.1	14.6	23.8	17.5	11.3 (10.6) <sup>e</sup>
a. Claims of foreign branches of U.S. banks on parents <sup>a</sup>	n.a.	0.8	1.2	1.3	4.0	4.2	5.6	12.6	6.2	1.3
b. Commercial banks (excl. branches of U.S. banks), of which: Demand deposits in large U.S. banks	n.a.	5.0	6.1	6.1	6.0	6.9	9.0	11.2	11.3	10.0 (9.3) <sup>e</sup>
	n.a.	n.a.	n.a.	1.5	1.6	1.8	2.1	2.5	2.4	2.4

C. Other foreigners									
1. Demand deposits in U.S. banks									
1.8									
2. Short-term time deposits in U.S. banks									
3. Other liquid claims									
Subtotal									
<i>Total</i>									
II. U.S. liquid claims on foreigners									
A. Central banks and other official agencies									
B. Commercial banks, including U.S. branches									
C. Other foreigners									
<i>Total</i>									
III. Intern'l. liquidity position of the U.S. agencies									
A. Central banks and other official agencies									
B. Commercial banks, incl. U.S. branches									
C. Other foreigners									
Net position with foreigners (A, B and C)									
U.S. reserves (gold, SDRs, and IMF gold tranche)									
<i>Net position on all accounts combined</i>									
1.0	1.3	1.6	1.8	2.1	2.2	1.9	1.9	1.7	1.7
0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8
2.7	3.4	4.1	4.3	4.7	5.0	4.6	4.7	4.2	4.2
14.9	23.6	27.3	29.2	34.0	36.9	44.4	46.0	46.0	66.2
0.2	0.4	0.7	1.1	1.6	2.7	3.8	3.0	0.7	0.5
1.2 <sup>b</sup>	4.6	6.2	5.6	5.9	6.4	6.9	7.4	7.7	9.9
0.0 <sup>b</sup>	0.2 <sup>b</sup>	0.6	0.2	0.2	0.3	0.2	0.3	0.4	0.4
1.4 <sup>b</sup>	5.1 <sup>b</sup>	7.5	6.9	7.7	9.4	10.9	10.7	8.8	10.8
-8.5	-14.0	-15.1	-14.7	-13.3	-15.5	-13.5	-13.0	-23.1	-50.2
-2.3 <sup>b</sup>	-1.2	-1.1	-1.8	-4.1	-4.7	-7.7	-16.4	-9.8	-1.4
-2.7 <sup>b</sup>	-3.2 <sup>b</sup>	-3.2	-3.9	-4.1	-4.4	-4.8	-4.3	-4.3	-3.8
-13.5	-18.4	-19.4	-20.4	-21.5	-24.6	-26.0	-33.7	-37.2	-55.4
24.6	15.8	15.4	13.8	12.6	11.5	11.2	13.2	13.3	11.3
11.1	-2.6	-4.0	-6.6	-8.9	-13.1	-14.8	-20.5	-23.9	-44.1

SOURCES: Appendix tables.

NOTE: Columns may not add due to rounding.

a. Estimates for end of 1968, 1969, 1970, and 1971 from *Survey of Current Business*; estimates for earlier years from *Federal Reserve Bulletin*.

b. Excludes liquid claims reported by nonbanking concerns.

c. Change in reporting coverage. Figures in parentheses are comparable in coverage with those on preceding date.

at the end of 1957 to a high of \$5.0 billion at the end of 1968 and then declined to \$4.2 billion by the end of 1971. The behavior of these claims may well have been influenced by the growth of the Eurodollar market and the more attractive yields on Eurodollar deposits as compared with short-term interest rates in the United States.

The composition of foreign liquid dollar claims on U.S. residents is related to the functions of foreign dollar balances. Holdings of *demand deposits* in U.S. banks by foreign official institutions and by private nonbanks, which serve mainly the transactions function in both cases, reached a peak in 1968 and thereafter declined, perhaps indicating a tendency to economize on holdings of noninterest-bearing assets in favor of Eurodollars and short-term time deposits in U.S. banks. The very large increase in American liquid dollar holdings of *foreign official institutions* between the end of 1969 and the end of 1971 is accounted for almost entirely by the increase in holdings of U.S. government obligations; holdings of the other categories of liquid dollar assets declined. The vast bulk of the American liquid dollar holdings of *foreign private nonbanks* has taken the form of demand and short-term time deposits in U.S. banks; this suggests that their holdings of American dollar balances mainly perform the functions of transactions and precautionary balances for use in effecting international payments. The nonbanks' other liquid claims, including U.S. government securities, negotiable certificates of deposit (CDs), and other short-term securities, have remained stable at about one billion dollars from 1957 until the end of 1971.

#### INTRA-MULTINATIONAL BANK LIABILITIES

U.S. liquid liabilities to *foreign commercial banks* require special analysis because of the importance of *intra-multinational bank liabilities* included in the data. Table 2.2 shows that portion of recorded U.S. liquid liabilities to foreign commercial banks constituted by (line 2) the liabilities of U.S. commercial banks to their foreign branches and by (line 4) the liabilities of U.S. agencies, branches and subsidiaries of foreign commercial banks to their head offices and affiliates abroad. Together these liabilities accounted

TABLE 2.2

Analysis of U.S. Liquid Liabilities to Foreign Commercial Banks,  
1964-71  
(end of period; billions of dollars)

	1964	1965	1966	1967	1968	1969	1970	1971
1. Total liquid liabilities <sup>a</sup>	7.3	7.4	10.0	11.1	14.6	23.8	17.5	11.3
2. Liabilities of U.S. banks to their foreign branches <sup>b</sup>	1.2	1.3	4.0	4.2	5.6	12.6	6.2	1.3
3. Liquid liabilities to foreign commercial banks excluding liabilities to foreign branches of U.S. banks—1. 1 — 1. 2	6.1	6.1	6.0	6.9	9.0	11.2	11.3	10.0
4. Liabilities of U.S. agencies, branches and subsidiaries of foreign banking corporations to head offices and affiliates abroad <sup>c</sup>	3.3	3.2	3.5	3.8	4.4	5.6	6.0	4.5
5. Liabilities net of intra-multinational bank liabilities—1. 3 — 1. 4	2.8	2.9	2.5	3.1	4.6	5.6	5.3	5.5
6. Demand deposit liabilities of large U.S. commercial banks <sup>d</sup>	n.a.	1.5	1.6	1.8	2.1	2.5	2.4	2.4
7. Residual—1. 5 — 1. 6—constituting largely interest-earning liabilities to foreign banks	n.a.	1.4	0.9	1.3	2.5	3.1	2.9	3.1 <sup>e</sup>
8. Ratio (in percent) of intra-bank accounting entries to total liquid liabilities—(1. 2 + 1. 4)/1. 1	62	61	75	72	68	76	71	51

a. Table 2.1, l. IB4.

b. Table 2.1, l. IB4a.

c. U.S. Department of the Treasury. Includes Western European, Canadian, and Japanese agencies, branches, and subsidiaries.

d. *Federal Reserve Bulletin*, various issues.

e. \$2.2 billion constituted interest-earning liabilities and \$1.0 billion constituted demand deposits. Data derived from *Federal Reserve Bulletin*, August 1972, p. A80.

for over 70 percent of all recorded U.S. liquid liabilities to foreign commercial banks over the 1966-70 period.

Prior to 1972 these intra-multinational bank liabilities were rather arbitrarily recorded in U.S. statistics. Most were classified as demand deposit liabilities of U.S. commercial banks, some were classified as other types of liabilities, including time deposits. The

unsatisfactory classification of these intra-multinational bank liabilities has rendered the recorded U.S. liabilities to *foreign commercial banks* almost meaningless as far as these categories are concerned.

The liabilities of U.S. commercial banks to their foreign branches largely represent borrowings from the Eurodollar market through their foreign branches. These liabilities have fluctuated greatly; they increased from \$1.2 billion at the end of 1964 to a high of \$14.5 billion at the end of November 1969; thereafter, as U.S. commercial banks repaid their indebtedness to the Eurodollar market, they declined steadily to \$1.3 billion at the end of 1971.<sup>7</sup>

The liabilities of U.S. agencies and branches of foreign banks represent funds invested by Canadian and other foreign banks in the U.S. banking business. For the most part these funds do not appear to be highly volatile. During the period from March 1965 to September 1970 they grew very steadily from \$3.0 billion to \$6.1 billion. During 1971, however, they declined sharply from \$6.0 billion at the beginning of the year to \$4.5 billion at the end, mainly no doubt as a consequence of the dollar crisis of that year. Nevertheless, the number of U.S. agencies and branches of foreign banks has been increasing recently. According to data published by the Federal Reserve Board, the number of U.S. agencies and branches of foreign banks reporting under the VFCR guidelines rose from 51 at the end of December 1971 to 62 at the end of February 1973. During this same period, the foreign assets of these institutions (held for own account) rose from \$3.0 billion to \$5.7

7. Data on the liabilities of U.S. commercial banks to their foreign branches have been compiled by both the Federal Reserve Board and the U.S. Department of the Treasury from reports made by both the head offices of U.S. commercial banks and by the foreign branches. Estimates from the various series do not agree because of the differences in coverage. We have used the end-of-quarter estimates published in the *Survey of Current Business* for the years 1968-71. Beginning with 1970 these estimates have been based on data gathered by the U.S. Department of the Treasury from head offices of the U.S. banks on the last day of the quarter; prior to that time they were based on Federal Reserve reports of the head offices of U.S. banks. There are two sets of estimates published currently in the *Federal Reserve Bulletin*: (1) end-of-month estimates based on reports from the foreign branches (beginning with the February 1972 issue of the *Federal Reserve Bulletin*); and (2) estimates based on reports by the parent banks. These estimates do not agree even when the reporting date is the same, and neither agrees with the Treasury estimates; the discrepancies reflect differences in reporting methods. See *Federal Reserve Bulletin*, July 1972, pp. A88, A90.

billion, indicating that they have been an important channel for the outflow of U.S. capital.<sup>8</sup>

Beginning with the estimate for December 31, 1971, liabilities of U.S. banks to their foreign branches and liabilities of U.S. agencies and branches of foreign banks to their head offices and affiliates abroad are recorded in the *Federal Reserve Bulletin* as "other short-term liabilities" rather than as (mainly) "deposits" as before. In addition, certain liabilities of the foreign branches to foreign official institutions, formerly included in U.S. liabilities to foreign official institutions, are recorded as U.S. liabilities to foreign commercial banks, also under the heading "other short-term liabilities."<sup>9</sup> This change had the effect of reducing the recorded demand deposits of foreign commercial banks in U.S. commercial banks by about \$3.6 billion as of the end of 1971.<sup>10</sup> Unfortunately, data are insufficient to reconstruct the estimates for earlier periods on the revised basis. The data on U.S. liabilities to foreign commercial banks for the period January–September 1971 are also complicated by the issuance of over \$3 billion in special U.S. Treasury and Export-Import Bank securities to foreign branches of U.S. banks; these securities were retired in October 1971.<sup>11</sup> We suggest later that for certain purposes it is desirable analytically to treat foreign branches of U.S. banks as a part of the U.S. resident banking system. In the case of the liabilities of U.S. branches of foreign banks to their head offices and affiliates abroad, however, a good portion of these liabilities probably reflects more or less permanent investments in the U.S. banking system.

Despite the confusing aspects of the data arising from intramultinational bank accounting entries, certain features are apparent. First, exclusive of these entries, foreign commercial bank demand

8. Data taken from a paper by Andrew F. Brimmer entitled "American International Banking: Trends and Prospects," April 2, 1973.

9. Before the reporting system was changed, nearly \$800 million of foreign official deposits with foreign branches of U.S. banks (as of December 31, 1971) were reported as U.S. short-term liabilities to foreign official institutions. See *Federal Reserve Bulletin*, August 1972, Table 8, p. A80.

10. The items are recorded both before and after change in coverage for December 31, 1971, in the *Federal Reserve Bulletin*, July 1972, Table 8, p. A80. See also our Table 2.1.

11. These securities were issued in order to reduce the return flow of funds to the Eurodollar market resulting from the repayment of funds borrowed by U.S. banks.

deposits in U.S. banks rose gradually with the growth in international transactions during the 1960s but then apparently declined slightly. This trend is indicated by the growth of foreign commercial bank demand deposits in large U.S. banks as given in line 6 of Table 2.2.<sup>12</sup> After adjustment to exclude intra-multinational bank items, short-term time deposits of foreign commercial banks (included in line IB2 of Table 2.1 and in line 7 of Table 2.2) have probably been less than a billion dollars throughout the 1960s and were only about \$0.3 billion at the end of 1971. Holdings of U.S. government securities by foreign commercial banks have been a minor item, but holdings of bankers' acceptances and other short-term securities and negotiable CDs have constituted a substantial portion of foreign commercial bank holdings of U.S. liquid dollar assets.

#### THE TRANSACTIONS DEMAND FOR FOREIGN DOLLAR BALANCES

Important questions relating to the international role of the dollar arise from the relationship between the growth of foreign dollar balances available for transactions and precautionary purposes on the one hand and the growth of international transactions financed with dollars on the other. We have noted the relative stability of demand and short-term deposits in U.S. banks held by foreign official institutions and of all liquid dollar assets held by private nonbanks over the 1963–71 period. There did occur a modest growth in demand and time deposits of foreign commercial banks in large U.S. banks over most of the period, but these deposits have declined since 1969. Aside from intra-multinational bank dollar liabilities, foreign holdings of U.S. dollar balances related to the transactions and precautionary function have shown only a modest growth compared with the 120 percent rise in the value of U.S. foreign trade between 1963 and 1971, or the rise of 130 percent in the dollar value of world trade, and with the even larger expansion of international financial transactions arising from the growth of capital movements denominated in dollars.

12. Total foreign commercial bank demand deposit holdings in the United States (excluding intra-multinational bank liabilities) were \$3.4 billion at the end of 1971 (compared with \$2.4 billion held in "large U.S. banks"); no estimates prior to that date are available.

To what extent can it be said that the demand for dollar balances for transactions and precautionary purposes has declined relative to the volume of international dollar transactions? This question has significance for the future demand for dollar balances aside from the demand for dollars as official reserves and for the investment portfolios of foreign private nonbanks. It is possible that the growth of multinational banks and of multinational nonbanking corporations has reduced the demand for the traditional type of foreign dollar balances. Without the expansion of multinational institutions, the growth of foreign deposits in U.S. banks might well have been larger. It also seems likely that Eurodollar deposits have provided a substitute for short-term deposits in the United States.

*U.S. Liquid Claims on Foreigners and  
the U.S. Net Liquidity Position*

An analysis of the U.S. liquid claims on foreigners either for the purpose of estimating the U.S. net international liquidity position or for estimating the net American liquid dollar positions of each of the three categories of foreign liquid dollar asset holders presents difficult conceptual problems. While we have adopted with only minor changes the Department of Commerce definition of U.S. liquid liabilities to foreigners, the Department of Commerce classification of U.S. short-term claims on foreigners as between liquid and nonliquid short-term claims is not only arbitrary but inadequate for the purposes we have in mind. For example, foreign-owned bankers' acceptances and negotiable CDs are regarded as U.S. *liquid* liabilities to foreigners, but three-month U.S. bank loans to foreign banks and official institutions and foreign liabilities to the United States arising from (short-term) acceptances made for the account of foreign banks are regarded in U.S. official statistics as short-term *nonliquid* claims on foreigners. Because of the international intermediation role of the United States, short-term liquid liabilities to foreigners tend to exceed short-term liquid claims on foreigners, but just the opposite is the case with short-term nonliquid liabilities and claims as defined by the Department of Commerce.

While recognizing a certain arbitrariness in all definitions, we

believe it would be appropriate for the purpose of measuring the net international liquidity position of the United States to include in U.S. liquid claims on foreigners *all* short-term claims on foreign banks and official institutions, whether they take the form of loans or deposits. Therefore, we have added to the Department of Commerce estimates of U.S. short-term liquid claims on foreigners U.S. bank-reported loans to foreign commercial banks and official institutions as well as acceptances (short-term) made for the account of foreigners.<sup>13</sup> According to our definition (detailed in the appendix to this chapter), as of December 31, 1971, U.S. liquid claims on foreigners were \$10.8 billion (including U.S. Treasury holdings of convertible currencies); this compares with \$4.3 billion in liquid claims on foreigners according to the Department of Commerce definition. (However, U.S. liquid claims on foreign commercial banks are grossly understated since only a fraction of U.S. resident Eurodollars and other foreign currency deposits with foreign banks are recorded.) On this basis the U.S. net liquidity position vis-à-vis foreigners at the end of 1971 was a negative \$55.4 billion. Taking into account also the U.S. official holdings of gold, SDRs, and the gold tranche position in the IMF, the U.S. overall international liquidity position was a negative \$44.1 billion as contrasted with a positive figure of \$11.1 billion at the end of 1957 and a negative position of \$2.6 billion at the end of 1963 (see Table 2.1).

The vast bulk of the negative U.S. net international position is accounted for by the net position vis-à-vis *foreign official institutions*—a negative \$50.2 billion at the end of 1971. During most of the 1960s the U.S. net liquidity position vis-à-vis foreign official institutions remained fairly constant; it was a negative \$13.0 billion at the end of 1969 as contrasted with a negative \$14.0 billion at the end of 1963. Moreover, until 1970 this negative position vis-à-vis foreign official institutions was in most years approximately offset by U.S. official gold reserves and the IMF gold tranche position. However, as mentioned previously, the U.S. official reserve transactions account was affected positively by U.S. commercial bank bor-

13. In most cases payments under the acceptances are an obligation of a foreign bank.

rowings from the Eurodollar market, especially in 1966, 1968, and 1969.

The U.S. net negative liquid position vis-à-vis *foreign private nonbanks* remained fairly stable over the 1963–71 period, ranging from  $-\$3.2$  billion at the end of 1963 to a high of  $-\$4.8$  billion at the end of 1968 and declining to  $-\$3.8$  billion at the end of 1971 (see Table 2.1). Although U.S. liquid liabilities to private nonbanks totaled  $\$4.2$  billion at the end of 1971 as against U.S. liquid claims of only  $\$0.4$  billion, total U.S. *short-term* claims on foreign private nonbanks were an estimated  $\$10.3$  billion as against  $\$7.1$  billion in U.S. short-term liabilities (liquid and nonliquid) to foreign private nonbanks at the end of 1971.<sup>14</sup> Therefore the U.S. net short-term position vis-à-vis foreign private nonbanks at the end of 1971 was a positive  $\$3.2$  billion.<sup>15</sup> Moreover, the United States has had a positive short-term position vis-à-vis foreign nonbanks since 1960.

Changes in net liquid liabilities of the United States vis-à-vis *foreign commercial banks* have, of course, been greatly affected by U.S. bank borrowings from their foreign branches. As may be observed by comparing line IB4a with line IIB in Table 2.1, changes in the net liquid position of the United States vis-à-vis foreign commercial banks have rather closely paralleled changes in claims of foreign branches of U.S. banks on their parent banks. Changes in the net liquid position of the United States vis-à-vis foreign commercial banks have also been affected by the liabilities of U.S. branches and agencies of foreign banks to their head offices abroad. Moreover, the sum of the above two categories of intra-multinational bank liabilities has exceeded by a substantial margin the net (negative) U.S. liquid position vis-à-vis foreign commercial banks

14. Data for nonliquid U.S. short-term liabilities and claims on foreign private nonbanks are published in the *Federal Reserve Bulletin*, July 1971, Table 14, p. A85; Table 20, p. A87; and Table 26, p. A91. We have assumed that all short-term claims on foreigners in the form of bank-reported "collections outstanding" are liabilities of foreign private nonbanks. Undoubtedly a substantial portion of them represent liabilities of foreign banks, but there is no way of disaggregating the data.

15. The data on U.S. short-term claims do not take into account the large claims of U.S. corporations on their foreign affiliates, many of which should be regarded as short-term claims.

in every year over the period 1963–71, indicating that the United States has had net claims on foreign commercial banks exclusive of intra-multinational bank accounts.<sup>16</sup> As a rule, foreign commercial banks do not take large uncovered positions in foreign currencies. However, a full analysis of the combined American dollar and Euro-dollar positions of foreign commercial banks must include an analysis of their Eurodollar operations.

### *Foreign Holdings of Eurodollars*

Prior to the 1960s virtually all foreign holdings of liquid dollar assets took the form of claims on U.S. entities. Although foreign commercial banks in certain countries have for several decades accepted deposits denominated and payable in U.S. dollars, the Eurodollar market as we know it today has been in existence only since 1957 when the London foreign exchange banks began transacting regular business in dollar deposits.<sup>17</sup> Since that time there has been a spectacular rise in dollar deposits held by foreigners with banks outside the United States and in dollar claims by these banks on foreigners. Thus the development of the Eurodollar market has introduced a volume of liquid dollar obligations of foreign commercial banks to other foreign banks and nonbanks which at the end of 1970 was substantially larger than the volume of U.S. liquid liabilities to foreigners.<sup>18</sup> It is the purpose of this section to discuss the nature of the Eurodollar market and to present estimates of Eurodollar deposits by category of foreign holder.

16. This is true after taking account of the claims of foreign branches of U.S. banks on their head offices and of the claims of foreign banks on their branches and agencies in the United States.

17. See Paul Einzig, *The Eurodollar System*, 3d ed., London: Macmillan, 1967, pp. 2–4.

18. Short-term dollar liabilities (including interbank deposits) to nonresidents, excluding U.S. residents, of the commercial banks of eight European countries plus liabilities of Canadian and Japanese banks totaled \$64 billion as of the end of 1970 (Bank for International Settlements, *Forty-First Annual Report*, Basle, June 1971, pp. 161, 165). To this amount must be added an estimated \$9 billion in short-term dollar liabilities of Canadian banks and of the banks in the eight European countries to the residents of the countries in which the banks are located, plus other foreign-owned Eurodollar deposits for which data are not available.

## NATURE OF THE EURODOLLAR MARKET

Eurodollars are time deposits—denominated and payable in U.S. dollars—held in banks outside the United States, including foreign branches of U.S. banks. Their maturity ranges from “call deposits” to deposits with maturities exceeding one year. The vast bulk of the Eurodollar deposits have a maturity of less than six months. They are not ordinarily transferable through the process of the depositors drawing drafts on their deposits for transfers of funds directly to others. Hence they do not serve as a medium of exchange. Some banks issue Eurodollar certificates of deposit, and there is a substantial secondary market in London for negotiable Eurodollar certificates of deposit.<sup>19</sup>

We may distinguish two levels of the Eurodollar market, each dependent on the other. First, there is the interbank market which is dominated by Western European banks, including the European branches of U.S. banks, and for which London is the principal center. Second, there is the market involving Eurodollar banks on the one hand and nonbank depositors and borrowers on the other.

The interbank market is essentially an interest arbitrage market among commercial banks in which central banks, including the Bank for International Settlements (BIS), participate through swap transactions with commercial banks. Through this market commercial banks adjust their dollar positions over time as required by their obligations arising from nonbank deposits and from their loans to nonbanks and to banks outside the Eurodollar system. The interbank market is somewhat analogous to the Federal Funds market in the United States. It is highly competitive, and traders operate on profit margins of one-eighth of 1 percent or less between the cost and yield on dollar funds.

The system of Eurodollar banks may be regarded as a large financial intermediary. It accepts deposits from individuals, firms, governments, central banks, and commercial banks outside the system, and it makes loans to business firms, government agencies, and commercial banks outside the system. The interest rates paid

19. See E. L. Blacktop, “Sterling and Dollar CDs in London,” *Euromoney*, Vol. 1, October 1969, pp. 24–25.

by Eurodollar banks on these deposits and charged on these loans outside the system tend to fluctuate with the rates established in the interbank market, with allowance for risk and cost factors.

The spread between three-month Eurodollar loan rates to prime borrowers and three-month Eurodollar deposit rates has consistently been under 1 percent. In contrast, in most foreign developed countries, including the European countries, Japan, Australia, and South Africa, the spread has been well over 1 percent and in some countries it is usually in excess of 2 percent.<sup>20</sup> (Canada and the United Kingdom are notable exceptions.) This situation has meant that for most of the countries and in most periods, borrowers have been able to obtain funds at a lower cost and lenders to receive a higher rate of return in the Eurodollar market than in the national money markets.<sup>21</sup> One reason for the smaller spread between the lending and borrowing rates in the Eurodollar market is that Eurodollar banks are not normally required to maintain reserves against Eurodollar deposits. Another factor is that the Eurodollar market is highly competitive on an international basis. Large corporations can borrow at the cheapest rates available throughout the entire Eurodollar market while Eurodollar banks are competing with each other for deposit funds from sources throughout the world. National commercial bank deposit rates are often maintained by collusion among the domestic banks or by regulation; the same may be true of commercial bank loan rates. Finally, the Eurodollar market is a "wholesale" market that exceeds in size that of the domestic money markets of most countries. The greater size and efficiency of the interbank Eurodollar market has narrowed the spread between the cost of funds and the yield on excess funds that Eurodollar banks decide to put into the Eurodollar market.

The Eurodollar banking system may be defined narrowly to include only the commercial banks (including foreign branches of

20. Comparative data on commercial bank deposit rates and lending rates to prime borrowers are given in the monthly issues of Morgan Guaranty Trust Company of New York *World Financial Markets*.

21. Account must be taken of the spread between spot and forward rates on the dollar in terms of the local currency in measuring the differential between national money market rates and covered Eurodollar rates. When the dollar is weak relative to the national currency, borrowers are favored; when the national currency is weak relative to the dollar, lenders to the Eurodollar market are favored.

U.S. banks) of the eight European countries reporting to the BIS, or more broadly to include all banks outside the United States that accept dollar deposits and make dollar loans. However, except for data on the U.S. dollar liabilities and assets of Canadian banks published by the Canadian government and certain data on the assets and liabilities of foreign branches of U.S. banks, our statistical information for the analysis of the operations of the Eurodollar banking system consists mainly of data for commercial banks of the eight European countries reporting to the BIS. These eight European countries are referred to as the "inside area,"<sup>22</sup> while the rest of the world is referred to as the "outside area." Although we would like to be able to analyze the operations of Eurodollar banks throughout the world, limitations of data have constrained our analysis mainly to the operations of banks in the "inside area" plus Canada.<sup>23</sup>

A Eurodollar deposit may be held by a foreign individual or private nonbank corporation, by a foreign official institution such as a central bank, or by a foreign commercial bank. Eurodollar deposits are also held by U.S. residents, but in this case they are not "foreign-owned" balances from a U.S. perspective. To the individual holder, a Eurodollar deposit in a foreign branch of a U.S. bank is little different from a liquid claim on the U.S. parent bank. For example, if a foreigner shifts his deposit from the Chase Manhattan Bank in New York to the London branch of the Chase Manhattan

22. "Inside area" banks include the commercial banks in Belgium, France, Germany, Italy, the Netherlands, Sweden, Switzerland, and the United Kingdom plus the BIS (the assets of which are included in the data recorded for the Swiss banks).

23. The BIS *Annual Reports* also provide data on the dollar assets and liabilities vis-à-vis nonresidents of the commercial banks of Canada and Japan, but no data are given on the dollar positions of residents of these countries. Data on nonresident dollar liabilities and assets of British banks are regularly reported in the Bank of England *Quarterly Bulletin*, and fairly complete data on the U.S. dollar assets and liabilities of Canadian banks are published by the *Bank of Canada Review* (formerly *Statistical Summary*). Data on dollar liabilities and claims of foreign branches of U.S. banks are gathered and reported by the U.S. Treasury and the Federal Reserve Board. Finally, there are limited data on dollar claims and obligations of commercial banks of other countries usually published in reports of the central banks. Unfortunately there are serious gaps in all of the data series and the data coverage is not consistent between various sources. We have, therefore, limited our statistical analysis of the Eurodollar market to the BIS data, supplemented by certain data from British, Canadian, and U.S. governmental sources and from the IMF.

Bank, he continues to have a dollar claim on the Chase Manhattan Bank even though technically his dollar claim is now on a British resident rather than on a U.S. resident. Eurodollar deposits with foreign commercial banks other than branches of U.S. banks are clearly liabilities of foreign institutions, although to the individual deposit holder it may make little difference whether his Eurodollar deposit is with a British bank or a Swiss bank or a foreign branch of a U.S. bank.

Eurodollar bank loans to foreigners give rise to dollar obligations of one non-U.S. resident to another. Only if the loans are made to U.S. residents do they constitute dollar liabilities of the United States to foreigners. The proceeds of dollar loans by Eurodollar banks may appear initially as a deposit on the books of the lending bank, with payment being made by wire transfer; the dollars can be used for making payments to U.S. residents, to non-U.S. residents, or for increasing the dollar balances of the borrower in a U.S. resident bank or its foreign branch. The borrower frequently converts the dollars into a nondollar currency on the foreign exchange market for financing purchases in his own or a third currency. Such dollars sold on the foreign exchange market may accrue to foreign banks or nonbanks or they may flow into a foreign central bank.

Foreign branches of U.S. banks have played a leading role in the development of the Eurodollar market. The rapid growth in the number and size of these branches has been in response both to the requirements of the parent banks for borrowing funds from the Eurodollar market under conditions of credit stringency in the United States and to the desire to accommodate the banking needs of their corporate customers who have gone abroad. It is unlikely that the Eurodollar market would have achieved anything like its present size and importance in the absence of the expansion of the Eurodollar operations of foreign branches of U.S. banks beginning in the early 1960s. We therefore regard the Eurodollar market in considerable measure as an extension of the U.S. banking system.<sup>24</sup>

24. U.S. dollar liabilities of all foreign branches of U.S. banks (excluding those in the Bahamas) to nonresidents of the United States totaled \$31 billion as of December 31, 1971 (including dollar liabilities to residents of the foreign country in which they were domiciled). As of the same date, U.S. dollar liabilities of all "inside area" banks to nonresidents (excluding U.S. residents) were estimated to be \$65 billion. (BIS 1972 *Annual Report*, p. 151) Although not all foreign

The Eurodollar market constitutes the dominant part of the larger Eurocurrency market. Nondollar Eurocurrencies, including bank deposits denominated in Deutsche marks, Swiss francs, sterling, and gulden, among others, are time deposits in banks domiciled in countries other than the country whose currency is involved. Between December 31, 1969, and December 31, 1971, nonresident Eurocurrency liabilities of the European banks reporting to the BIS rose from \$56.8 billion to \$97.9 billion, and the nondollar portion rose from 19 percent to 28 percent over the same period. Part of the increase in the nondollar portion reflected the currency revaluation in 1971, but even disregarding the effects of the currency revaluation, the relative importance of *Eurodollars* declined. Despite the external weakness of the dollar during 1970 and 1971, the Eurodollar market, as measured by the BIS, has continued to grow although at a slower rate than in 1968 and 1969.

#### THE BIS CONCEPTUAL FRAMEWORK OF THE EURODOLLAR MARKET

The conceptual framework formulated by the staff of the BIS for estimating the "net size" of the Eurodollar market is based on the dollar liabilities (sources of dollars) and dollar assets (uses of dollars) of the commercial banks in the eight European countries reporting to the BIS, that is, the "inside area" banks as a group.<sup>25</sup> The framework is illustrated by the organization of data for the 1964-71 period, given in Table 2.3. Sources of dollar funds to the "inside area" banks are divided into two general categories, namely, "outside area" sources and "inside area" sources. (This conceptual framework is obscured by the geographical classification of sources in Table 2.3.) The "outside area" sources consist of deposits, or other short-term claims,<sup>26</sup> held by commercial banks, central banks,

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branches of U.S. banks are located within the "inside area," the "inside area" branches of U.S. banks account for about 85 percent of all liabilities of foreign branches of U.S. banks (excluding the Bahama branches).

25. BIS, *Thirty-Ninth Annual Report*, Basle, June 1969, Chap. V.

26. In calculating both U.S. sources and uses, the BIS has adjusted the data on U.S. short-term claims on and liabilities to European reporting banks so as to exclude working and compensating balances with U.S. banks and loans and credits from the United States to the "inside area" banks regarded as not "related to the growth of the Eurodollar market." *Ibid.*

TABLE 2.3  
 Estimated Net Size of the Eurodollar Market  
 in Eight European Countries, 1964-71  
 (end of period; billions of dollars)

	Dec. 1964	Dec. 1965	Dec. 1966	Dec. 1967	June 1968	Dec. 1968	June 1969	Dec. 1969	Dec. 1970 <sup>a</sup>	Dec. 1971 <sup>b</sup>
<b>Sources</b>										
United States	0.6	0.7	1.1	1.7	2.9	3.2	4.4	3.8	4.2	5.7
Canada	0.9	0.6	0.6	0.9	1.0	1.3	2.3	2.9	3.8	4.0
Subtotal	1.5	1.3	1.7	2.6	3.9	4.5	6.7	6.7	8.0	9.7
Western Europe										
"inside area"	4.4	6.6	8.4	9.6	12.2	13.2	16.8	18.3	21.0	23.4
Nonbanks	1.8	2.2	2.8	4.0	4.8	5.2	8.1	9.8	9.7	10.8
Banks <sup>c</sup>	2.6	4.4	5.6	5.6	7.4	8.0	8.7	8.5	11.3	12.6
Other Western Europe	n.a.	n.a.	1.1	1.4	1.5	1.9	2.1	2.7	4.5	4.9
Subtotal	n.a.	n.a.	9.5	11.0	13.7	15.1	18.9	21.0	25.5	28.3
Japan	—	—	—	0.1	0.1	0.1	0.2	0.4	0.6	0.9
Eastern Europe	0.3	0.3	0.4	0.4	0.4	0.6	0.6	1.0	1.0	1.2
Other	n.a.	n.a.	2.9	3.4	4.4	4.7	7.1	8.4	10.9	13.4
Subtotal	n.a.	n.a.	3.3	3.9	4.9	5.4	7.9	9.8	12.5	15.5
<b>Total</b>	<u>9.0</u>	<u>11.5</u>	<u>14.5</u>	<u>17.5</u>	<u>22.5</u>	<u>25.0</u>	<u>33.5</u>	<u>37.5</u>	<u>46.0</u>	<u>53.5</u>
<b>Uses</b>										
United States	1.8	2.0	4.4	5.2	8.8	9.5	16.7	16.5	12.7	8.0
Canada	0.4	0.7	0.6	0.7	0.9	0.9	1.2	1.3	2.3	1.8
Subtotal	1.2	2.7	5.0	5.9	9.7	10.4	17.9	17.8	15.0	9.8
Western Europe										
"inside area"	5.0	6.3	6.3	6.9	7.1	7.9	8.9	11.6	17.4	21.9
Nonbanks	2.3	3.3	3.7	4.1	4.5	4.7	5.1	5.6	10.1	12.5
Banks <sup>d</sup>	2.7	3.0	2.6	2.8	2.6	3.2	3.8	6.0	7.3	9.4
Other Western Europe	n.a.	n.a.	0.9	1.2	1.4	1.5	1.3	1.6	2.6	4.0
Subtotal	n.a.	n.a.	7.2	8.1	8.5	9.4	10.2	13.3	20.0	25.9
Japan	0.4	0.5	0.6	1.0	1.4	1.7	1.4	1.5	2.3	3.1
Eastern Europe	0.5	0.5	0.7	0.8	0.8	0.9	0.9	1.0	1.7	2.4
Other	n.a.	n.a.	1.0	1.7	2.1	2.6	3.1	3.9	7.0	12.3
Subtotal	n.a.	n.a.	2.3	3.5	4.3	5.2	5.4	6.4	11.0	17.8
<b>Total</b>	<u>9.0</u>	<u>11.5</u>	<u>14.5</u>	<u>17.5</u>	<u>22.5</u>	<u>25.0</u>	<u>33.5</u>	<u>37.5</u>	<u>46.0</u>	<u>53.5</u>

SOURCES: BIS *Annual Reports* for 1969 (*Thirty-Ninth*), 1970 (*Fortieth*), 1971 (*Forty-First*), and 1972 (*Forty-Second*).

a. Some of the data for December 1970 have been derived indirectly from the BIS *Forty-First Annual Report*, 1971.

b. The BIS *Forty-Second Annual Report*, 1972, did not break down the table on the estimated size of the Eurocurrency market by Eurodollars and other Eurocurrencies. It gave only the approximate net size of the Eurodollar market as \$54 billion as of December 31, 1971. The breakdown in this column has been derived and partly estimated from other data given in the BIS *Forty-Second Annual Report*. In estimating "inside area" nonbank sources and uses, it was assumed that the ratio of dollar "inside area"

Footnotes from Table 2.3 continued

nonbank sources and uses to total Eurocurrency "inside area" nonbank sources and uses was the same as the ratio of all dollar nonbank sources and uses to total Eurocurrency nonbank sources and uses, respectively. This may not have been the case so that, for example, dollar "inside area" nonbank sources may be overstated while dollar "inside area" nonbank uses may be understated.

c. Deposits by official monetary institutions (including the BIS) of the reporting area and conversions by the banks of domestic or third-currency funds into dollars.

d. Conversions by the banks of Eurodollar funds into domestic or third currencies.

and private nonbanks outside the eight European reporting countries with the commercial banks in the reporting area ("inside area" banks). The "inside area" sources consist of deposits of private nonbanks within the reporting area (both residents and nonresidents of the countries of the commercial banks holding the deposits) and "bank" sources.<sup>27</sup> For this purpose, the "bank" sources include deposits of the BIS, deposits of "inside area" central banks, and dollars injected into the market by the "inside area" banks themselves. The latter are derived by the conversion of domestic or third currencies into dollars by the "inside area" banks, in part through swap transactions with central banks. "Inside area" interbank deposits are excluded from both the sources and uses of dollars and therefore from the BIS calculation of the "net size of the market," which is defined as equal to the sum of the sources or the sum of the uses.<sup>28</sup> The reasons for eliminating "inside area" interbank deposits are similar to those advanced for deducting interbank deposits in computing the domestic money supply. It should be stressed that not all of the dollar sources of the market are nonbank Eurodollar deposits. The sources generated by the "inside area" banks by the conversion of nondollar currencies into dollars and lent directly to customers or passed through to other "inside area" banks for lending to customers do not originate with nonbank deposits. However, we do not know the exact volume of these sources since a portion of the "bank" sources given in Table 2.3 constitute deposits of "inside area" central banks and the BIS.

The BIS concept of uses parallels its concept of sources. "Out-

27. The BIS terminology becomes confusing and, at this point, misleading, in view of what is included in and excluded from "bank" sources, as further explained in the text.

28. For an analysis of the BIS concept of the "net size of the market," see *BIS Annual Report for 1969 (Thirty-Ninth)*, pp. 147-151.

side area" uses consist of dollar claims of "inside area" banks on both banks and nonbanks outside the reporting area, while "inside area" uses are divided between claims on nonbanks and "bank" uses. The latter item (designated by "banks" under the heading "inside area" uses in Table 2.3) represents the amount of dollars obtained from various sources which are converted by the banks into domestic or third currencies for loans to customers. Hence, not all of these uses generate dollar obligations to "inside area" banks, just as not all of the sources constitute dollar deposit liabilities of "inside area" banks. These anomalies in the BIS concept of the "net size of the market" raise complications in the calculation of the volume of foreign dollar liquidity in the form of Euro-dollar deposits.

In its 1971 annual report, the BIS for the first time provided data on liabilities and assets of "inside area" banks vis-à-vis all nonresidents,<sup>29</sup> banks and nonbanks. The item for banks lumps together both nonresident commercial bank and official institution assets and liabilities vis-à-vis "inside area" banks,<sup>30</sup> but fortunately there are estimates of Eurodollar holdings of official institutions in other sources. The BIS also publishes data on the assets and liabilities of "inside area" banks vis-à-vis all nonbanks within the eight reporting countries. U.S. government data on assets and liabilities of foreign branches of U.S. banks provide data which differentiate among foreign commercial banks, nonbanks, and foreign official institutions, but not on a geographical basis. Canadian banking statistics provide a breakdown between banks and nonbanks on a geographical basis. Unfortunately, therefore, it is impossible to combine the data from these various partial sources so as to provide a complete breakdown of all Eurodollar bank liabilities and assets vis-à-vis commercial banks, official institutions, and nonbanks, and on a geographical basis.

The dollar and nondollar components of the Eurocurrency market are in effect all part of the same market, and the BIS concept of the net size of the Eurodollar market in terms of sources and

29. That is, residents other than of the country in which the reporting bank is located. Unless further specified, "nonresidents" in the BIS terminology may reside either in another "inside area" country or outside the area.

30. *Forty-First Annual Report*, p. 159.

uses of dollars, as distinct, say, from the sources and uses of Euro-Deutsche marks, is something of an artificial abstraction. For example, if the "source" of dollars to the market is a Deutsche mark deposit converted into dollars by a Eurocurrency bank, the Deutsche mark deposit is regarded as a "source" in the calculation of the net sizes of both the Eurodollar market and the Euro-Deutsche mark market. Conversely, if a dollar deposit with a Eurocurrency bank is converted into Deutsche marks and lent to a customer, the Deutsche mark loan becomes both a "use" of dollars and a "use" of Deutsche marks. This system of accounting may lead to a misinterpretation of the table published in the BIS 1971 annual report (p. 164) showing the estimated size of both the Eurodollar market and of the total Eurocurrency market. Thus, it would not be correct to subtract the items included in the estimated size of the Eurodollar market in order to obtain a corresponding value for the combined nondollar Eurocurrency market.

For the reason stated above, the BIS 1972 annual report (p. 155) did not disaggregate the Eurocurrency market by giving separate estimates, as in previous annual reports, for dollar and nondollar "sources" and "uses." It did, however, give an overall estimate of the "net size" of the Eurodollar market alone for the end of 1971. Thus the data given in Table 2.3 for the "net size" of the market at the end of 1971 were derived by the authors from other tables on dollar liabilities and assets given in the BIS 1972 annual report. Since our concern is with Eurodollar liabilities and assets and not with other Eurocurrencies, the above consideration does not affect the validity of the BIS concept of the Eurodollar market.<sup>31</sup>

#### VOLUME AND COMPOSITION OF FOREIGN LIQUID DOLLAR ASSETS REPRESENTED BY EURODOLLAR DEPOSITS

Not all Eurodollar deposits should be included in the concept of foreign liquid dollar assets any more than all domestic deposits in commercial banks should be included in the definition of money. In determining what Eurodollar deposits should be included we are faced with many of the same problems that arise in measuring the volume of domestic money. The definition of foreign liquid dollar

31. The above analysis is based on private correspondence with a member of the staff of the BIS.

assets should be functionally oriented, and Eurodollar deposits perform several international monetary functions. Although not ordinarily employed for financing international trade and other transactions, Eurodollars are highly liquid and are denominated in the principal international currency. Consequently they serve to economize on the use of U.S. demand deposits required for transactions purposes and are a good substitute for other highly liquid American dollar assets, e.g., time deposits, required as precautionary balances. Eurodollar deposits of longer maturity provide investors with a liquid dollar asset which is a close substitute for American liquid dollar assets of similar maturity but they yield a higher return with little additional risk or conversion cost. Eurodollars also provide central banks with an international reserve asset which may yield a higher return or other advantages over American liquid dollar assets. Finally, Eurodollar deposits are a substitute for holding liquid assets denominated in other currencies. Much the same functions could be performed by deposits and loans denominated in any international currency. In fact, there are some economists who would question our inclusion of Eurodollars in an analysis of foreign liquid dollar assets on the grounds that Eurodollars are nothing more than bank deposits in foreign banks that happen to be denominated in dollars as a convenient numéraire.<sup>32</sup> We reject this position for three reasons. First, Eurodollar deposits constitute a specific claim on American dollars, and the proceeds of Eurodollar loans are quickly transferred by the borrowers for making dollar payments or for conversion into other currencies rather than held as working balances. Second, Eurodollar deposits are dollar liabilities of banks and therefore affect the behavior of banks regarding their assets. Third, the Eurodollar market is closely tied to the U.S. monetary system, largely as a consequence of the dominant role of foreign branches of U.S. banks in the market.

Foreign nonbank concerns and individuals, official institutions,

32. For example, Ira Scott states that ". . . the so-called Euro-dollar market is neither European nor a market for dollars. It is, rather, the market for bank deposits which are denominated in foreign currencies." (Ira O. Scott, *The Euro-dollar Market and Its Public Policy Implications*, Joint Economic Committee, Congress of the United States, 91st Congress, Second Session, USGPO, Washington, D.C., February 25, 1970, p. 2.)

and commercial banks may all utilize Eurodollar deposits for one or more of the functions of international money described above. Nevertheless, in calculating the volume of Eurodollars that effectively serve these functions it is necessary to avoid certain duplications. As has been noted, the BIS considers the commercial banks in the eight reporting countries ("inside area" banks) as constituting a system of financial intermediaries and therefore excludes their claims on each other from its calculation of the "net size of the market." Two objections may be made to this approach. First, the system of financial intermediaries represented by the banks in the "inside area" is arbitrarily defined since banks in other Western European countries, Canada, the Bahamas, and in certain other areas of the world participate in one degree or another in the international financial intermediary system in which Eurodollar funds deposited in one bank are shifted by redepositing in other banks so as to equate the demand with the supply of Eurodollar funds. Logically, therefore, the BIS concept of the "net size of the market" ought to be expanded to include all of the banks that accept dollar deposits and play an active role in the interbank market. Such an expansion would require both the inclusion of additional Eurodollar deposits held by these banks in the enlarged system and the deduction of additional interbank deposits in the calculation of the BIS concept of the "net size of the market."<sup>33</sup> However, the definition of "inside area" banks has been dictated in considerable measure by the availability of data to the BIS—data on the Eurocurrency operations of commercial banks in the eight countries that are regularly reported to that institution.

33. The BIS does not publish an estimate of "inside area" interbank deposits employed in the calculation of the "net size of the market." However, we may estimate such interbank deposits to be approximately \$20 billion as of December 31, 1969. This estimate is found by deducting from the \$25.6 billion in liabilities of "inside area" banks to "inside area" nonresidents an estimated \$4.9 billion in liabilities of "inside area" banks to "inside area" nonresident nonbanks. By way of clarification, "inside area" nonresidents" are nonresidents of the country in which the individual reporting bank is located; it does not mean nonresidents of the entire "inside area." (The \$25.6 billion figure is given by the BIS *Fortieth Annual Report*, p. 156. The \$4.9 billion estimate is based on estimates of "inside area" bank liabilities to "inside area" nonresident nonbanks for the years December 1964–December 1967 given in earlier BIS Annual Reports, but not given for 1968 and 1969 in the *Fortieth Annual Report*.)

The second problem in the BIS concept, at least for the purposes of the present analysis, arises from the fact that the Eurodollar liabilities of foreign branches of U.S. banks are actually dollar liabilities of U.S. banks, even though they are technically not liabilities of U.S. residents. In one sense, foreign branches of U.S. banks are part of the U.S. banking system; in another sense, they operate as nonresident banks. The resources of a foreign branch are legally available to the parent bank, and the parent bank is responsible for the liabilities of its branches. Yet there are constraints on transfers of funds between a branch and its parent arising out of both the Voluntary Foreign Credit Restraint Program (VFCR) and the special reserve requirements on transfers of funds from foreign branches to parent banks established by the Federal Reserve Board in 1969. Except during periods when their parent banks are borrowing heavily from the Eurodollar market, most of the deposits of foreign branches of U.S. banks are employed for making loans to non-U.S. residents. Nevertheless, dollar deposits in foreign branches of U.S. banks have at times been transferred to the parent for use in the domestic money market, and foreign branches often make loans that otherwise would have been made by the parent bank. In a variety of ways foreign branches of U.S. banks serve as channels whereby U.S. monetary conditions are transferred abroad. This is also true of agencies and branches of foreign banks operating in the United States.

Foreign branches of U.S. banks play a dual role in the Eurodollar market. On the one hand, their Eurodollar deposit liabilities are the liabilities of U.S. banks to the depositors and are virtually equivalent to American liquid dollar assets. On the other hand, the foreign branches are a part of the system of Eurodollar banks that carry on a large volume of redepositing with one another in the process of shifting Eurodollar funds from nonbank lenders to the ultimate borrowers. These interbank deposits arising out of the financial intermediary functions of the system of Eurodollar banks should not be included in the calculation of foreign dollar liquidity. Nevertheless, foreign commercial banks hold dollar deposits with foreign branches of U.S. banks as precautionary balances or for other purposes as a substitute for holding balances with the parent banks in the United States. Therefore, we believe that a portion of the for-

eign commercial bank holdings of Eurodollar deposits in foreign branches of U.S. banks should be regarded as foreign dollar liquidity on a par with foreign commercial bank balances held with U.S. resident banks. Perhaps the best measure of this element is the *net* deposit liabilities of foreign branches of U.S. banks to foreign commercial banks. These net deposit liabilities rose from about \$0.8 billion at the end of 1965 to \$9.7 billion at the end of 1969 but fell to \$4.0 billion at the end of 1971 (see Table 2.4). Changes in net

TABLE 2.4

Foreign Branches of U.S. Banks: Dollar Liabilities to Foreign Commercial Banks and Dollar Deposits in Foreign Banks, 1965-71\*  
(end of year; millions of dollars)

	Liabilities to Foreign Commercial Banks		Deposits in Foreign Commercial Banks		Net	
	All Branches	U.K. Branches	All Branches	U.K. Branches	All Branches	U.K. Branches
1965	1,845	1,536	1,028	843	817	693
1966	3,419	2,762	1,210	999	2,209	1,763
1967	4,409	3,700	1,815	1,506	2,594	2,194
1968	7,553	6,121	2,241	1,838	5,311	4,283
1969	17,793	13,302	8,074	6,265 <sup>a</sup>	9,719	7,037 <sup>a</sup>
1970	19,807	13,684	13,248	9,420 <sup>a</sup>	6,559	4,264 <sup>a</sup>
1971	22,069	14,038	18,040	12,762 <sup>a</sup>	4,029	1,276 <sup>a</sup>

SOURCES: For 1965-68, *Treasury Bulletin*, November 1970; for 1969, 1970, and 1971, *Federal Reserve Bulletin*, February 1972, pp. 110-113, and July 1972, pp. A88-A89.

\* Data for 1965-68 and 1969 and 1970 are not exactly comparable.

a. Includes deposits of foreign official institutions.

liabilities of the foreign branches to foreign commercial banks have closely paralleled changes in net claims of the branches on U.S. residents, including parents. Details on these relationships will be given in Chapter 3.

Turning now to the *foreign nonofficial nonbank* Eurodollar deposits, clearly all such deposits should be included in our concept of foreign liquid dollar assets. Unfortunately, data on such deposits are mainly limited to those held with "inside area" and Canadian

banks.<sup>34</sup> We estimate that Eurodollar deposits with these banks held by foreign nonofficial nonbanks throughout the world rose from \$7.0 billion at the end of 1966 to \$17.6 billion at the end of 1970, but then fell to \$14.5 billion at the end of 1971 (see Table 2.5 and explanatory note). During the expansion phase the bulk of the growth in these deposits took place in 1969, when these deposits grew by \$7.9 billion. Eurodollar deposits of *foreign private nonbanks* rose proportionately more during 1969 than any other source of Eurodollar funds contributing to the growth of the market. Moreover, foreign private nonbank deposits held by the residents of the "inside area" countries with "inside area" banks accounted for \$4.6 billion (or about 60 percent) of the \$7.9 billion increase in foreign private nonbank Eurodollar deposits during 1969. Another \$1.7 billion was accounted for by the increase in (non-U.S. resident) private nonbank Eurodollar deposits in Canadian banks, leaving only \$1.6 billion to be accounted for by private nonbank depositors in the rest of the world outside the United States. Apparently "inside area" residents were attracted by the high interest rates on Eurodollar deposits relative to those available in the domestic markets, while the risk of holding dollars seemed small at a time when the U.S. official reserve transactions balance was in substantial surplus and "inside area" central banks were losing dollars. During 1970 "inside area" private nonbanks reduced their Eurodollar deposits slightly, and the growth of funds available for Eurodollar lending to non-U.S. residents was provided mainly by the repayment of dollars to the market by U.S. banks and by Eurodollar deposits made by foreign official agencies.

In estimating private nonbank Eurodollar deposits, we must recognize that the ultimate holders of deposits are frequently not known to the reporting banks, and that the figures given in Table 2.5 are probably understated.<sup>35</sup> Moreover, there are dollar deposits by nonofficial nonbanks held in commercial banks in areas of the

34. We also have data on total foreign nonbank Eurodollar deposits with foreign branches of U.S. banks. Although the bulk of these deposits are *included* in the BIS data on "inside area" banks, we have no satisfactory way of determining the amount *excluded* from the BIS data.

35. Individuals and nonbanking concerns frequently hold Eurodollar deposits through banks acting as trustees so that the "inside area" and Canadian banks may report such deposits as being held by foreign banks.

TABLE 2.5

Estimates of Nonofficial Nonbank Eurodollar Deposits  
With "Inside Area" and Canadian Banks, Excluding U.S.  
Resident Deposits, 1966-71  
(end of period; billions of dollars)

	1966	1967	1968	1969	1970	1971
1. Inside area bank liabilities to inside area nonbanks <sup>a</sup>	2.8	4.0	5.2	9.8	9.7	10.8
2. Inside area bank liabilities to all nonresident nonbanks <sup>b</sup>	4.1	4.7	6.2	10.5	11.2	10.0
3. Inside area bank liabilities to inside area nonresident nonbanks <sup>c</sup>	1.4	2.0	2.6	4.9	4.8	5.4
4. Inside area bank liabilities to U.S. resident nonbanks <sup>d</sup>	0.5	0.8	2.3	2.7	3.1	4.0
5. Total inside area bank liabilities to nonbanks, excl. U.S. res. (1. 1 + 1. 2) - (1. 3 + 1. 4)	5.0	5.9	6.5	12.7	13.0	11.4
6. Canadian bank U.S. dollar liabilities to nonbanks excluding U.S. residents <sup>e</sup>	2.0	2.4	2.8	4.5	4.6	3.1
7. Total (1. 5 + 1. 6)	7.0	8.3	9.3	17.2	17.6	14.5

SOURCES: BIS *Annual Reports* and *Bank of Canada Review*, various issues.

NOTE: In the construction of Table 2.5, we began with the BIS figures for "inside area" bank liabilities to "inside area" nonbanks (line 1) and for "inside area" bank liabilities to all nonresident nonbanks (line 2). Line 2 includes that portion of line 1 which constitutes "inside area" bank liabilities to "inside area" nonresident nonbanks (line 3), an amount which had to be estimated. Hence in order to avoid double counting we subtracted line 3 from the sum of lines 1 and 2. In addition, in order to exclude U.S. resident deposits we also subtracted line 4. In this way we obtained total "inside area" bank liabilities to all nonbanks, excluding U.S. resident nonbanks (line 5). To this figure we added Canadian bank U.S. dollar liabilities to nonbanks, excluding U.S. residents (line 6), and obtained estimates of Eurodollar deposits held by foreign firms and individuals with "inside area" banks and Canadian banks (line 7).

"Inside area" bank liabilities to U.S. resident nonbanks (line 4) are very rough estimates of that portion of U.S. sources in Table 2.3 which constitutes U.S. nonbank sources. There are statistics on the liabilities of foreign branches of U.S. banks to U.S. residents other than their parent banks; these include liabilities to both U.S. banks and nonbanks and, in any case, probably include no more than half of the U.S. nonbank dollar deposits with "inside area" banks recorded in the BIS data. See *Federal Reserve Bulletin*, current issues, and *Treasury Bulletin*, November 1970. (Actually the BIS data greatly underestimate U.S. resident sources since a large portion of the U.S. Eurodollar deposits are hidden in trustee accounts. However, the important thing for our estimate of foreign nonbank Eurodollar deposits is to subtract from the BIS estimate of total nonbank deposits that amount which represents U.S. nonbank deposits included in the BIS data.)

There are also statistics on U.S. short-term liabilities to each of the eight "inside area" countries reported by U.S. banks (*Federal Reserve Bulletin*, various issues). We have reason to believe that these liabilities consist largely of liabilities of U.S. banks or other liabilities not recorded as nonbank Eurodollar deposits. The esti-

Footnotes from Table 2.5 continued

mates in line 4 are derived by taking the larger of: (a) liabilities of foreign branches of U.S. banks to U.S. residents other than their parent banks; or (b) the BIS figure for U.S. sources (Table 2.3) less U.S. short-term liabilities to the eight "inside area" countries reported by U.S. banks.

a. Data from Table 2.3.

b. Data for all years from BIS, *Forty-Second Annual Report*, 1972, p. 151.

c. Estimates are based on the assumption that one-half of "inside area" bank liabilities to "inside area" nonbanks are to "inside area" nonresident nonbanks. This was roughly the proportion for 1966 and 1967. (See BIS, *Thirty-Eighth Annual Report*, June 1968, p. 154.)

d. Years 1968-71 estimated by subtracting U.S. short-term claims on "inside area" countries reported by U.S. banks from BIS estimates of "inside area" bank dollar liabilities to U.S. residents. Years 1966 and 1967 are dollar liabilities of foreign branches of U.S. banks to U.S. residents other than parent banks.

e. Calculated from *Bank of Canada Review*, various issues.

world other than the "inside area" countries and Canada, but we have little information as to their amount. Such deposits may amount to a billion dollars in the Bahamas<sup>36</sup> and to half a billion dollars or more in Asian cities such as Singapore, Hong Kong, and Tokyo.<sup>37</sup> There are also Eurodollar holdings in banks in Beirut, which is relatively free of exchange controls. In most of the remainder of the world, however, foreign exchange controls prohibit individuals and nonbanking concerns from holding foreign currencies beyond the amounts needed for actual trading purposes, and most of these foreign currencies tend to be held directly in the countries whose currencies are involved. Domestic banks are usually not permitted to maintain dollar accounts for residents, and nonresidents are more likely to maintain their Eurodollar deposits with European banks.

A third category of Eurodollar deposits which should be included in our concept of foreign liquid dollar assets is that of *foreign official* Eurodollar holdings. Such holdings are usually included in official reserves along with their holdings of American liquid dollar assets, sterling assets, and liquid assets denominated in other convertible

36. Data on foreign nonbank deposits (in all currencies combined) in Bahama branches of U.S. banks are given in the *Federal Reserve Bulletin*, current issues.

37. The center of the Asian dollar market is Singapore, where banks are estimated to hold between \$300 and \$400 million in dollar deposits. See S. A. Pandit, "The Asian Dollar and Free Gold Markets in Singapore," *Finance and Development*, No. 2, 1971, pp. 32-36.

currencies.<sup>38</sup> Foreign central banks and other foreign official institutions tend to hold their Eurodollar or other Eurocurrency deposits with the commercial banks of other countries or with the BIS, which in turn may deposit these funds in European commercial banks. Since the data on dollar assets and liabilities of Swiss banks (as reported in the *BIS Annual Reports*) include those of the BIS, there is no direct way of knowing the volume of central bank dollar funds that are channeled into the Eurodollar market through the BIS. However, there is indirect evidence that the BIS increased its Eurocurrency deposits with commercial banks by about \$2 billion during 1970.<sup>39</sup> Since the BIS reduced its American liquid dollar holdings by approximately \$1 billion during 1970, these dollars may have constituted one source of the funds that went into the Eurocurrency market.<sup>40</sup> The *BIS Forty-First Annual Report* estimates that total official placements in the Eurocurrency market increased by about \$7 billion during 1970; the bulk of this increase was in Eurodollars.<sup>41</sup>

In its *1972 Annual Report* the IMF published estimates of aggregate Eurodollar holdings of foreign official institutions for the years 1964–71. The estimated official Eurodollar claims shown in Table 2.6 are based on the IMF information from 58 countries. Identified official Eurodollar claims rose from \$1.3 billion at the end of 1964 to \$10.1 billion at the end of 1971.<sup>42</sup> Gross liquid

38. The foreign exchange component of official international reserves is published by country in the monthly issues of IMF, *International Financial Statistics*, Washington, D.C. In most cases the official foreign exchange holdings include central bank holdings of Eurocurrencies, but such holdings are not separately identified.

39. This estimate is based partly on the fact that BIS time deposits with other banks and advances (mainly to commercial banks) rose by approximately \$2 billion during the fiscal year ended March 31, 1971. *Forty-First Annual Report*, 1971, p. 183.

40. BIS holdings of short-term assets in the United States may be estimated roughly from the table in the *Federal Reserve Bulletin* titled "Short-term Liabilities to Foreigners Reported by Banks in the United States, by Country" under the item "Other Western Europe." See *Federal Reserve Bulletin*, June 1971, p. A75.

41. *Forty-First Annual Report*, 1971, p. 166.

42. Unidentified official Eurocurrency holdings and residual sources of reserves totaled \$8.7 billion at the end of 1971, some of which undoubtedly represented official Eurodollar deposits. IMF, *1972 Annual Report*, Washington, D.C., 1972, p. 30.

TABLE 2.6

Liquid Dollar Positions of Foreign Official Institutions, 1964-71  
(end of period; billions of dollars)

	Estimated Eurodollar Claims	Claims on U.S. Residents	Liabilities to U.S. Residents	Net Position vis-à-vis U.S. Residents (2) - (3)	Gross Liquid Dollar Claims (1) + (2)	Net Combined Position (1) + (4)
	(1)	(2)	(3)	(4)	(5)	(6)
1964	1.3	15.8	0.7	15.1	17.1	16.4
1965	1.4	15.8	1.1	14.7	17.2	16.1
1966	2.0	14.9	1.6	13.3	16.9	15.3
1967	2.4	18.2	2.7	15.5	20.6	17.9
1968	3.6	17.3	3.8	13.5	20.9	17.1
1969	4.3	16.0	3.0	13.0	20.3	17.3
1970	9.2	23.8	0.7	23.1	33.0	32.3
1971	10.1	50.7	0.5	50.2	60.8	60.3

SOURCES: For Eurodollar claims, see IMF, *1972 Annual Report*, Washington, D.C., 1972, Table 10, p. 30. Data on liquid claims and liabilities vis-à-vis the United States from Table 2.1 of this study.

dollar claims of foreign official institutions increased from \$17.1 billion at the end of 1964 to \$60.8 billion at the end of 1971; the bulk of this increase took place during 1970 and 1971. So long as foreign commercial banks and private nonbanks do not increase their demand for American liquid dollar assets, dollars placed in the Eurodollar market by foreign official institutions quickly return to the central banks, with a consequent increase in the combined American dollar and Eurodollar holdings of foreign central banks. However, the process of redepositing dollars in the Eurodollar market by foreign official institutions and the utilization of the Eurodollar funds for loans throughout the world may have some effect on the distribution of American liquid dollar asset holdings among foreign countries. The nature of this redistribution of foreign official holdings of American liquid dollar assets is difficult to determine because of the large speculative movements that occurred during 1970 and 1971.

We have so far identified three categories of Eurodollar deposits

which we believe should be included in any measure of foreign liquid dollar assets, namely: (1) net foreign commercial bank Eurodollar positions with foreign branches of U.S. banks; (2) gross foreign nonofficial nonbank holdings of Eurodollars; and (3) gross foreign official holdings of Eurodollars.<sup>43</sup> There is a fourth category of Eurodollar deposits that should be considered as a part of foreign liquid dollar holdings, namely, Eurodollar deposits held by foreign commercial banks outside the Eurodollar banking system with foreign commercial banks within the system (other than the already covered foreign branches of U.S. banks). The analysis of this fourth category of liquid dollar holdings involves difficult conceptual problems and virtually insoluble data problems. One solution would be to regard all commercial banks in the world outside the United States as a part of the Eurodollar banking system and exclude from our concept of foreign liquid dollar assets all foreign interbank deposits with the exception of the net Eurodollar position of foreign commercial banks with foreign branches of U.S. banks. However, it would not be realistic to include in the system commercial banks that are outside the Eurodollar interbank redepositing system. Banks outside this system borrow Eurodollar funds either for their own account or on behalf of their customers in much the same way that a nonbank borrows. Yet any geographical delineation of the Eurodollar interbank system is likely to be just as arbitrary as the BIS definition which limits the interbank system to the commercial banks in the eight European reporting countries. Moreover, if we designate a geographical area as representing the Eurodollar banking system, say, Western Europe, the Bahamas, Canada, and Japan, we are unable to make a reasonably reliable estimate of the amount of Eurodollar deposits of foreign commercial banks outside the area so designated with commercial banks within that area. Thus, just as we must omit from our calculations those nonbank Eurodollar deposits with foreign commercial banks outside the European reporting area and Canada, so must we omit a substantial volume of Eurodollar deposits held by foreign commercial banks

43. Unlike U.S. official data on foreign official American dollar holdings, neither IMF nor BIS data on Eurodollar holdings of foreign official institutions include the Eurodollar holdings of the BIS (see p. 9, footnote 6).

outside the Eurodollar interbank system with commercial banks within the system (other than foreign branches of U.S. banks which have already been accounted for).<sup>44</sup>

#### NET EURODOLLAR POSITIONS

Table 2.7 shows the growth of Eurodollar borrowings of foreign nonbanks from "inside area" and Canadian banks from \$5.8 billion at the end of 1966 to \$24.8 billion at the end of 1971. By subtracting foreign nonbank Eurodollar deposits with "inside area" and Canadian banks we obtained the net Eurodollar position of foreign nonbanks. This position was in approximate balance in 1968 but rose to a positive balance of \$6.3 billion at the end of 1969. Between the end of 1969 and the end of 1971 foreign nonbank Eurodollar deposits declined while foreign nonbank Eurodollar borrowings more than doubled, so that by the end of 1971 foreign nonbanks had a negative net Eurodollar position of \$10.3 billion.

Table 2.8 presents estimates of the net Eurodollar positions of foreign commercial banks (excluding foreign branches of U.S. banks), with foreign branches of U.S. banks and with foreign nonbanks and their Eurodollar liabilities to foreign official agencies.<sup>45</sup>

44. We can suggest an order of magnitude for Eurodollar deposits of foreign commercial banks outside of Western Europe, Canada, and Japan with "inside area" banks. (Eurodollar deposits of foreign commercial banks outside Western Europe, Canada, and Japan are probably very largely with "inside area" banks.) The BIS has estimated the dollar liabilities of "inside area" banks to depositors outside of Western Europe, Canada, Japan, and the United States to be \$11.9 billion as of the end of 1970 (see Table 2.3), but there are no data on how these deposits are allocated among those held by official institutions, by commercial banks, or by nonbanks; nor do we know what proportion of these deposits is with U.S. bank branches located in the "inside area." We have reason to believe, however, that at least \$4 billion represents liabilities to official institutions. Our analysis of the volume of "outside area" nonbank Eurodollar deposits held with "inside area" banks in the estimates given in Table 2.5 suggests that about \$3 billion of the nonbank Eurodollar deposits with "inside area" banks is held by nonbanks in the areas outside of Western Europe, Canada, Japan, and the United States. This leaves about \$5 billion for Eurodollar deposits of foreign commercial banks located in the countries outside of Western Europe, Canada, Japan, and the United States which is held with "inside area" banks, of which perhaps 40 percent is held with U.S. foreign branches. Thus we arrive at an estimate of \$3 billion in Eurodollar deposits at the end of 1970 for our fourth category of foreign liquid dollar assets. However, this could vary by a billion dollars either way. No estimate for this category of Eurodollar deposits is given in our tables.

45. No data are available on foreign commercial bank loans to foreign official institutions, but they are not believed to be large.

TABLE 2.7

Estimates of Foreign Nonofficial Nonbank Eurodollar Liabilities to "Inside Area" and Canadian Banks, and of Net Eurodollar Position, 1966-71 (end of period; billions of dollars)

	1966	1967	1968	1969	1970	1971
1. Inside area bank loans to inside area nonbanks <sup>a</sup>	3.7	4.1	4.7	5.6	10.1	12.5
2. Inside area bank loans to all nonresident nonbanks <sup>b</sup>	2.1	3.4	5.2	6.1	11.9	14.4
3. Inside area bank loans to inside area nonresident nonbanks <sup>c</sup>	0.8	0.7	0.9	1.1	2.0	2.5
4. Inside area bank loans to U.S. resident nonbanks <sup>d</sup>	0.4	0.5	1.0	1.1	1.5	1.4
5. Total inside area bank loans to nonbanks, excl. U.S. residents (1. 1 + 1. 2) - (1. 3 + 1. 4)	4.6	6.3	8.0	9.5	18.5	23.0
6. Canadian bank U.S. dollar loans to nonbanks, excl. U.S. residents <sup>e</sup>	1.2	1.1	1.2	1.4	1.7	1.8
7. Total (1. 5 + 1. 6)	5.8	7.4	9.2	10.9	20.2	24.8
8. Net Eurodollar position of nonbanks <sup>f</sup>	1.2	0.9	0.1	6.3	-2.6	-10.3

SOURCES: BIS *Annual Reports*; *Federal Reserve Bulletin*; and *Bank of Canada Review*, various issues.

a. Data from Table 2.3, "inside area" nonbank uses.

b. Data for all years from BIS, *Forty-Second Annual Report*, 1972, p. 151.

c. For 1966 and 1967, estimates are taken from BIS, *Thirty-Eighth Annual Report*, June 1968, p. 154. Estimates for years 1968, 1969, 1970 and 1971 are based on the assumption that 20 percent of "inside area" bank loans to "inside area" nonbanks are to "inside area" nonresident nonbanks. This was roughly the proportion for 1966 and 1967 combined.

d. Very rough estimates were determined by using the lesser of (a) short-term liabilities to the eight "inside area" countries reported by U.S. nonbanking concerns and (b) claims of foreign branches of U.S. banks (excluding Bahama branches) on U.S. residents other than parents. While both of these series include items other than "inside area" bank loans to U.S. nonbank residents and exclude some "inside area" bank loans to U.S. nonbank residents, the two series tend to move together at least during the 1968-71 period. In any case, the estimates are probably understated.

e. Calculated from *Bank of Canada Review*, various issues.

f. Table 2.5, line 7, less Table 2.7, line 7.

These estimates are only rough approximations owing to the limitations of the data. The net dollar positions with foreign nonbanks apply only to "inside area" and Canadian banks, excluding the (roughly estimated) positions of foreign branches of U.S. banks. The net dollar position of foreign commercial banks with foreign

TABLE 2.8

Net Eurodollar Positions of Foreign Commercial Banks,  
Excluding Foreign Branches of U.S. Banks, 1966-71\*  
(end of period; billions of dollars)

	1966	1967	1968	1969	1970	1971
1. Net position with foreign branches of U.S. banks <sup>a</sup>	2.2	2.6	5.3	9.7	6.6	4.0
2. Net dollar position of "inside area" and Canadian banks vis-à-vis all foreign nonbanks, excl. position of foreign branches of U.S. banks <sup>b</sup>	-1.0	-0.8	-0.7	-4.6	0.7	5.8
3. Eurodollar liabilities to foreign official agencies, excl. liabilities of foreign branches of U.S. banks <sup>c</sup>	-0.9	-1.3	-2.3	-2.7	-5.5	-5.1
Memorandum items:						
1. Net dollar position of foreign branches of U.S. banks with foreign nonbanks <sup>d</sup>	-0.2	-0.1	0.6	-1.7	1.9	4.5
2. Liabilities of foreign branches of U.S. banks to foreign official agencies <sup>d</sup>	1.1	1.1	1.3	1.6	3.7	5.0

\* Data are not available for determining overall net Eurodollar position.

a. See Table 2.4, net position of all foreign commercial banks.

b. Table 2.7, line 8, with sign reversed, adjusted for the net position of foreign branches of U.S. banks vis-à-vis foreign nonbanks. (The data assume the net position of all foreign branches of U.S. banks vis-à-vis foreign nonbanks is equal to the net position of foreign branches in the "inside area" alone.)

c. From Table 2.6, adjusted for liabilities of foreign branches of U.S. banks to foreign official agencies.

d. Data for 1966-68 from *Treasury Bulletin*, November 1970, pp. 124-137; data for 1969, 1970, and 1971 from *Federal Reserve Bulletin*, February 1972 and July 1972. It should be noted that the two series are not fully comparable.

branches of U.S. banks declined sharply during 1970 and 1971 while their liabilities to foreign official institutions rose. On the other hand, the net Eurodollar positions of "inside area" and Canadian banks (excluding the positions of foreign branches of U.S. banks) vis-à-vis foreign nonbanks shifted from negative \$4.6 billion at the end of 1969 to positive \$5.8 billion at the end of 1971. This shift came about mainly as a consequence of the sharp rise in loans to foreign nonbanks relative to foreign nonbank Eurodollar deposits. The increase in loans to foreign nonbanks was heavily concentrated in loans to residents of the countries in which the

“inside area” banks are located (Table 2.7, line 1 minus line 3). Since the increase in resident deposits of “inside area” banks was much smaller (Table 2.5, line 1 minus line 3), the “inside area” banks developed a substantial surplus (\$4.6 billion) with their own resident nonbanks.

The net Eurodollar positions of *foreign commercial banks* (excluding foreign branches of U.S. banks) with the three categories given in Table 2.8 are not fully comparable since the net positions with foreign branches of U.S. banks and with foreign official agencies include all foreign commercial banks, while the net position with foreign nonbanks includes only “inside area” and Canadian banks. Moreover, we have no way of estimating the net position of “inside area” banks (excluding foreign branches of U.S. banks) with “outside area” commercial banks not regarded as members of the Eurodollar interbank system.<sup>46</sup> Therefore, lines 1, 2, and 3 in Table 2.8 cannot properly be added to obtain a net overall Eurodollar position of foreign commercial banks.

*Foreign Holdings of American Dollars  
and Eurodollars Combined*

In Table 2.9 we have combined, by three categories of ownership, foreign liquid dollar assets represented by Eurodollars with the estimates of foreign holdings of American liquid dollar assets detailed in Tables 2.1 and 2.2. During the period from the end of 1966 to the end of 1971, total foreign liquid dollar assets, as we have defined them, rose by \$57.1 billion. Of this increase, \$17.4 billion was accounted for by Eurodollar deposits. Of the latter, \$8.1 billion represented the increase in Eurodollar deposits of foreign official institutions; \$1.8 billion the increase in Eurodollar claims of foreign commercial banks on foreign branches of U.S. banks; and \$7.5 billion the increase in Eurodollar deposits represented by non-official nonbanks. (As has been noted, however, our estimates of Eurodollar deposits of nonbanks are limited to those with “inside area” and Canadian banks.)

46. Interbank deposits among members of the Eurodollar redepositing system would be excluded from our concept of the volume of foreign dollar liquidity just as interbank deposits among “inside area” banks are excluded in the BIS concept of the “net size of the market.”

TABLE 2.9  
 Estimates of Foreign Liquid Dollar Assets by Category  
 of Asset Holder and by Type of Assets, 1966-71  
 (end of period; billions of dollars)

	1966	1967	1968	1969	1970	1971
Foreign Official Institutions						
Claims on U.S. residents	14.9	18.2	17.3	16.0	23.8	50.7
Eurodollar claims	2.0	2.4	3.6	4.3	9.2	10.1
Subtotal	<u>16.9</u>	<u>20.6</u>	<u>20.9</u>	<u>20.3</u>	<u>33.0</u>	<u>60.8</u>
Foreign Commercial Banks						
U.S. liquid dollar assets, excl. foreign branches of U.S. banks <sup>a</sup>	6.0	6.9	9.0	11.2	11.3	10.0
Net position with foreign branches of U.S. banks	2.2	2.6	5.3	9.7	6.6	4.0
Subtotal	<u>8.2</u>	<u>9.5</u>	<u>14.3</u>	<u>20.9</u>	<u>17.9</u>	<u>14.0</u>
Foreign Nonbanks						
Claims on U.S. residents	4.3	4.7	5.0	4.6	4.7	4.2
Eurodollar deposits with "inside area" and Canadian banks <sup>b</sup>	7.0	8.3	9.3	17.2	17.6	14.5
Subtotal	<u>11.3</u>	<u>13.0</u>	<u>14.3</u>	<u>21.8</u>	<u>22.3</u>	<u>18.7</u>
<i>Total</i>	<u>36.4</u>	<u>43.1</u>	<u>49.5</u>	<u>63.0</u>	<u>73.2</u>	<u>93.5</u>
U.S. liquid dollars	<u>25.2</u>	<u>29.8</u>	<u>31.3</u>	<u>31.8</u>	<u>39.8</u>	<u>64.9</u>
Eurodollars	11.2	13.3	18.2	31.2	33.4	28.6

SOURCES: Tables 2.1, 2.2, 2.4, 2.5, and 2.6. *Federal Reserve Bulletin*, February 1972, pp. 110-111, and July 1972, p. A88, and *Treasury Bulletin*, November 1970, pp. 127ff., for assets and liabilities of foreign branches of U.S. banks.

a. Table 2.2, line 3.

b. Includes Eurodollar deposits with foreign branches of U.S. banks.

During the period under consideration, the largest increase in foreign liquid dollar assets (\$43.9 billion), including both American dollars and Eurodollars, accrued to foreign official institutions, but over 90 percent of this increase took place during 1970 and 1971. Liquid dollar assets of foreign nonbanks rose by \$7.4 billion from the end of 1966 to the end of 1971; all of this increase was accounted for by Eurodollar deposits. Foreign commercial banks increased their total liquid dollar holdings over the period by \$5.8 billion, \$4.0 billion of which represented an increase in American liquid dollar assets. Of the latter amount, \$1.0 billion was accounted for by the increase in liabilities of U.S. agencies and

branches of foreign banking corporations to their head offices and branches abroad (see Table 2.2).

Combined foreign holdings of liquid dollar assets show a fairly steady increase over the 1966–71 period, but the components as between Eurodollars and American liquid dollar assets and as among the three categories of foreign liquid dollar asset holders have behaved erratically over the period (Table 2.9). Thus, during 1969, foreign holdings of American liquid dollar assets remained almost stationary, but foreign holdings of Eurodollars nearly doubled. In 1970, Eurodollar holdings increased only modestly with all of the increase accounted for by the increase in foreign central bank holdings. During this same year there was a sharp increase in American liquid dollar holdings of foreign official institutions. Holdings of foreign commercial banks and foreign nonbanks were virtually unchanged. In 1971, foreign holdings of American liquid dollar assets soared as a consequence of the increase in the holdings of foreign official institutions, but foreign holdings of Eurodollars declined. The reader may be puzzled by the fact that foreign holdings of Eurodollars showed a decline between the end of 1969 and the end of 1971 while the BIS estimate of the “net size of the market” rose during that period. Prior to 1970, the two estimates, while different in absolute amounts, tended to follow a similar trend. The reasons for the divergence in the two series are to be found in the differences in both concept and statistical measurement. These differences are explained in Appendix B at the end of this chapter.

We lack sufficient data for determining the net position of all foreign liquid dollar holders combined, but the analytical significance of such an estimate is doubtful. However, in the light of the speculative movements against the dollar in 1970 and 1971, it is of some interest to note the shift of foreign nonbanks from a large net positive position in American dollars and Eurodollars combined (\$10.6 billion) at the end of 1969 to a substantial net negative position (\$6.5 billion) at the end of 1971 (see Table 2.1, line IIIC, and Table 2.7, line 8). A substantial portion of the increased Eurodollar borrowings by foreign nonbanks during 1971 was reportedly undertaken for the purpose of acquiring strong nondollar currencies for speculative purposes.

As has been noted, our data are inadequate to determine the net Eurodollar position of foreign commercial banks according to the concept we have used. However, it seems unlikely that most foreign commercial banks had large uncovered positive dollar positions in 1970 and 1971. Of the three categories of foreign liquid dollar asset holders, only foreign official institutions had large net (uncovered) positive positions, and these institutions absorbed the vast bulk of the loss in terms of foreign currencies arising from the effective depreciation of the dollar in 1971.

*Appendix A: The Conceptual Basis  
for the Classification of Liquid Claims*

FOREIGN LIQUID CLAIMS ON U.S. RESIDENTS

In the accompanying table, foreign liquid claims on U.S. residents are identical with the items included in foreign liquid claims by the Department of Commerce<sup>47</sup> except for two items, namely, nonmarketable, nonconvertible U.S. Treasury bonds and notes, and long-term liabilities to foreigners reported by U.S. banks. Both of these liability items to foreign official agencies, while referred to as nonliquid liabilities, are included in the calculation of the U.S. official reserve transactions balance and hence are below-the-line items in the U.S. net liquidity balance. However, the same liability items to foreign commercial banks and nonbanks are regarded as nonliquid in the Department of Commerce balance of payments format. This treatment appears to us to be inconsistent. Therefore, we have regarded both of these items as foreign liquid claims, whether the liabilities are to foreign official agencies, or to foreign commercial banks, or to nonbanking entities. Most foreigners regard long-term time deposits and certificates of deposit of U.S. banks as liquid. In any case, they are readily convertible into cash. Nonmarketable, nonconvertible U.S. Treasury bonds and notes are held entirely by foreign official institutions except for \$153 million (as of December 31, 1972) held by German commercial banks.

47. For Department of Commerce definitions see its "Explanatory Notes for Tables 2 and 3," *Survey of Current Business*, June 1951, pp. 51ff.

## U.S. LIQUID CLAIMS ON FOREIGNERS

There are just two significant differences from the Department of Commerce concept of liquid claims in our classification of U.S. liquid claims on foreigners. First, we have included U.S. short-term bank loans to foreign official agencies and foreign commercial banks. Second, we have included U.S. bank-reported (short-term) acceptances made for the account of foreigners. It is our view that all U.S. short-term claims on foreign banks and foreign official agencies should be regarded as liquid claims. There are undoubtedly a number of other short-term claims on foreign commercial banks that have not been reflected in our tables, but there is no way of separating them from claims on nonbanks which we have regarded as nonliquid. For example, a substantial portion of U.S. bank-reported "collections outstanding" represents claims on foreign banks. In addition, the volume of U.S. nonbank claims on foreign commercial banks is grossly understated in U.S. official data.

## CLASSIFICATION

I. Foreign Claims on U.S. Residents<sup>48</sup>

## A. Foreign central banks and other official institutions

1. Demand deposits
2. Time deposits with maturity of one year or less
3. U.S. government obligations
  - a. U.S. Treasury bills and certificates
  - b. Marketable U.S. government bonds and notes
  - c. Nonmarketable, convertible (into Treasury bills) U.S. Treasury bonds and notes
  - d. Nonmarketable, nonconvertible U.S. Treasury bonds and notes<sup>49</sup>

48. "Foreigners" exclude international and regional organizations of which the United States is a member. Liquid claims may be denominated in either dollars or foreign currencies.

49. With the exception of small amounts held by German commercial banks, all nonconvertible U.S. Treasury bonds and notes are held by foreign official institutions.

These claims, and those listed in lines IA5, IIA2, IIB3, and IIB4, below, are defined as nonliquid in *Survey of Current Business* balance-of-payments tables.

4. Other short-term liabilities, including bankers' acceptances, commercial paper, and negotiable certificates of deposit
  5. Time deposits and certificates of deposit with a maturity of one year or more
  - B. Foreign commercial banks, including foreign branches of U.S. banks (same as in A above)
  - C. Other foreigners (same as in A above except that nonbank concerns and individuals do not own nonmarketable U.S. Treasury bonds and notes)
- II. U.S. Liquid Claims on Foreigners
- A. Claims on foreign central banks and other official institutions
    1. U.S. official holdings of foreign convertible currencies
    2. Short-term loans to foreign official institutions reported by U.S. banks
    3. Short-term foreign government securities<sup>50</sup>
  - B. U.S. claims on foreign commercial banks including foreign branches of U.S. banks
    1. Short-term deposits with foreign banks reported by U.S. banks
    2. Short-term deposits with foreign banks reported by U.S. nonbanking concerns
    3. Short-term loans to foreign banks reported by U.S. banks
    4. Acceptances (short-term) made for account of foreigners reported by U.S. banks
    5. Other short-term claims on foreign banks reported by U.S. banks (and included in Department of Commerce definition of U.S. liquid claims on foreigners)
  - C. U.S. claims on other foreigners
    1. Short-term commercial and finance paper representing obligations of foreign nonbanks reported by U.S. banks<sup>51</sup>

50. Available data do not permit disaggregation of U.S. holdings of foreign short-term securities as between foreign government securities and others. Hence, in our tables all U.S. resident holdings of foreign short-term securities are listed as obligations of foreign nonbanks.

51. See note 50.

2. Negotiable and other readily transferrable foreign obligations payable on demand or having a contractual maturity of not more than one year from the date on which the obligation was incurred by the foreigner

*Appendix B: Relation Between Eurodollar Balances in Table 2.9 and the BIS "Net Size of the Market"*

THE reader may be puzzled by the fact that while the BIS "net size of the market" (Table 2.3) increased by \$39.0 billion (or by \$34.4 billion if U.S. sources are excluded) between the end of 1966 and the end of 1971, our own estimates show that foreign Eurodollar deposits rose by only \$17.4 billion over the same period (Table 2.9). This difference has arisen since 1969. Until then the two series did not differ substantially in absolute value, as shown by the following table (in billions of dollars):

	1966	1967	1968	1969	1970	1971
BIS "net size of the market" <sup>a)</sup> adjusted to exclude U.S. sources	13.4	15.8	21.8	33.7	41.8	47.8
Foreign Eurodollar balances in Table 2.9	11.2	13.3	18.2	31.2	33.4	28.6

During 1970 and 1971, however, the BIS estimate rose by \$14.1 billion, while foreign Eurodollar balances under our concept declined by \$2.6 billion. The reasons for this contrasting behavior are to be sought in differences both in the conceptual framework behind the two sets of estimates and in the data coverage. These differences may be further explored in the light of the more detailed comparisons given in Table 2.10.

As for the conceptual aspects, it will be recalled that the BIS "sources" measure all Eurodollar deposits with "inside area" banks less interbank deposits among "inside area" banks, plus those sources of dollar funds generated by "inside area" banks themselves, i.e., not originating from deposits. Our own concept regards the Eurodollar system as encompassing the entire world, i.e., all of the commercial banks that comprise the interbank redepositing sys-

TABLE 2.10

Foreign Holdings of Eurodollars on Alternative Definitions  
of Member Banks Comprising the System  
(end of year; billions of dollars)

Holder of Eurodollar Deposits and Where Held	"Inside Area" Basis as Defined by BIS <sup>a</sup>			Worldwide Basis Attempted in Present Study		
	1966	1969	1971	1966	1969	1971
I. Claims of foreign nonbanks						
A. On "inside area" banks (incl. foreign branches of U.S. banks)						
1. By residents of the area	2.8	9.8	10.8	2.8	9.8	10.8
2. By nonresidents	2.2	2.9	.6	2.2	2.9	.6
B. On Canadian banks	—	—	—	2.0	4.5	3.1
C. On other "outside area" Euro- dollar banks	—	—	—	n.a.	n.a.	n.a.
Subtotal	<u>5.0</u>	<u>12.7</u>	<u>11.4</u>	<u>7.0</u>	<u>17.2</u>	<u>14.5</u>
II. Claims of foreign commercial banks, both inside and outside system, on foreign branches of U.S. banks (net)	—	—	—	2.2	9.7	4.0
III. Other claims of foreign commer- cial banks outside system						
A. On "inside area" banks	—	—	—	n.a.	n.a.	n.a.
B. On Canadian banks	—	—	—	n.a.	n.a.	n.a.
C. On other "outside area" Euro- dollar banks	2.8 <sup>b</sup>	12.5 <sup>b</sup>	23.8 <sup>b</sup>	n.a.	n.a.	n.a.
IV. Claims of "outside area" central banks	—	—	—	2.0 <sup>c</sup>	4.3 <sup>c</sup>	10.1 <sup>c</sup>
V. Claims of "inside area" central banks and of BIS	5.6	8.5	12.6	—	—	—
VI. Eurodollar banks' purchases of dollars	—	—	—	—	—	—
<i>Total</i>	<u>13.4</u>	<u>33.7</u>	<u>47.8</u>	<u>11.2</u>	<u>31.2</u>	<u>28.6</u>

SOURCES: Line IA1 from Table 2.5, line 1. Line IA2 from Table 2.5, line 5 minus line 1. Line IB from Table 2.5, line 6. Line II from Table 2.8, line 1. Lines III and IV combined from Table 2.3, sum of entries for Canada, Other Western Europe, Japan, Eastern Europe, and Other. Lines IV and V combined from Table 2.6, column 1. Lines V and VI combined from Table 2.3, entry for "banks."

a. Includes Belgium, France, Germany, Italy, the Netherlands, Switzerland, Sweden, and the United Kingdom.

b. Includes only IIIA and IV.

c. Excludes claims of BIS.

tem.<sup>52</sup> In our approach, all interbank deposits in the worldwide Eurodollar system are excluded in the calculation of Eurodollar holdings except for net deposits of Eurodollar banks with foreign branches of U.S. banks. These net dollar liabilities are called Eurodollars, but they are also net dollar liabilities of the U.S. banking system. Net liabilities of foreign branches of U.S. banks to foreign commercial banks include net liabilities to foreign commercial banks outside the Eurodollar banking system as well as those inside. According to our concept, the dollar deposits of foreign commercial banks outside the system with all Eurodollar banks inside the system should also be included in the measure of Eurodollar deposits. However, we have no data on the Eurodollar deposits of foreign commercial banks outside the Eurodollar system with foreign commercial banks inside the system, so we have had to omit such deposits from our series.

Using both BIS and Canadian data, we have estimated Eurodollar deposits of foreign nonbanks with "inside area" and Canadian banks. Admittedly, this estimate omits foreign nonbank deposits in other areas, e.g., Hong Kong, Singapore, the Bahamas, and Beirut, but the volume is probably under \$2 billion. Most countries outside of Western Europe do not permit their domestic banks to accept dollar deposits from residents and most nonresident Eurodollar deposits are with "inside area" banks. Our data on Eurodollar deposits of central banks are from IMF sources; there are no separate BIS data on such deposits.<sup>53</sup>

We can now provide at least a partial indication of why the two series diverge so sharply after 1969. Unfortunately, for reasons given in explaining the derivation of the tables in Chapter 2, the component series cannot be further disaggregated, at least in any systematic fashion, so as to permit a closer comparison.

52. A term broader in its geographic implications than *Eurodollars* would be desirable when applied to a worldwide system. Fritz Machlup has employed the term *Xeno-currencies* for bank deposits denominated in currencies other than that of the country in which the bank is located. See Fritz Machlup, "The Eurodollar System and Its Control," *International Monetary Problems*, Washington, D.C.: American Enterprise Institute for Public Policy Research, 1972, Part I.

53. In the BIS data, Eurodollar deposits of "inside area" central banks and the BIS are included in "bank" sources, while "outside area" central bank deposits are included in "outside area" sources. The IMF data do not include Eurodollar deposits of the BIS. (See notes to Table 2.3)

Starting at the top of Table 2.10 with item IB, the Canadian bank figures on nonbank deposits, included in keeping with our worldwide approach, account for a decline of \$1.4 billion in our series in 1970 and 1971. As already noted, we should have liked to include item IC, but we lack the necessary data, nonbank Eurodollar deposits in still other "outside area" banks.

The next major item (II) included in our estimates but not in those of the BIS—net claims of foreign commercial banks on foreign branches of U.S. banks—shows a decline of \$5.7 billion in 1971 and 1972. The logic of including these claims in statistics on foreign holdings of Eurodollars (though not necessarily in the "net size of the market") has already been given in Chapter 2. It has also been noted that this decline was a direct consequence of the reduction in U.S. bank borrowings from their foreign branches.

Item III of Table 2.10 shows an omission that may be of some consequence in our estimates, reflecting our inability to derive from the available sources figures on Eurodollar claims of "outside area" commercial banks on banks within the Eurodollar system as we conceive it. There is no basis for judging how much these claims, if they could be included, would increase our estimates or affect their movement in recent years. We may only note that the omission is of a dual nature: (1) we have no data on the claims of "outside area" commercial banks on Eurodollar banks brought within the system under our more global concept; and (2) we cannot employ the aggregative data given by the BIS on the basis of its reporting banks, since (apart from other difficulties noted in the next paragraph) such aggregates would include Eurodollar claims of banks that we think should now be regarded as part of the system.

The converse of the latter point is that the BIS reporting system, if it includes claims by banks that could themselves now be considered as insiders, risks overstating both the size and the rate of growth of the market. An appraisal of this possibility is, however, seriously handicapped because the BIS reports do not distinguish between claims by outside area commercial banks and outside area central banks. Consequently, the two are lumped together in Table 2.10, showing an increase of \$11.3 billion in 1970 and 1971. From the data published by the IMF it appears that of the total increase in Eurodollar deposits by foreign central banks in 1970 and 1971

(also included in our estimates) about \$5 billion came from "outside area" central banks.<sup>54</sup> That would leave roughly \$6 billion coming from "outside area" commercial banks out of the BIS estimates in Table 2.10.

The BIS does not give separate figures for Eurodollar deposits of "inside area" central banks. It gives only a series which includes "inside area" central bank and BIS Eurodollar deposits with "inside area" banks combined with the Eurodollar banks' purchases of dollars (including swap deals with central banks). The combined series—identified by the BIS simply as "bank" sources (Table 2.3)—shows an increase of \$4.1 billion in 1970 and 1971. We may estimate, however, that of this amount, \$3.5 billion consisted of dollar funds generated by the banks themselves—and not included in our estimates—as distinguished from "inside area" central bank deposits.<sup>55</sup>

To summarize, the major sources of difference in the behavior of the BIS estimates of the "net size of the market" and our own estimates of foreign Eurodollar balances between the end of 1969 and the end of 1971 are (a) the differential treatment of foreign commercial bank deposits; (b) the inclusion in the BIS concept of dollar funds obtained from sources other than Eurodollar deposits; and (c) the inclusion in our estimates of foreign nonbank Eurodollar deposits in Canadian banks.

54. IMF, *Annual Report* for 1972, Table 10, p. 30. Central banks of primary producing countries accounted for an increase of \$3.7 billion in Eurodollar deposits over the two-year period, and those of industrial countries other than the Group of Ten for an increase of \$0.4 billion. In addition, the Bank of Japan may have increased its Eurodollar deposits by some \$0.5 billion on the assumption that it accounted for most if not all of the increase in Eurodollar deposits from Japanese sources shown by Table 2.3 between the end of 1969 and the end of 1971.

55. According to the IMF, *op. cit.*, p. 30, Eurodollar holdings of central banks of the Group of Ten countries rose by \$1.1 billion over the two-year period. We may assume, as noted above, that some \$0.5 billion of this increase came from the Bank of Japan. On this basis, "inside area" central banks accounted for only \$0.6 billion of the \$4.1 billion from "bank" sources. Conceivably a portion of the remaining \$3.5 billion represented an increase in BIS Eurodollar deposits with "inside area" Eurobanks, but these deposits are also not included in our own estimates of central bank deposits derived from IMF sources.