

A Study of Large—Dollar Payment Flows Through CHIPS and Fedwire



HG1710
S86
1987

December 1987

December, 1987

A STUDY OF LARGE-DOLLAR PAYMENT FLOWS
THROUGH CHIPS AND FEDWIRE

The nation's two large-dollar electronic payments systems--the New York Clearing House Interbank Payments System (CHIPS) and the Federal Reserve wire transfer network (Fedwire)--together process electronic payments of funds in New York City in amounts that now approach \$1 trillion per day. Yet, despite the huge sums of money involved, very little quantitative information has been available on the nature and composition of the payments going through these electronic networks. The purpose of this study is to address that informational deficiency through an analysis of a sample survey of one day's payments traffic through the two networks.

This study is the product of a joint effort between the Federal Reserve Bank of New York, nine large New York Clearing House banks, and four foreign banks with New York City offices that are active participants in CHIPS. The nine Clearing House banks, which participated in both the CHIPS and the Fedwire survey, were The Bank of New York; Bankers Trust Company; The Chase Manhattan Bank, N.A.; Chemical Bank; Citibank, N.A.; Irving Trust Company; Manufacturers Hanover Trust Company; Marine Midland Bank, N.A.; and the Morgan Guaranty Trust Company. The four foreign banks, which were asked to participate in the CHIPS survey only, were The Bank of Tokyo; Barclays Bank PLC; Credit Lyonnais and Dresdner Bank. The substantial

**Federal Reserve Bank
of San Francisco**

MAR 23 1989

LIBRARY

the nature and purpose of the transactions was done entirely by these 13 commercial banking organizations. The design of the sampling procedure and the analysis that follows were performed by the Federal Reserve Bank of New York.

The samples of payments that were given to the 13 participating banks to research were, of course, limited to payments processed through those organizations. For that reason, this is entirely a study of payments that flow through New York City, though of course such payments can and do have origins and destinations that are nationwide and worldwide. In any event, the prime purpose of the survey was to develop a better understanding of the linkages between the funds transfer networks and the New York and international financial markets, and the restricting of the survey to banks located in New York City was consistent with that purpose.

Approach, Structure and Quality of the Survey

Survey Approach

The approach taken in the survey was derived from a small pilot test undertaken earlier with the cooperation of Manufacturers Hanover Trust Company and Morgan Guaranty Trust Company. As a result of that test, the survey was restricted to payments messages sent by the participating banks and to payments in the amount of \$1 million or more. The pilot test had indicated that there were no important differences between the nature and purpose of payments sent and received, and that little additional information could be gained by surveying from both perspectives. Also, limiting the

survey to messages sent by the participants made the task of researching the underlying business transactions much simpler, since survey participants needed in most cases only to contact their own customers for necessary third-party information. The size limitation of \$1 million or more was imposed because few transactions of smaller size were found to be importantly related to the functioning of the national and international financial markets--the principal focus of the study. Moreover, while transactions of less than \$1 million in size are fairly numerous on both CHIPS and New York Fedwire, they account for only a very minor percentage of the total value of transactions on either wire, and the extra effort of researching a representative sample of such transactions would not have produced commensurate informational benefits.

The pilot test also served to refine the questionnaires that were used to develop comprehensive information on wire transfers payments. The questionnaires were limited to six "Schedules" covering the following broad categories of transactions:

- A. Dollar Transfer Related to Securities
Purchase/Redemption/Financing
- B. Bank Loan Transactions
- C. Federal Funds Transactions
- D. Commercial and Miscellaneous Transactions
- E. Settlement Transactions
- F. Dollar Transfers Related to Foreign Exchange/Eurodollar Placement.

Participants in the survey were asked to identify each transaction in the sample by one of these six broad categories and then to supply specific details about the nature and purpose of the transaction, contacting their customer as necessary to obtain the information. Copies of the six survey Schedules are attached as an Appendix.

Structure of the Sample

The survey samples were structured in such a way as to provide a reasonably representative sample of all transactions of \$1 million or more in size, while assigning progressively greater importance to the larger size transactions. Thus, transactions ranging in size from \$1 million to \$5 million were sampled in relatively small percentages, those ranging from \$5 million to \$30 million were sampled at higher percentages, and transactions of \$30 million or more were sampled 100 percent. Because the size distribution of payments on Fedwire and CHIPS differ rather substantially, some variation between the two in the sampling percentages below \$30 million was necessary in order to keep the two samples at manageable and comparable size. Specifically, the two samples were drawn according to the following percentages by transactions size.

Table 1

Sampling Percentages by Payment Size Classification

	<u>\$1 - 5 Million</u>	<u>\$5 - 30 Million</u>	<u>\$30 Million & over</u>
CHIPS	7 1/2%	20%	100%
Fedwire	15%	40%	100%

The samples were drawn from CHIPS and Fedwire payments traffic occurring on Wednesday, June 4, 1986, which turned out to be an essentially "normal" day on both wire transfer systems. Total CHIPS transactions that day came to 119,279, with an aggregate value of \$432,446 million. Second District Fedwire payment originations numbered 55,636, with a total dollar value of \$265,163 million. CHIPS closed the day on schedule at 4:30 p.m., while all three Fedwire closings were each delayed 30 minutes, due largely to a late (5:15 p.m) Fedwire securities close. Thus, Fedwire inter-district third-party close occurred at 5:30 p.m., intra-district third-party close was at 6:30 p.m., and final Fedwire close took place at 7:00 p.m.

On the survey day, the 13 banks participating in the CHIPS survey accounted for \$204.9 billion of CHIPS payments of \$1 million or more, or 48 percent of all the \$426.5 billion total of all CHIPS payments of that size made that day. The nine banks participating in the Fedwire survey made \$197,043 million of Fedwire payments of \$1 million or more, or 76 percent of the \$259,919 million total of all payments of that size outgoing through New York Fedwire on the survey date.

The totals of all Fedwire payments made by the nine banks participating in the Fedwire survey (the "population" sampled), broken down by numbers and dollar amounts within each of the sample payments size categories, were as follows:

Table 2

Fedwire Payments Sampled By Payments Size Classification

	<u>\$1-5 Million</u>	<u>\$5-30 Million</u>	<u>\$30 Million & over</u>	<u>Total</u>
Numbers	5,350	4,958	1,528	11,836
Amounts (\$ Millions)	\$12,662	\$61,652	\$122,729	\$197,043

And, the corresponding CHIPS payments totals on the survey date for the 13 participants in the CHIPS survey were:

Table 3

CHIPS Payments Sampled By Payments Size Classification

	<u>\$1-5 Million</u>	<u>\$5-30 Million</u>	<u>\$30 Million & over</u>	<u>Total</u>
Numbers	16,725	10,642	1,127	28,494
Amounts (\$ Millions)	\$35,772	\$97,232	\$71,852	\$204,857

Applying the sampling survey percentages shown in Table 1 to each survey participant's wire transfer message traffic yielded the following sample transactions totals and distribution across the three payment size classifications.

Table 4

Sample Totals and Distribution
By Payment Size Classification

	<u>\$1-5 Million</u>	<u>\$5-30 Million</u>	<u>\$30 Million & Over</u>	<u>Total</u>
CHIPS	1,286	2,131	1,127	4,544
Fedwire	795	1,972	1,528	4,176

The CHIPS total sample of 4,544 messages was larger than that of Fedwire. However, the CHIPS sample included 516 messages drawn from the traffic of the four foreign banks participating only in the CHIPS survey. Thus, the CHIPS sample of transactions for the nine participating Clearing House Banks was slightly smaller in message size than the Fedwire sample, which was limited to the Clearing House bank participants only.

The value of payments encompassed by each of the samples was quite large in the aggregate, amounting to \$94,372 million in the case of the CHIPS sample and \$149,308 million for the Fedwire sample. The following table shows the distribution across each of the three sampling brackets of these sample total dollar amounts.

Table 5

Sample Payment Amounts in \$ Millions
By Payment Size Classification

	<u>\$1-5 Million</u>	<u>\$5-30 Million</u>	<u>\$30 Million & Over</u>	<u>Total</u>
CHIPS	\$2,753	\$19,512	\$ 72,107	\$ 94,372
Fedwire	\$1,900	\$24,680	\$122,729	\$149,308

Quantity, Quality and Generality of the Survey Results

The overall response rate to the survey was 61.2 percent for the CHIPS sample and 72.6 percent for the Fedwire sample. The numbers of responses and percentage of response rates within each sampling bracket were as follows:

Table 6
Survey Response Rates by Payment Size Classification

	<u>\$1-5 Million</u>		<u>\$5-30 Million</u>		<u>\$30 Million & Over</u>		<u>Total</u>	
	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>
CHIPS	796	61.9%	1,320	61.9%	663	58.8%	2,779	61.2%
Fedwire	533	67.0%	1,341	72.4%	1,167	75.9%	3,041	72.6%

The somewhat lower response rates for the CHIPS survey was expected due to the greater difficulty of obtaining information on CHIPS customer payments. Customers originating a CHIPS payment are predominantly foreign-based and more hesitant about supplying specific payment information. Also, of course, a sizeable number of CHIPS payments originate in countries where disclosure is restricted by law or regulation. In this regard, of the nine Clearing House banks that participated in both the CHIPS and Fedwire surveys, seven showed lower response rates on their CHIPS samples than their Fedwire samples, and the other two had only slightly higher CHIPS response rates. Nonetheless, the response rates on both samples were very high by any standard.

The total dollar value of transactions captured by the survey results amounted to \$55,652 million in the case of the CHIPS survey, and to \$111,708 million for the Fedwire survey. These totals were distributed among the three sample payment size brackets as follows:

Table 7

Survey Payment Amounts in \$ Millions By Payment Size Bracket

	<u>\$1-5 Million</u>	<u>\$5-30 Million</u>	<u>\$30 Million & Over</u>	<u>Total</u>
CHIPS	\$1,675	\$11,881	\$42,096	\$ 55,652
Fedwire	\$1,278	\$17,117	\$93,314	\$111,709

The large disparity between the total payment amounts captured by the two surveys partly reflects the fact that the CHIPS sample was of smaller size in dollar terms than the Fedwire survey to begin with (see Table 5). However, the lower CHIPS survey response rates, particularly in the \$30 million and over payment size category (58.8 percent versus 75.9 percent for Fedwire), were also a contributing factor.

Both the CHIPS and the Fedwire survey data are highly representative of the actual size distribution of transactions amounts included within their respective samples. Applying the survey data to predict the size distribution of transactions within the samples yields estimates that in no case differ by as much as two

percent from the actual dollar amounts contained within any of the three transactions size brackets of either sample. Moreover, a comparison of the response data against the samples using even finer breakdowns of transactions size show a similar degree of correspondence. This suggests that there is no significant bias in the survey results with respect to the size of transactions reported on, and, by implication, probably no significant bias as well in the broad types of transactions captured by the responses.

With respect to the level of transactional detail supplied by the survey participants, that also appears to have been quite good. Tables that are presented later show composite summaries of each of the survey reporting schedules received back from both the CHIPS survey and the Fedwire survey, and include lines labeled "unspecified" which quantify the informational elements that were missing from the reporting forms. In general, these "unspecified" lines account for a small percent of either transactions or dollar amounts, and even in those cases where the percentages run moderately high, the missing information does not appear to be especially material, given the corresponding large amount of specified information.

The fact that the reporting forms were returned with such a high degree of informational completeness tells nothing, of course, about the accuracy of the information actually supplied. However, while the effort put into the survey did vary among the participating

banks, on balance it was quite thorough and should have produced reasonably reliable information. Beyond that, it simply is not possible to confidently assess the quality of the information, especially at the finer levels of detail called for in the reporting schedules.

As to the generality of the survey results, the fact that the survey was limited in the case of Fedwire to payments made by the nine largest Clearing House banks, and in the case of CHIPS to those same Clearing House banks plus four large, internationally prominent foreign banks, may render the results somewhat atypical of either of the two wire payments systems generally. However, in the case of New York Fedwire, which the nine sample banks dominated with 76 percent of payments dollar volume, the survey results as a matter of arithmetic cannot contain much sampling bias. Moreover, while the sample banks in the CHIPS survey accounted for less than half of the dollar volume on CHIPS, there is little reason to expect that the character of traffic of other CHIPS participants is systematically different in important degree from that captured in the sample. But, in any event, because the sample did not encompass all institutions participating on CHIPS and New York Fedwire, some question about the broad generality of the results for either of the wire systems in aggregate remains, and this is particularly true for the finer transactional breakdowns.

The Nature and Purpose of CHIPS & Fedwire Payments

Table 8 on the next page breaks down the CHIPS and Fedwire survey data by the broad survey transactions categories, showing for each survey the number and dollar amount of transactions, and the percentages of the respective totals of each, attributable to each of the various transactions categories. (Also, because the CHIPS survey uniquely included transactions of four foreign bank CHIPS participants, the survey data for those participants alone are shown separately in Table 9 for comparison, but will not hereafter be referred to separately since their presence in the CHIPS survey does not materially affect the nature or composition of the overall results.)

The most striking, though perhaps not surprising, feature of Table 8 is the extent to which it demonstrates the substantial independence of business purposes served by the two funds transfer systems. At the one extreme, CHIPS handled almost all foreign exchange transactions, while at the other extreme Fedwire accounted for virtually all transactions related to securities purchase/redemption/financing and Federal funds purchases and sales.

Table 8 does, of course, indicate seemingly significant overlap between the two wire systems in those transactions included within the four categories labeled Bank Loan, Commercial and Miscellaneous, Settlement, and Eurodollar Placements. Even here, however, the overlap is more apparent than real. Within these broad categories of transactions, there are substantial differences as to the location of the customers involved and the nature and purpose of the transactions, with CHIPS internationally specialized in both respects and Fedwire domestically focused. As one example, in the second largest apparent area of overlap--settlement transactions--

TABLE 8

TRANSACTIONS BY SURVEY CATEGORY BY WIRE SYSTEM
 (\$ Amounts in Millions)

<u>Schedule/ Transactions Category</u>	<u>CHIPS</u>				<u>Fedwire</u>			
	<u>No. of Trans- actions</u>	<u>%</u>	<u>Dollar Amount</u>	<u>%</u>	<u>No. of Trans- actions</u>	<u>%</u>	<u>Dollar Amount</u>	<u>%</u>
A. Securities Purchase/ Redemption/ Financing	32	1.2	930	1.7	990	32.6	27,717	24.
B. Bank Loan	44	1.6	1,001	1.8	79	2.6	2,340	2.
C. Federal Funds	10	0.4	146	0.3	888	29.2	39,709	35.
D. Commercial and Misc.	131	4.7	4,702	8.4	540	17.8	18,762	16.
E. Settlement	130	4.7	7,140	12.8	228	7.5	11,735	10.
F. Eurodollar Placements	659	23.7	18,259	33.0	289	9.5	11,200	10.
F. Foreign Exchange	1,773	63.8	23,476	42.0	27	0.9	245	0.
Totals	2,779	100.0	55,652	100.0	3,041	100.0	111,708	100.

TABLE 9

CHIPS TRANSACTIONS OF FOREIGN BANK PARTICIPANTS BY SURVEY CATEGORY
 (\$ Amounts in Millions)

<u>Schedule/ Transactions Category</u>	<u>Number of Transactions</u>	<u>%</u>	<u>Dollar Amount</u>	<u>%</u>
A. Securities Purchase/ Redemption/ Financing	1	0.3	33	0.5
B. Bank Loan	1	0.3	2	--
C. Federal Funds	--	--	--	--
D. Commercial and Misc.	5	1.3	142	2.2
E. Settlement	6	1.5	117	1.8
F. Eurodollar Placements	93	23.3	2,830	44.3
F. Foreign Exchange	293	73.4	3,258	51.1
Totals	399	100.0	6,382	100.0

the CHIPS payments were dominated by adjustments to the correspondent balances of foreign banks and to settlement of Euroclear and Cedel positions. Fedwire settlement transactions, on the other hand, were dominated by adjustments to the correspondent balances of domestic banks and the settlement of end-of-day CHIPS positions on the books of the Federal Reserve Bank of New York. These sorts of differences between CHIPS and Fedwire will be seen throughout the following analysis.

The preceding Table 8 gives, of course, only a rough picture of the true division of labor between CHIPS and Fedwire. The differences in the size and structure of the two samples in relation to the respective overall CHIPS and Fedwire traffic of the survey participants, together with the differing survey response rates, makes a close comparison of the raw survey data inappropriate. To get a better picture, it is necessary to use the individual survey statistics to estimate the characteristics of the respective "populations" from which they were drawn. To accomplish that, the data shown in Table 8 were developed for each of the three payment size classifications used in drawing the samples, and the percentages so obtained were then multiplied against the respective CHIPS and Fedwire population totals within each of those three payment size classifications. The results were then added across the three payment size classifications to get an estimate of the breakdown of the aggregate CHIPS and Fedwire traffic from which the samples were drawn. The outcome of these estimation procedures is presented as Table 10.

TABLE 10

ESTIMATED AGGREGATE TRANSACTIONS BY WIRE SYSTEM
 (\$ Amounts in Millions)

Schedule/ Transactions Category	CHIPS				Fedwire			
	No. of Trans- actions	%	Dollar Amount	%	No. of Trans- actions	%	Dollar Amount	%
A. Securities Purchase/ Redemption/ Financing	274	1.0	2,842	1.4	4,458	37.7	54,856	27.8
B. Bank Loan	399	1.4	3,476	1.7	272	2.3	3,956	2.0
C. Fed Funds	107	0.4	788	0.4	2,361	19.9	66,269	33.6
D. Commercial and Misc.	1,295	4.5	12,793	6.2	2,690	22.7	33,593	17.0
E. Settlement	945	3.3	16,198	7.9	915	7.7	18,664	9.5
F. Eurodollar Placements	4,800	16.8	56,255	27.5	966	8.2	18,848	9.6
F. Foreign Exchange	20,674	72.6	112,505	54.9	173	1.5	858	0.4
Totals	28,494	100.0	204,857	100.0	11,836	100.0	197,043	100.0

The principal differences between Table 8 and Table 10 center on the percentage composition of CHIPS payments traffic. Foreign Exchange transactions take on a significantly greater importance in both numbers and dollar amounts, because these transactions tend to have a relatively low average dollar value and thus received a relatively low weight in the graduated percentage sampling procedure that was used for the survey. For the opposite reason, Eurodollar Placement and Settlement transactions both assume lower percentages in the CHIPS estimated aggregate transactions data. Foreign Exchange and Eurodollar Placement transactions remain by far the dominant payment flows on CHIPS, together accounting for close to an estimated 90 percent of total transactions and for 82.4 percent of dollar value. In comparison to Fedwire, CHIPS also takes on a relatively greater role in Eurodollar placement activity, accounting for 75 percent of the total of such estimated aggregate payments by survey participants on both CHIPS and Fedwire, up from 62 percent of the total of Eurodollar Placements captured in the survey data.

The Survey Results in Detail

The remainder of this report presents for both the CHIPS and Fedwire surveys composite summaries of the survey reporting schedules that were returned by the survey participants, along with data on the timing of the transactions within the day. Also, for Fedwire, data are presented on the destination of the payments by Federal Reserve District. The foreign bank participants are included in the CHIPS data throughout. Also, no attempt is made to expand either the CHIPS or Fedwire data to estimate population characteristics.

Schedule A: Securities Purchase/Redemption/Financing Transactions

Tables 11 and 12, overleaf, present the composite summaries of the reporting forms (Schedule A) for this transactions category received back from the CHIPS and Fedwire surveys, respectively. The CHIPS survey results included only 32 transactions in this category, totaling \$930 million in value. By contrast, the Fedwire survey results included 990 transactions with an aggregate value of \$27,717 million. This category of transactions was both the second smallest for the CHIPS survey and the second highest for Fedwire, with Federal funds transactions in each case making for these opposing second-place rankings (see Table 8).

Transactions for Broker/Dealer and Investor Customer accounts dominated both surveys about equally. As to types of instruments, forty percent of the dollar value of CHIPS transactions were in Eurobonds/notes, while, in contrast, transactions on Fedwire were scattered rather broadly across the full array of domestic instruments and included only a relatively small percentage of Eurodollar instruments. Not surprisingly, commercial paper transactions dominated the Fedwire survey results, reflecting the fact that several of the participant banks in the survey are major issuing and paying agents for issuers of commercial paper. The 12.6 percent share of transactions involving "other" instruments reflected for the most part purchases of portfolios of whole home mortgages from thrift institution by a Federal mortgage agency, obviously for the purpose of securitization.

TABLE 11

CHIPS SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
COMPOSITE SUMMARY
(\$ amounts in millions)

	<u>Number of</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
	<u>Transactions</u>			
<u>Initiated By/For:</u>				
Own Investment Account	--	--	--	--
Own Trading Account	--	--	--	--
Own Other Account	2	6.25	148	15.94
Broker/Dealer	14	43.75	454	48.85
Investor Customer	14	43.75	278	29.89
Security Issuer	2	6.25	50	5.32

<u>Instrument:</u>				
Bankers Acceptance	1	3.13	5	0.49
Book-Entry Securities				
--Fedwire	1	3.13	2	0.21
Domestic C/D	3	9.38	12	1.32
Euro C/D	2	6.25	16	1.73
Commercial Paper	6	18.75	162	17.46
Corporate Bond/Note	2	6.25	114	12.24
Corporate Stock	--	--	--	--
Eurobond/Note	9	28.13	363	38.99
Mortgage-Backed Security				
--Definitive	--	--	--	--
Municipal Security	--	--	--	--
Other	6	18.75	229	24.64
Misc. Pool of Loan Collateral	--	--	--	--
Unspecified	2	6.25	27	2.90

(Continued on Next Page)

TABLE 11
(Continued from previous page)

CHIPS SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
COMPOSITE SUMMARY
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Nature of Transaction:</u>				
New Issue	9	28.13	258	27.70

Secondary Market	16	50.00	588	63.24

Payment at Maturity	5	15.63	77	8.28

Unspecified	2	6.25	7	0.79

<u>Purpose of Transaction:</u>				
Investment	4	12.50	103	11.03

Trading	12	37.50	428	46.07

Underwriting	2	6.25	70	7.52

Repurchase Agreement	2	6.25	35	3.76

Collateralized Broker/Dealer Loan	2	6.25	100	10.75

Safekeeping	1	3.13	5	0.54

Other	2	6.25	123	13.26

Unspecified	7	21.88	66	7.06

TOTALS	32	100.0	930	100.0

TABLE 12

FEDWIRE SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
COMPOSITE SUMMARY
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Initiated By/For:</u>				
Own Investment Account	7	0.71	155	0.56
Own Trading Account	21	2.12	679	2.45
Own Other Account	34	3.43	1,011	3.65
Broker/Dealer	437	44.14	16,139	58.23
Investor Customer	359	36.26	6,615	23.87
Security Issuer	132	13.33	3,118	11.25

<u>Instrument:</u>				
Bankers Acceptance	86	8.69	1,031	3.72
Book-Entry Securities				
--Fedwire	62	6.26	3,788	13.66
Domestic C/D	79	7.98	2,321	8.38
Euro C/D	51	5.15	1,500	5.41
Commercial Paper	410	41.41	10,366	37.40
Corporate Bond/Note	33	3.33	1,090	3.93
Corporate Stock	3	0.30	23	0.08
Eurobond/Note	3	0.30	207	0.75
Mortgage-Backed Security				
--Definitive	49	4.95	1,046	3.77
Municipal Security	46	4.65	413	1.49
Other	93	9.39	3,489	12.59
Misc. Pool of Loan Collateral	9	0.91	256	0.92
Unspecified	66	6.67	2,188	7.89

(Continued on Next Page)

TABLE 12
(Continued from previous page)

FEDWIRE SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
COMPOSITE SUMMARY
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Nature of Transaction:</u>				
New Issue	285	28.79	7,429	26.80

Secondary Market	395	39.90	9,791	35.32

Payment at Maturity	244	24.65	7,373	26.60

Unspecified	66	6.67	3,124	11.27

<u>Purpose of Transaction:</u>				
Investment	273	27.58	5,843	21.08

Trading	235	23.74	6,347	22.90

Underwriting	11	1.11	501	1.81

Repurchase Agreement	189	19.09	8,227	29.68

Collateralized Broker/Dealer Loan	17	1.72	906	3.27

Safekeeping	86	8.69	1,204	4.34

Other	64	6.46	1,972	7.11

Unspecified	115	11.62	2,718	9.81

TOTALS	990	100.0	27,717	100.0

With respect to the Fedwire survey alone, the almost precise equality between the dollar value of new issue transactions and payments at maturity is a sensible result that is suggestive of good quality of survey information. The 30 percent figure for the share of transactions value attributed to repurchase agreements under the "Purpose of Transaction" heading seems a bit high, but is consistent with both the sizeable shares of transactions value attributed to Broker/Dealer customers and to Fedwire book-entry securities.

Tables 13 and 14 on the next two pages show securities related transactions by time of day for the CHIPS and Fedwire surveys, respectively. As expected, the payments cluster heavily toward the end of the day on both wire transfer systems. Almost 70 percent of the value of CHIPS securities-related transactions occurred in the 2 1/2 hour period between 2:00 p.m. and the close of CHIPS at 4:30 p.m. The end-of-day clustering of activity was equally compressed in time on Fedwire, with almost 60 percent of the value of securities-related transactions occurring in the two hours just prior to the normal 6:00 p.m. closing of Fedwire to third-party intra-District traffic. This heavy end-of-day clustering on Fedwire was due almost entirely to payments flows associated with new securities issuance. Nearly 80 percent of the day's total of \$7.4 billion of payments attributed in the Fedwire survey to new securities issues occurred within this two-hour period, half of it involving commercial paper and the other half spread broadly across eight other classes of instruments.

TABLE 13
CHIPS SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
7:31 to 8:00	1	3.13	2	0.21
8:01 to 8:30	1	3.13	13	1.34
8:31 to 9:00	0	0.00	0	0.00
9:01 to 9:30	0	0.00	0	0.00
9:31 to 10:00	0	0.00	0	0.00
10:01 to 10:30	0	0.00	0	0.00
10:31 to 11:00	0	0.00	0	0.00
11:01 to 11:30	2	6.25	55	5.94
11:31 to 12:00	1	3.13	98	10.57
12:01 to 12:30	1	3.13	5	0.52
12:31 to 13:00	0	0.00	0	0.00
13:01 to 13:30	1	3.13	70	7.51
13:31 to 14:00	3	9.38	45	4.80
14:01 to 14:30	6	18.75	147	15.79
14:31 to 15:00	2	6.25	21	2.27
15:01 to 15:30	7	21.88	214	23.05
15:31 to 16:00	4	12.50	140	15.09
16:01 to 16:30	3	9.38	120	12.91
Totals	32	100.00	930	100.00

TABLE 14

FEDWIRE SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
8:31 to 9:00	3	0.30	115	0.41
9:01 to 9:30	0	0.00	0	0.00
9:31 to 10:00	15	1.52	193	0.70
10:01 to 10:30	7	0.71	408	1.47
10:31 to 11:00	6	0.61	780	2.82
11:01 to 11:30	19	1.92	335	1.21
11:31 to 12:00	7	0.71	761	2.74
12:01 to 12:30	26	2.63	453	1.63
12:31 to 13:00	17	1.72	567	2.05
13:01 to 13:30	29	2.93	1,898	6.85
13:31 to 14:00	58	5.86	1,398	5.05
14:01 to 14:30	70	7.07	1,581	5.70
14:31 to 15:00	87	8.79	2,050	7.40
15:01 to 15:30	8	0.81	198	0.71
15:31 to 16:00	20	2.02	362	1.31
16:01 to 16:30	192	19.39	4,447	16.04
16:31 to 17:00	201	20.30	4,243	15.31
17:01 to 17:30	199	20.10	7,018	25.32
17:31 to 18:00	18	1.82	638	2.30
18:01 to 18:30	8	0.81	271	0.98
Totals	990	100.00	27,717	100.00

With respect to Fedwire, the payments flows related to securities activities were heavily concentrated within the Second Federal Reserve District (see Table 15 on the next page). Seventy-six percent of the value of securities-related payments went to Second District counterparties, and 87 percent of that went from one of the nine Clearing House bank survey participants to another. The distribution of securities-related payments among the other Federal Reserve Districts is about as might have been expected, except for the low percentage accounted for by the Boston District. The latter, however, reflects the fact that the larger Boston banks either have offices in New York City that handle their securities-related transactions or use New York correspondent banks for that purpose.

TABLE 15

FEDWIRE SECURITIES PURCHASE/REDEMPTION/FINANCING TRANSACTIONS
DESTINATION BY FEDERAL RESERVE DISTRICT
(\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	23	2.33	247.3	0.90
New York <u>1/</u>	733	74.12	20,874.0	76.26
Philadelphia	17	1.72	330.5	1.21
Cleveland	27	2.73	867.3	3.17
Richmond	14	1.42	119.6	0.44
Atlanta	10	1.01	558.0	2.04
Chicago	71	7.18	1,099.1	4.02
St. Louis	5	0.51	32.0	0.12
Minneapolis	16	1.62	384.1	1.40
Kansas City	14	1.42	841.0	3.07
Dallas	10	1.01	357.4	1.31
San Francisco	49	4.95	1,661.4	6.07
Totals	989	100.00	27,371.6	100.00

<u>1/Received by Survey Participants.</u>	638	64.51	18,203.9	66.51
---	-----	-------	----------	-------

B. Bank Loan Transactions

Tables 16 and 17 present for CHIPS and Fedwire, respectively, the composite summaries of the survey responses covering Bank Loan transactions. As expected, these transactions were small in frequency and value within both samples. Many bank loan transactions--disbursement of principal and repayments--probably occur directly across the books of lending banks, rather than flowing through the wire transfer networks. One exception to that would be where a bank's customers are making repayments on loans from third-party lenders, that is, where a bank's customer instructs its bank to transfer funds to repay a loan at another bank. These payments are made either directly or through a lead bank and probably explain the fact that payments of this nature constitute the largest single category in both CHIPS and the Fedwire survey. In any event the small numbers and amounts of Bank Loans transactions in both surveys, together with the fact that any one day's activity of this type is apt to reflect unique influences, makes broad generalizations about this survey category inappropriate.

Tables 18, and 19 show, respectively the intraday timing of CHIPS and Fedwire Bank Loan transactions, and Table 20 presents the destination of the Fedwire payments. Nothing in these data appears surprising. The timing data show both CHIPS and Fedwire payments fairly well distributed throughout the day. The Fedwire destination data do show a higher concentration of loan-related payments to the Chicago and San Francisco Districts than is true of the other survey transactions categories, but that could be nothing more than mere

happenstance, given the small number of loan transactions captured in the survey and the timing factors that can impact any one day's payments patterns for this classification of transactions.

TABLE 16

CHIPS BANK LOAN TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

<u>Nature of Transaction</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Disbursement of Principal to Borrower	13	29.55	141	14.09
Purchase of Loan Participation	--	--	--	--
Customer Drawdown on Loan Facility	7	15.91	112	11.23
Customer Payment on Third-Party Loan	4	9.09	53	5.28
Payment to Lead/Agent Bank	--	--	--	--
Disbursement of Loan Payments Received	20	45.45	694	69.39
Totals	44	100.00	1,001	100.00

TABLE 17

FEDWIRE BANK LOAN TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

<u>Nature of Transaction</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Disbursement of Principal to Borrower	20	25.32	503	21.51
Purchase of Loan Participation	1	1.27	8	0.32
Customer Drawdown on Loan Facility	10	12.66	102	4.35
Customer Payment on Third-Party Loan	25	31.65	1,151	49.18
Payment to Lead/Agent Bank	--	--	--	--
Disbursement of Loan Payments Received	22	27.85	530	22.63
Not Categorized	1	1.27	47	2.00
Totals	79	100.00	2,340	100.00

TABLE 18

CHIPS BANK LOAN TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
7:31 to 8:00	4	9.09	317	31.66
8:01 to 8:30	1	2.27	2	0.20
8:31 to 9:00	0	0.00	0	0.00
9:01 to 9:30	1	2.27	2	0.22
9:31 to 10:00	0	0.00	0	0.00
10:01 to 10:30	0	0.00	0	0.00
10:31 to 11:00	3	6.82	20	2.03
11:01 to 11:30	4	9.09	100	9.99
11:31 to 12:00	0	0.00	0	0.00
12:01 to 12:30	2	4.55	95	9.49
12:31 to 13:00	1	2.27	8	0.75
13:01 to 13:30	6	13.64	102	10.14
13:31 to 14:00	4	9.09	59	5.93
14:01 to 14:30	5	11.36	142	14.19
14:31 to 15:00	6	13.64	36	3.59
15:01 to 15:30	1	2.27	15	1.50
15:31 to 16:00	1	2.27	2	0.23
16:01 to 16:30	5	11.36	101	10.08
Totals	44	100.00	1,001	100.00

TABLE 19

FEDWIRE BANK LOAN TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
9:01 to 9:30	2	2.53	55	2.35
9:31 to 10:00	0	0.00	0	0.00
10:01 to 10:30	2	2.53	71	3.04
10:31 to 11:00	3	3.80	150	6.41
11:01 to 11:30	3	3.80	175	7.49
11:31 to 12:00	0	0.00	0	0.00
12:01 to 12:30	4	5.06	217	9.26
12:31 to 13:00	6	7.59	176	7.51
13:01 to 13:30	4	5.06	253	10.81
13:31 to 14:00	1	1.27	10	0.43
14:01 to 14:30	10	12.66	197	8.42
14:31 to 15:00	6	7.59	182	7.76
15:01 to 15:30	0	0.00	0	0.00
15:31 to 16:00	0	0.00	0	0.00
16:01 to 16:30	16	20.25	344	14.68
16:31 to 17:00	11	13.92	316	13.51
17:01 to 17:30	9	11.39	189	8.06
17:31 to 18:00	2	2.53	6	0.26
Totals	79	100.00	2,340	100.00

TABLE 20

FEDWIRE BANK LOAN TRANSACTIONS
DESTINATION BY FEDERAL RESERVE DISTRICT
(\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	1	1.27	1.5	0.06
New York <u>1/</u>	44	55.70	1,442.2	61.63
Philadelphia	0	0.00	0.0	0.00
Cleveland	4	5.06	30.5	1.30
Richmond	1	1.27	10.0	0.43
Atlanta	2	2.53	21.2	0.91
Chicago	16	20.25	431.6	18.44
St. Louis	0	0.00	00.0	0.00
Minneapolis	1	1.27	40.0	1.71
Kansas City	2	2.53	11.7	0.50
Dallas	2	2.53	12.3	0.53
San Francisco	6	7.59	339.0	14.49
Totals	79	100.00	2,340.1	100.00
<u>1/Received by Survey Participants.</u>	33	41.77	1,171.5	50.06

C. Federal Funds Transactions

The survey statistics for this class of transactions appear consecutively as Tables 21 through 25, beginning at page 37.

CHIPS transactions in this category, shown in Table 21, were de minimus in both numbers and value, as mentioned earlier. All of the 10 reported CHIPS transactions were undertaken by Clearing House banks for the accounts of their foreign bank customers, only one of which maintains an account with the Federal Reserve Bank of New York. Moreover, the one small CHIPS transaction categorized as term Federal funds appears in fact to have been a Eurodollar placement instead. Thus, it seems that CHIPS serves as a mechanism for effecting Federal funds transfers only in extremely limited circumstances involving an inability to access Fedwire directly or conveniently.

The Fedwire transactions in Federal funds described in Table 22 reflect the fact that the nine Clearing House banks participating in the Fedwire survey are all very active in the Federal funds market as net borrowers. This shows up in the result that more than 60 percent of transactions by numbers and value are identified as for the own accounts of the survey banks. And, because the survey was limited to payments sent by the survey banks, these transactions for "own account" appear largely as "return" transactions. Indeed, of the \$25,559 million of transactions for the own accounts of the survey participants, \$21,091 million were returns of funds borrowed and only \$4,468 million (17.5 percent) were sales. The corresponding breakdown of the total of \$14,150 million of transactions for customer accounts was \$10,007 million in

Federal funds returns and \$4,065 million in sales. This latter breakdown suggests that customer depository institutions of the nine Clearing House banks are also fairly heavy net purchasers of Federal funds in the aggregate as well.

Of the 15 Federal funds transactions on Fedwire identified in Table 22 as "term", only four actually provided the maturity, which ranged from three to 309 days. Thus, these data do not permit any generalization about term Federal funds transactions beyond the obvious conclusion that they are indeed rare. However, it should be noted that since this is a study of payments flows, it understates the amount of outstanding term Federal funds in direct proportion to the average maturity of such term borrowing. For example, if the true average maturity of term Federal funds were ten business days, only one-tenth on average would be paid-off or re-borrowed each day. For that reason, nothing in the Fedwire survey data shown in Table 22 necessarily contradicts the 1977 study by the Staff of the Board of Governors that found about 7 1/4 percent of outstanding Federal funds borrowings to involve term contracts.^{1/} By the same token, the tiny percentage of transactions value attributed in this survey to continuing Federal funds contracts cannot be said to be at significant variance from the 4 percent figure the 1977 Staff study cited for such amounts outstanding.

^{1/} See "Repurchase Agreements and Federal Funds", 64 Federal Reserve Bulletin (May, 1978) p. 359.

Tables 23 and 24 show the time-of-day profiles of Federal funds transactions on Fedwire, broken down by sales of funds and return of funds borrowed. The corresponding data for CHIPS have been omitted since it is entirely meaningless, given the insignificance of Federal funds traffic on the CHIPS system.

The intraday profiles of Federal funds sales and returns on Fedwire follow the classic pattern, with returns strongly concentrated in the first half of the day and sales bunched late in the day. This is particularly evident when the percent figures in Tables 23 and 24 are summed to obtain the cumulative percentages of dollar value sent by time of day. Thus, as shown in Table 25, more than three-fourths by value of all Federal funds returns had occurred by 2:00 p.m., with over 50% of these returns occurring by 1:00 p.m., while little more than 5 percent of Federal funds sales had been made by that same time. Moreover, by 4:00 p.m. more than 80 percent of all Federal funds sales still remained to be effected, suggesting that these sales (and purchase) transactions may largely reflect adjustments to funds excesses and deficiencies that became known only late in the day, rather than established ongoing lending and borrowing relationships between regular counterparties.

Table 26 shows the destination of Fedwire Federal Funds transactions by Federal Reserve District. The broad, nationwide distribution of the payments reflects the widely dispersed sources from which the participant Clearing House bank purchase (and hence repay) Federal funds. Of particular note, however, is the heavy flow of transactions to the Kansas City Federal Reserve District. That flow largely reflects the presence in that District of the United States Credit Union Central, which is an extremely large seller of Federal Funds to several of the Clearing House banks.

TABLE 21

CHIPS FEDERAL FUNDS TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Transaction for:</u>				
Own Account	--	--	--	--

Customer	10	100.00	146	100.00

<u>Nature of Transaction:</u>				
Sale	6	60.00	131	89.76

Return	4	40.00	15	10.24

<u>Original Maturity:</u>				
Overnight	9	90.00	141	96.56

Continuing Contract	--	--	--	--

Term	1	10.00	5	3.44

TOTALS	10	100.00	146	100.00

TABLE 22
FEDWIRE FEDERAL FUNDS TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Transaction for:</u>				
Own Account	549	61.82	25,559	64.37

Customer	339	38.18	14,150	35.63

<u>Nature of Transaction:</u>				
Sale	172	19.37	8,533	21.49

Return	712	80.18	31,098	78.31

Unspecified	4	0.45	78	0.20

<u>Original Maturity:</u>				
Overnight	851	95.83	38,266	96.37

Continuing Contract	3	0.34	178	0.45

Term	15	1.69	741	1.87

Unspecified	19	2.14	524	1.32

TOTALS	888	100.00	39,709	100.00

TABLE 23
FEDWIRE SALE OF FEDERAL FUNDS TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
8:31 to 9:00	1	0.58	82	0.96
9:01 to 9:30	0	0.00	0	0.00
9:31 to 10:00	2	1.16	17	0.20
10:01 to 10:30	0	0.00	0	0.00
10:31 to 11:00	0	0.00	0	0.00
11:01 to 11:30	2	1.16	26	0.30
11:31 to 12:00	0	0.00	0	0.00
12:01 to 12:30	2	1.16	29	0.34
12:31 to 13:00	5	2.91	44	0.52
13:01 to 13:30	5	2.91	67	0.78
13:31 to 14:00	4	2.33	195	2.29
14:01 to 14:30	10	5.81	373	4.37
14:31 to 15:00	13	7.56	396	4.64
15:01 to 15:30	0	0.00	0	0.00
15:31 to 16:00	4	2.33	320	3.75
16:01 to 16:30	43	25.00	2,405	28.18
16:31 to 17:00	15	8.72	783	9.18
17:01 to 17:30	17	9.88	822	9.64
17:31 to 18:00	21	12.21	878	10.29
18:01 to 18:30	13	7.56	845	9.91
18:31 to 19:00	15	8.72	1,250	14.65
Totals	172	100.00	8,533	100.00

TABLE 24

FEDWIRE RETURN OF FEDERAL FUNDS TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
8:31 to 9:00	43	6.04	3,397	10.92
9:01 to 9:30	0	0.00	0	0.00
9:31 to 10:00	34	4.78	1,503	4.83
10:01 to 10:30	11	1.54	792	2.55
10:31 to 11:00	45	6.32	2,755	8.86
11:01 to 11:30	117	16.43	3,050	9.81
11:31 to 12:00	52	7.30	1,046	3.36
12:01 to 12:30	54	7.58	2,013	6.47
12:31 to 13:00	62	8.71	2,528	8.13
13:01 to 13:30	83	11.66	3,283	10.56
13:31 to 14:00	57	8.01	3,349	10.77
14:01 to 14:30	36	5.06	1,576	5.07
14:31 to 15:00	34	4.78	1,735	5.58
15:01 to 15:30	1	0.14	50	0.16
15:31 to 16:00	0	0.00	0	0.00
16:01 to 16:30	37	5.20	2,483	7.98
16:31 to 17:00	30	4.21	929	2.99
17:01 to 17:30	12	1.69	485	1.56
17:31 to 18:00	4	0.56	126	0.40
Totals	712	100.00	31,098	100.00

TABLE 25

FEDWIRE FEDERAL FUNDS TRANSACTIONS
Cumulative Percentage of Dollar
Value Sent by Time of Day

<u>Time</u>	<u>Sales</u>	<u>Returns</u>
8:30	0.00%	0.00%
9:00	0.96	10.92
9:30	0.96	10.92
10:00	1.16	15.75
10:30	1.16	18.30
11:00	1.16	27.16
11:30	1.46	36.97
12:00	1.46	40.33
12:30	1.80	46.80
1:00	2.32	54.93
1:30	3.10	65.49
2:00	5.39	76.26
2:30	9.76	81.33
3:00	14.40	86.91
3:30	14.40	87.07
4:00	18.15	87.07
4:30	46.33	95.05
5:00	55.51	98.04
5:30	65.15	99.60
6:00	75.44	100.00%
6:30	85.35	
7:00	100.00%	

TABLE 26

FEDWIRE FEDERAL FUNDS TRANSACTIONS
 DESTINATION BY FEDERAL RESERVE DISTRICT
 (\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	25	2.82	800.7	2.02
New York <u>1/</u>	386	43.47	19,435.4	48.94
Philadelphia	22	2.48	605.4	1.52
Cleveland	29	3.27	1,105.2	2.78
Richmond	27	3.04	716.0	1.80
Atlanta	70	7.88	3,515.7	8.85
Chicago	62	6.98	2,089.3	5.26
St. Louis	29	3.27	668.2	1.68
Minneapolis	18	2.03	871.9	2.20
Kansas City	82	9.23	4,797.7	12.08
Dallas	25	2.82	1,166.1	2.94
San Francisco	113	12.73	3,937.8	9.92
Totals	888	100.00	39,709.4	100.00
<u>1/</u> Received by Survey Participants.	237	26.69	9,938.2	25.03

D. Commercial and Miscellaneous Transactions

The five statistical tables covering this category of survey transactions are presented consecutively beginning with Table 27 on page 45.

Because this survey reporting category included corporate cash concentration and dispersion transactions, it is not surprising that those transactions dominate both surveys. Table 27, which summarizes the CHIPS survey reporting schedules, shows that 80 percent by value of all such transactions involved cash concentration or dispersion by commercial customers. For Fedwire (Table 28), such transactions accounted for an even larger share--93 percent. In both survey's, cash disbursements transactions (the downstreaming of funds), far exceeded those transactions associated with cash concentrations (the upstreaming of funds), undoubtedly reflecting the role of the survey participants as concentration banks.

Transactions involving purchases of goods or services were, as expected, small in number and small in value on both wires. Because most payments for goods and services do tend to be small in value, the fact that transactions of under \$1 million were excluded from both samples undoubtedly accounts for their small numerical presence in the two surveys.

Almost all Commercial and Miscellaneous transactions captured in both surveys were for customer accounts; most of those few identified as for the own accounts of the survey participants were, unsurprisingly, associated with returns of erroneous transfers or other corrections of error. Those transactions falling within the "other" survey category involved a wide array of purposes, the most frequent of which was payment for purchases of precious metals.

The time-of-day profiles of payments, shown in Table 29 and 30 for the CHIPS and Fedwire surveys, respectively, indicate that most Commercial and Miscellaneous transactions on both wires fall in the latter half of the day. This, of course, is consistent with the dominance within this survey category of cash concentration/dispersion transactions. Worth noting, though, is the mid day buldge in CHIPS that corresponds with the close of the European business day.

The Fedwire destination data, presented in Table 31, indicates that almost 74 percent by value of Commercial and Miscellaneous payments remained within the Second Federal Reserve District and that 94 percent of that (69 percent of the grand total of such Fedwire payments) flowed between the nine survey participants. Thus, much of the cash concentration/dispersion activity that dominates this Fedwire transactions category simply reflects the repositioning of balances during the day among multiple accounts held at the nine clearing house banks by large commercial customers, especially those held by large nondepository financial institutions.

TABLE 27
CHIPS COMMERCIAL AND MISCELLANEOUS TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Transaction for:</u>				
Own Account	7	5.34	2840	6.05
Customer	124	94.66	4,417	93.95

<u>Nature of Transaction:</u>				
Purchase of Goods or Services	15	11.45	298	6.33
Cash Concentration in a Lead Account from Other Accounts of the Same Organization	19	14.50	1,432	30.46
Cash Dispersion from a Lead Account to Other Accounts of the Same Organization	54	41.22	2,345	49.89
Domestic Time Deposit Placement or Return	12	9.16	200	4.25
Return of Erroneous Transfer or Other Correction of Error	10	7.63	136	2.89
Other	20	15.27	286	6.07
Unspecified	1	0.76	5	0.11

TOTALS	131	100.00	4,702	100.00

TABLE 28

FEDWIRE COMMERCIAL AND MISCELLANEOUS TRANSACTIONS
 COMPOSITE DESCRIPTION
 (\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Transaction for:</u>				
Own Account	21	3.89	252	1.34
Customer	518	95.93	18,430	98.23
Unspecified	1	0.19	80	0.43

<u>Nature of Transaction:</u>				
Purchase of Goods or Services	23	4.26	126	0.67
Cash Concentration in a Lead Account from Other Accounts of the Same Organization	128	23.70	4,754	25.34
Cash Dispersion from a Lead Account to Other Accounts of the Same Organization	316	58.52	12,619	67.26
Domestic Time Deposit Placement or Return	15	2.78	165	0.88
Return of Erroneous Transfer or Other Correction of Error	15	2.78	399	2.13
Other	42	7.78	684	3.64
Unspecified	1	0.19	14	0.07

TOTALS	540	100.00	18,762	100.00

TABLE 29

CHIPS COMMERCIAL AND MISCELLANEOUS TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
7:31 to 8:00	2	1.53	192	4.09
8:01 to 8:30	0	0.00	0	0.00
8:31 to 9:00	1	0.76	2	0.03
9:01 to 9:30	2	1.53	4	0.09
9:31 to 10:00	1	0.76	1	0.03
10:01 to 10:30	2	1.53	230	4.89
10:31 to 11:00	6	4.58	52	1.11
11:01 to 11:30	11	8.40	176	3.75
11:31 to 12:00	10	7.63	435	9.26
12:01 to 12:30	11	8.40	1,044	22.20
12:31 to 13:00	2	1.53	36	0.77
13:01 to 13:30	2	1.53	130	2.77
13:31 to 14:00	13	9.92	170	3.62
14:01 to 14:30	17	12.98	205	4.37
14:31 to 15:00	10	7.63	620	13.19
15:01 to 15:30	14	10.69	329	7.00
15:31 to 16:00	20	15.27	998	21.23
16:01 to 16:30	7	5.34	75	1.60
Totals	131	100.00	4,702	100.00

TABLE 30
FEDWIRE COMMERCIAL AND MISCELLANEOUS TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
8:31 to 9:00	1	0.19	5	0.03
9:01 to 9:30	6	1.11	82	0.44
9:31 to 10:00	4	0.74	70	0.37
10:01 to 10:30	12	2.22	590	3.14
10:31 to 11:00	14	2.59	377	2.01
11:01 to 11:30	37	6.85	1,601	8.53
11:31 to 12:00	16	2.96	206	1.10
12:01 to 12:30	24	4.44	250	1.33
12:31 to 13:00	27	5.00	703	3.75
13:01 to 13:30	30	5.56	316	1.68
13:31 to 14:00	26	4.81	1,039	5.54
14:01 to 14:30	30	5.56	472	2.52
14:31 to 15:00	48	8.89	1,833	9.77
15:01 to 15:30	0	0.00	0	0.00
15:31 to 16:00	6	1.11	89	0.47
16:01 to 16:30	86	15.93	4,005	21.35
16:31 to 17:00	78	14.44	3,320	17.70
17:01 to 17:30	62	11.48	2,694	14.36
17:31 to 18:00	24	4.44	547	2.91
18:01 to 18:30	9	1.67	562	3.00
Totals	540	100.00	18,762	100.00

TABLE 31

FEDWIRE COMMERCIAL AND MISCELLANEOUS TRANSACTIONS
DESTINATION BY FEDERAL RESERVE DISTRICT
(\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	26	4.81	1,232.4	6.57
New York <u>1/</u>	310	57.41	13,810.4	73.61
Philadelphia	27	5.00	265.7	1.42
Cleveland	21	3.89	363.0	1.94
Richmond	22	4.07	281.1	1.50
Atlanta	14	2.59	166.3	0.89
Chicago	46	8.52	1,625.4	8.66
St. Louis	7	1.30	27.8	0.15
Minneapolis	13	2.41	204.4	1.09
Kansas City	8	1.48	86.2	0.46
Dallas	11	2.04	82.9	0.44
San Francisco	35	6.48	616.2	3.28
Totals	540	100.00	18,761.8	100.00
<u>1/Received by Survey Participants.</u>	267	49.44	12,928.2	68.91

E. Settlement Transactions

The Tables containing the survey statistics for this group of transactions are numbered 32 through 36 and begin at page 52.

The composite summary of the CHIPS survey reporting schedules, shown in Table 32, contains no surprises. Correspondent balance adjustments account for more than 84 percent by value of all such reported CHIPS transactions, reflecting adjustments mostly by foreign banks to their correspondent balances held with the nine Clearing House banks. One minor apparent anomaly in the CHIPS data is the larger dollar amount of transactions attributed to settlement of CEDEL positions than to Euroclear positions, given the larger size of Euroclear, but that is partly offset by the presence of some Euroclear settlement transactions in the Fedwire data. However, the higher dollar value associated with CEDEL is not necessarily a reflection of the level of volume for either system, as both CEDEL and Euroclear are net settlers. Moreover, the roughly equal number of transactions picked up for each system indicates that parties deal with both systems.

With respect to the Fedwire data (see Table 33), correspondent balance adjustments dominate this group of transactions as well. While the share of total transactions by value is only 61 percent, versus 84 percent for CHIPS, that simply reflects the presence in the Fedwire statistics of large payments into the Federal Reserve Bank of New York to settle CHIPS positions. After excluding the latter from the transaction totals, correspondent balance adjustments account for 87 percent of the remaining Fedwire settlement transactions.

The pattern of payments by time of day, shown in Tables 34 and 35, reflects the fact that, by their nature, settlement transactions occur later in the day. The particularly heavy concentration of Fedwire settlement transactions between 5:00 and 5:30 p.m., for instance, simply reflects that fact that payments into the CHIPS settlement account occurred within that time frame.

An anomaly in the Fedwire Destination statistic shown in Table 36 is also largely explained by the CHIPS settlement account. While more than 65 percent of Fedwire settlement dollars went to Second District receivers, only 31 percent of that flowed between the Clearing House bank survey participants. That results from the fact that the survey picked up payments sent to the CHIPS settlement account, but, of course, not payments received by survey participants from the account, (a net, net number) and payments sent to correspondents for whom they settle on CHIPS (a net number).

TABLE 32

CHIPS SETTLEMENT TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Transaction for:</u>				
Own Account	1	0.77	80	1.12

Customer	129	99.23	7,059	98.88

<u>Purpose of Transaction:</u>				
CHIPS Position	11	8.46	224	3.14

Depository Trust Company Position	--	--	--	--

MBSCC Position	--	--	--	--

Euroclear Position	14	10.77	160	2.25

Cedel Position	15	11.54	549	7.69

Check Clearings	--	--	--	--

Correspondent Balance Adjustment	87	66.92	6,015	84.25

ACH Position	--	--	--	--

Other	3	2.31	191	2.68

TOTALS	130	100.00	7,140	100.00

TABLE 33
FEDWIRE SETTLEMENT TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Transaction for:</u>				
Own Account	16	7.02	3,099	26.41

Customer	212	92.98	8,636	73.59

<u>Purpose of Transaction:</u>				
CHIPS Position	12	5.26	3,573	30.45

Depository Trust Company Position	--	--	--	--

MBSCC Position	--	--	--	--

Euroclear Position	4	1.75	295	2.52

Cedel Position	--	--	--	--

Check Clearings	5	2.19	348	2.97

Correspondent Balance Adjustment	184	80.70	7,165	61.06

ACH Position	--	--	--	--

Other	22	9.65	303	2.58

Unspecified	1	0.44	50	0.43

TOTALS	228	100.00	11,735	100.00

TABLE 34
CHIPS SETTLEMENT TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
7:00 to 7:30	3	2.31	40	0.56
7:31 to 8:00	6	4.62	122	1.71
8:01 to 8:30	10	7.69	154	2.16
8:31 to 9:00	8	6.15	838	11.73
9:01 to 9:30	1	0.77	29	0.41
9:31 to 10:00	0	0.00	0	0.00
10:01 to 10:30	7	5.38	140	1.96
10:31 to 11:00	4	3.08	37	0.52
11:01 to 11:30	8	6.15	35	0.49
11:31 to 12:00	3	2.31	45	0.63
12:01 to 12:30	7	5.38	100	1.39
12:31 to 13:00	6	4.62	914	12.80
13:01 to 13:30	7	5.38	1,046	14.65
13:31 to 14:00	14	10.77	670	9.38
14:01 to 14:30	12	9.23	229	3.21
14:31 to 15:00	18	13.85	1,586	22.22
15:01 to 15:30	5	3.85	280	3.93
15:31 to 16:00	8	6.15	782	10.95
16:01 to 16:30	3	2.31	92	1.28
Totals	130	100.00	7,140	100.00

TABLE 35
FEDWIRE SETTLEMENT TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
8:31 to 9:00	2	0.88	269	2.29
9:01 to 9:30	1	0.44	70	0.60
9:31 to 10:00	5	2.19	419	3.57
10:01 to 10:30	5	2.19	126	1.08
10:31 to 11:00	1	0.44	10	0.09
11:01 to 11:30	12	5.26	788	6.71
11:31 to 12:00	4	1.75	56	0.48
12:01 to 12:30	7	3.07	362	3.08
12:31 to 13:00	9	3.95	301	2.57
13:01 to 13:30	7	3.07	184	1.57
13:31 to 14:00	11	4.82	102	0.87
14:01 to 14:30	13	5.70	357	3.04
14:31 to 15:00	16	7.02	318	2.71
15:01 to 15:30	3	1.32	328	2.80
15:31 to 16:00	4	1.75	504	4.30
16:01 to 16:30	36	15.79	1,197	10.20
16:31 to 17:00	29	12.72	1,125	9.59
17:01 to 17:30	37	16.23	4,129	35.19
17:31 to 18:00	12	5.26	430	3.67
18:01 to 18:30	12	5.26	647	5.51
18:31 to 19:00	2	0.88	11	0.09
Totals	228	100.00	11,735	100.00

TABLE 36
FEDWIRE SETTLEMENT TRANSACTIONS
DESTINATION BY FEDERAL RESERVE DISTRICT
(\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	10	4.39	246.8	2.10
New York <u>1/</u>	98	42.98	7,674.3	65.40
Philadelphia	14	6.14	660.8	5.63
Cleveland	15	6.58	832.9	7.10
Richmond	11	4.82	119.7	1.02
Atlanta	11	4.82	171.8	1.46
Chicago	19	8.33	941.0	8.02
St. Louis	6	2.63	64.7	0.55
Minneapolis	4	1.75	31.9	0.27
Kansas City	4	1.75	50.8	0.43
Dallas	9	3.95	164.8	1.40
San Francisco	27	11.84	775.4	6.61
Totals	228	100.00	11,734.7	100.00
<u>1/Received by Survey Participants.</u>	35	15.35	2,375.8	20.24

Schedule F: Eurodollar Placements>Returns

Tables 37 through 43, beginning consecutively at page 61, summarize the survey data for this class of transactions.

The composite summaries of the survey reporting forms shown first in Tables 37 and 38 give further indication of the significant differences in the customer constituencies of CHIPS and Fedwire. As shown in tables 37 and 38, fully 90 percent by value of all CHIPS Eurodollar placement transactions were undertaken for the accounts of foreign customers, and foreign offices of the bank whereas only 26 percent of Fedwire transactions were for foreign customers. In this regard, it should be noted that the reporting schedule for these transactions instructed the survey participants to "treat foreign offices of all banks (including your own) as being 'foreign customers', and treat U.S. offices of foreign banks as being 'domestic customers'." Thus, a survey participant initiating a Eurodollar transaction (either a placement or a return) on behalf of its own, or anyone else's, foreign office would treat that as a transaction for a "foreign" customer. Similarly, any transaction initiated for the account of a U.S. office of a foreign bank would appear as a transaction for a domestic customer. The survey instruction was framed in this fashion so as to identify the decision centers from which the payment instructions originated.

CHIPS Eurodollar transactions were also more heavily for the account of foreign customers and the bank's overseas branches than were Fedwire transactions--94 percent versus 76 percent. That difference also stems from the domestic orientation of the Fedwire transactions; most of the 21 percent by value of Fedwire

transactions that were for the accounts of others than banks--i.e., for nonbank financial and nonfinancial customers--involved domestically based organizations.

The percentage of Eurodollar placements/returns by maturity for the one day category was, as shown in Tables 37 and 38, essentially the same for CHIPS and Fedwire. Also, the maturity distribution for the greater than one-day placements was broadly similar, with three-fourths of all term transactions on both wires having maturity of from two to thirty days. The average maturity of CHIPS term Eurodollar placement was, however, longer than the average maturity on Fedwire--41 days versus 27 days-- reflecting the fact that the CHIPS data contained a few very long maturity placements.

The division of Eurodollar transactions between original placements and repayments is noticeably different between the two surveys. In the case of CHIPS, the dollar value of the original placements dominate moderately with 56 percent of total transactions value, whereas in the Fedwire survey return transactions dominate strongly with 70 percent of total transactions value. Apparently, this again reflects, particularly in the case of the Fedwire data, the fact that the survey was limited to payments sent by the survey participants. Many Fedwire Eurodollar placements being made by domestic customers probably involve an incoming Fedwire payment, and may then involve either a transaction across the books of the receiving Clearing House bank, an outgoing CHIPS payment or an outgoing Fedwire payment. Either of the first two possibilities would diminish the presence of original placements (but not returns)

in the Fedwire survey, and the second of the two could account for the somewhat greater amount of original placements than returns in the CHIPS data as well.

The categorizations in Tables 37 and 38 of the "purpose" of Eurodollar transactions include some doubtful entries. Most survey participants, however, correctly categorized original Eurodollar placements as "investment" transactions and return transactions as the unwinding of "funding" transactions. The other categories that were occasionally designated were intended to apply primarily to the foreign exchange transactions which reporting Schedule F was also designed to capture.

Table 39 and 40 present the time-of-day pattern of all Eurodollar transactions on CHIPS and Fedwire, respectively. The majority of such transactions occurred in the latter half of the day on both wires. However, a more interesting breakdown is that shown in the next two Tables--41 and 42--which divide Eurodollar transactions between placement and returns and present the cumulative percentages of each sent by time of day. Interestingly, these data for CHIPS, while showing that CHIPS Eurodollar returns do occur earlier in the day than new placements, indicate only a relatively small timing disparity between the two payments flows. By contrast, the cumulative percentages shown for Fedwire indicate a wide disparity between returns and placements, approaching that between Federal Funds returns and sales discussed earlier. For instance, at 2:00 p.m. 60 percent by value of all the day's Eurodollar returns on Fedwire had been coupled, while only 15 percent of placement had been effected.

The closer timing match between Eurodollar placements and returns on CHIPS than on Fedwire may reflect the fact that CHIPS Eurodollar transactions are primarily for foreign customers in earlier time zones than those applicable to the domestic customers that predominate on Fedwire. However, that conclusion is problematical since the better match between placements and returns on CHIPS, as compared to Fedwire, lies more in the relatively earlier timing of CHIPS Eurodollar placements, while the intra-day timing of returns is much the same for the two wires after taking account of their different opening and closing times.

The Fedwire destination statistics by Federal Reserve District, shown in Table 43, indicate an unusually high percentage of payments going to the Boston District. That reflects the return of Eurodollar placements to several large money market mutual funds headquartered in Boston. Also, the sizable flow of payments to the Kansas City District in large part reflects returns of placements to the United States Credit Union Central located in that district.

TABLE 37

CHIPS EURODOLLAR TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	<u>Number of</u> <u>Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
<u>Origination:</u>				
In U.S. for own account	6	0.91	91	0.50

In U.S. for Domestic Customer	66	10.02	1,644	9.00

Outside U.S.	587	89.07	16,524	90.50

<u>Customer Type:</u>				
Bank	614	93.17	17,183	94.11

Nonbank Financial	34	5.16	857	4.69

Nonfinancial	9	1.37	203	1.11

Unspecified	2	0.30	17	0.09

<u>Maturity:</u>				
One Day	476	72.23	13,615	74.56

Greater than One Day	108	16.39	2,471	13.53

Unspecified	75	11.38	2,174	11.91

<u>Nature of Transaction:</u>				
Original Placement	379	57.51	10,301	56.41

Repayment	280	42.49	7,959	43.59

<u>Purpose:</u>				
Trade	44	6.68	1,239	6.78

Investment	310	47.04	8,378	45.88

Trading/Positioning	68	10.32	2,060	11.28

Funding	152	23.07	4,673	25.59

Other	7	1.06	129	0.71

Unspecified	78	11.84	1,781	9.75

TOTALS	659	100.00	18,259	100.00

TABLE 38

FEDWIRE EURODOLLAR TRANSACTIONS
 COMPOSITE DESCRIPTION
 (\$ amounts in millions)

	Number of Transactions	Percent	Dollar Amount	Percent
<u>Origination:</u>				
In U.S. for own account	8	2.77	350	3.12

In U.S. for Domestic Customer	218	75.43	7,942	70.91

Outside U.S.	63	21.80	2,908	25.96

<u>Customer Type:</u>				
Bank	202	69.90	8,490	75.80

Nonbank Financial	23	7.96	1,145	10.22

Nonfinancial	58	20.07	1,247	11.13

Unspecified	6	2.80	319	2.85

<u>Maturity:</u>				
One Day	201	69.55	8,412	75.10

Greater than One Day	30	10.38	1,196	10.67

Unspecified	58	20.07	1,593	14.22

<u>Nature of Transaction:</u>				
Original Placement	124	42.91	3,321	29.65

Repayment	165	57.09	7,880	70.35

<u>Purpose:</u>				
Trade	11	3.81	161	1.44

Investment	113	39.10	3,872	34.57

Trading/Positioning	4	1.38	190	1.69

Funding	115	39.79	5,665	50.58

Other	4	1.38	61	0.54

Unspecified	42	14.53	1,252	11.17

TOTALS	289	100.00	11,200	100.00

TABLE 39

CHIPS EURODOLLAR TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
7:01 to 7:30	5	0.76	9	0.05
7:31 to 8:00	20	3.03	591	3.22
8:01 to 8:30	29	4.39	582	3.17
8:31 to 9:00	29	4.39	227	1.24
9:01 to 9:30	20	3.03	554	3.02
9:31 to 10:00	16	2.42	430	2.34
10:01 to 10:30	21	3.18	369	2.01
10:31 to 11:00	39	5.90	887	4.83
11:01 to 11:30	64	9.68	1,583	8.63
11:31 to 12:00	36	5.45	991	5.40
12:01 to 12:30	41	6.20	966	5.26
12:31 to 13:00	54	8.17	1,354	7.38
13:01 to 13:30	32	4.84	538	2.93
13:31 to 14:00	55	8.32	1,616	8.80
14:01 to 14:30	29	4.39	1,159	6.32
14:31 to 15:00	46	6.96	1,373	7.48
15:01 to 15:30	46	6.96	1,619	8.82
15:31 to 16:00	54	8.17	2,541	13.84
16:01 to 16:30	25	3.78	964	5.25
Totals	661	100.00	18,354	100.00

TABLE 40

FEDWIRE EURODOLLAR TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
8:31 to 9:00	8	2.77	672	6.00
9:01 to 9:30	2	0.69	125	1.12
9:31 to 10:00	2	0.69	31	0.28
10:01 to 10:30	6	2.08	243	2.17
10:31 to 11:00	14	4.84	553	4.94
11:01 to 11:30	12	4.15	324	2.89
11:31 to 12:00	12	4.15	539	4.81
12:01 to 12:30	5	1.73	53	0.47
12:31 to 13:00	22	7.61	731	6.53
13:01 to 13:30	12	4.15	134	1.20
13:31 to 14:00	27	9.34	469	4.19
14:01 to 14:30	36	12.46	1,700	15.18
14:31 to 15:00	39	13.49	1,599	14.28
15:01 to 15:30	4	1.38	106	0.95
15:31 to 16:00	2	0.69	35	0.32
16:01 to 16:30	38	13.15	1,377	12.29
16:31 to 17:00	31	10.73	1,895	16.92
17:01 to 17:30	12	4.15	467	4.17
17:31 to 18:00	5	1.73	147	1.31
Totals	289	100.00	11,200	100.00

TABLE 41

CHIPS EURODOLLAR PLACEMENTS/RETURNS
Cumulative Percentage of Dollar
Value Sent by Time of Day

<u>Time</u>	<u>Placements</u>	<u>Returns</u>
7:30	0.90%	0.00%
8:00	2.67	4.11
8:30	5.49	7.76
9:00	7.15	8.47
9:30	8.54	13.63
10:00	8.74	18.78
10:30	10.03	21.74
11:00	15.53	25.76
11:30	19.97	39.91
12:00	25.75	44.87
12:30	32.07	48.84
13:00	41.48	53.68
13:30	44.69	56.29
14:00	53.71	64.28
14:30	58.04	73.24
15:00	65.65	80.64
15:30	77.27	85.94
16:00	94.53	94.97
16:30	100.00%	100.00%

TABLE 42

FEDWIRE EURODOLLAR PLACEMENTS/RETURNS
Cumulative Percentage of Dollar
Value Sent by Time of Day

<u>Time</u>	<u>Placements</u>	<u>Returns</u>
8:30	0.00%	0.00%
9:00	0.00	8.53
9:30	0.00	10.12
10:00	0.00	13.54
10:30	0.14	20.56
11:00	0.14	24.55
11:30	0.43	31.16
12:00	0.97	31.61
12:30	1.50	37.98
13:00	8.41	39.22
13:30	9.49	42.92
14:00	14.83	59.51
14:30	26.66	72.40
15:00	44.22	73.46
15:30	44.91	73.46
16:00	45.98	79.83
16:30	72.33	97.24
17:00	88.06	98.73
17:30	98.59	100.00%
18:00	100.00%	

TABLE 43

FEDWIRE EURODOLLAR TRANSACTIONS
DESTINATION BY FEDERAL RESERVE DISTRICT
(\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	17	5.88	1,475.3	13.17
New York <u>1/</u>	182	62.98	7,094.4	63.34
Philadelphia	6	2.08	84.6	0.76
Cleveland	8	2.77	266.9	2.38
Richmond	6	2.08	161.5	1.44
Atlanta	2	0.69	8.1	0.07
Chicago	18	6.23	369.7	3.30
St. Louis	1	0.35	10.0	0.09
Minneapolis	0	0.00	0.0	0.00
Kansas City	4	1.38	401.2	3.58
Dallas	7	2.42	271.1	2.42
San Francisco	38	13.15	1,057.6	9.44
Totals	289	100.00	11,200.5	100.00

<u>1/</u> Received by Survey Participants.	144	49.83	5,560.8	49.65
--	-----	-------	---------	-------

Schedule F: Foreign Exchange Transactions

The various tables summarizing this survey category of transactions appear consecutively as Tables 44 through 49, beginning at page 70.

As suggested earlier, the 27 foreign exchange transactions reported in the Fedwire survey are too few in number to have much solid informational content. Nonetheless, they do show the sorts of differences with the CHIPS data that would be expected. For instance, in the composite survey summaries presented in Tables 44 and 45, 80 percent by value of Fedwire transactions were for domestic customers, while less than 12 percent of CHIPS transactions were so categorized.^{2/} Moreover, 90 percent of all CHIPS transactions (by value) were identified as for the account of banks (own account plus "customers" banks), while only 18 percent of Fedwire transactions were placed in that category.

The contract types specified for foreign exchange transactions appear consistent with market statistics gathered in other surveys. Looking at the two surveys aggregated, spot contacts thoroughly dominate both numbers and dollar value of transactions, with option contracts ranking second and forward contracts third.

A rather surprising survey finding is the insignificant share of foreign exchange transactions specifically identified as related to international trade in goods and services, and the correspondingly overwhelming share of transactions attributed to trading and positioning activity. However, both finding may simply

^{2/} Again, in this reporting form, survey respondents were asked to treat foreign offices of all banks, including their own, as being foreign customers, and to treat U.S. offices of foreign banks as being domestic customers.

reflect the fact that banks manage foreign exchange portfolios rather than individual customer transactions, and hence are unable to tie transactions made from a portfolio perspective back to specific individual transactions initiated by their commercial customers.

Tables 46 and 47 list foreign exchange transactions by time of day for CHIPS and Fedwire respectively. The CHIPS transactions are spread quite evenly throughout the day, both in numbers of transactions and dollar value. By contrast, the Fedwire foreign exchange transactions were bunched at the end of the day, with half of the transactions and 70 percent of the transactions value occurring after the 4:30 p.m. CHIPS close. The peculiar time profile suggests the possibility Fedwire may have simply served as the vehicle for effecting some transactions that for one reason or another could not be made over CHIPS in a timely fashion. That conclusion is also consistent with the Fedwire destination data (Table 48), which show that all but one of the Fedwire payments went to Second District receivers.

Finally, Table 49 lists the foreign exchange transactions in each survey broken down by the currencies most frequently identified in the responses. Not surprisingly, the Japanese Yen and the German Mark were the dominant currencies transacted, with the Yen accounting for the greater transactions value and the Mark the larger number of transactions. The British Pound was third in both frequency and value of transactions, while the Canadian Dollar, the Swiss Franc and the French Franc closely competed for the ranking of fourth.

TABLE 44

CHIPS FOREIGN EXCHANGE TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

	Number of Transactions	Percent	Dollar Amount	Percent
<u>Origination:</u>				
In U.S. for own account	109	6.15	1,536	6.54

In U.S. for Domestic Customer	109	6.15	2,743	11.69

Outside U.S.	1,555	87.70	19,197	81.77

<u>Customer Type:</u>				
Bank	1,581	89.17	19,648	83.69

Nonbank Financial	112	6.32	3,008	12.81

Nonfinancial	14	0.79	188	0.80

Unspecified	66	3.72	632	2.69

<u>Contract Type:</u>				
Spot	1,332	75.13	13,755	58.59

Forward	89	5.02	1,394	5.94

Swap	110	6.20	3,455	14.72

Option	4	0.23	48	0.20

Other	8	0.45	116	0.49

Unspecified	230	12.97	4,708	20.05

<u>Purpose:</u>				
Trade	17	0.96	395	1.68

Investment	19	1.07	442	1.88

Trading/Positioning	1,678	94.64	21,547	91.78

Funding	10	0.56	103	0.44

Other	2	0.11	15	0.06

Unspecified	47	2.65	974	4.15

TOTALS	1,773	100.00	23,476	100.00

TABLE 45

FEDWIRE FOREIGN EXCHANGE TRANSACTIONS
COMPOSITE DESCRIPTION
(\$ amounts in millions)

<u>Origination:</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
In U.S. for own account	1	3.70	5	2.04

In U.S. for Domestic Customer	19	70.37	195	79.71

Outside U.S.	7	25.93	45	18.25

<u>Customer Type:</u>				
Bank	11	40.74	39	15.76

Nonbank Financial	10	37.04	158	64.42

Nonfinancial	5	18.52	43	17.77

Unspecified	1	3.70	5	2.04

<u>Contract Type:</u>				
Spot	12	44.44	75	30.72

Forward	3	11.11	26	10.43

Swap	4	14.81	43	17.59

Option	3	11.11	85	34.74

Other	1	3.70	2	0.92

Unspecified	4	14.81	14	5.59

<u>Purpose:</u>				
Trade	1	3.70	7	2.69

Investment	1	3.70	2	0.92

Trading/Positioning	24	88.89	227	92.84

Funding	--	--	--	--

Other	--	--	--	--

Unspecified	1	3.70	9	3.56

TOTALS	27	100.00	245	100.00

TABLE 46

CHIPS FOREIGN EXCHANGE TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
7:01 to 7:30	36	2.03	402	1.72
7:31 to 8:00	165	9.32	1,686	7.21
8:01 to 8:30	154	8.70	1,302	5.57
8:31 to 9:00	112	6.32	951	4.07
9:01 to 9:30	139	7.85	1,403	6.00
9:31 to 10:00	62	3.05	402	1.72
10:01 to 10:30	96	5.42	1,179	5.04
10:31 to 11:00	131	7.40	1,220	5.22
11:01 to 11:30	126	7.11	1,497	6.40
11:31 to 12:00	71	4.01	1,085	4.64
12:01 to 12:30	121	6.83	1,486	6.36
12:31 to 13:00	75	4.23	833	3.56
13:01 to 13:30	101	5.70	1,227	5.25
13:31 to 14:00	105	5.87	2,094	8.74
14:01 to 14:30	82	4.63	2,073	8.87
14:31 to 15:00	78	4.40	1,817	7.77
15:01 to 15:30	51	2.88	950	4.07
15:31 to 16:00	43	2.37	1,277	5.27
16:01 to 16:30	25	1.41	592	2.53
Totals	1,773	100.00	23,476	100.00

TABLE 47

FEDWIRE FOREIGN EXCHANGE TRANSACTIONS
BY TIME OF DAY
(\$ amounts in millions)

<u>Time</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
9:31 to 10:00	2	7.41	8	3.10
10:01 to 10:30	1	3.70	11	4.66
10:31 to 11:00	1	3.70	5	2.13
11:01 to 11:30	1	3.70	2	0.92
11:31 to 12:00	2	7.41	19	7.75
12:01 to 12:30	0	0.00	0	0.00
12:31 to 13:00	1	3.70	1	0.60
13:01 to 13:30	0	0.00	0	0.00
13:31 to 14:00	2	7.41	4	1.64
14:01 to 14:30	1	3.70	5	2.04
14:31 to 15:00	2	7.41	12	5.08
15:01 to 15:30	0	0.00	0	0.00
15:31 to 16:00	0	0.00	0	0.00
16:01 to 16:30	1	3.70	3	1.23
16:31 to 17:00	7	25.93	63	25.64
17:01 to 17:30	1	3.70	9	3.56
17:31 to 18:00	4	14.81	97	39.61
18:01 to 18:30	1	3.70	5	2.04
Totals	27	100.00	245	100.00

TABLE 48

FEDWIRE FOREIGN EXCHANGE TRANSACTIONS
DESTINATION BY FEDERAL RESERVE DISTRICT
 (\$ amounts in millions)

<u>District</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Boston	1	3.85	10.4	4.29
New York <u>1/</u>	25	96.15	232.2	95.71
Totals	26	100.00	242.6	100.00
<u>1/</u> Received by Survey Participants.	15	57.69	80.7	33.26

TABLE 49

FOREIGN CURRENCY TRANSACTIONS BY CURRENCY BY WIRE SYSTEM
(\$ Amounts in Millions)

<u>Currency</u>	<u>CHIPS</u>				<u>Fedwire</u>			
	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>	<u>Number of Transactions</u>	<u>Percent</u>	<u>Dollar Amount</u>	<u>Percent</u>
Australian Dollar....	12	0.8	79	0.4	1	4.3	5	2.3
Austrian Schilling...	1	0.1	5	0.0	--	--	--	--
Belgian Franc.....	12	0.8	208	1.1	--	--	--	--
British Pound.....	189	12.2	2,043	10.9	1	4.3	16	7.1
Canadian Dollar.....	50	3.2	1,025	5.5	1	4.3	15	6.5
Danish Krone.....	4	0.3	36	0.2	--	--	--	--
French Franc.....	89	5.8	1,406	7.5	--	--	--	--
German Mark.....	522	33.8	5,187	27.6	5	21.7	48	20.7
Hong Kong Dollar....	6	0.4	55	0.3	--	--	--	--
Italian Lira.....	29	1.9	208	1.1	--	--	--	--
Japanese Yen.....	385	25.0	6,078	32.4	9	39.1	101	43.8
Netherlands Guilder..	14	0.9	196	1.0	--	--	--	--
New Zealand Dollar...	3	0.2	14	0.1	--	--	--	--
Norwegian Krone.....	5	0.3	45	0.2	--	--	--	--
Singapore Dollar.....	10	0.6	79	0.4	--	--	--	--
Spanish Peseta.....	16	1.0	58	0.3	--	--	--	--
Swiss Franc.....	105	6.8	824	4.4	1	4.3	10	4.5
Other Specified.....	33	2.1	360	1.9	--	--	--	--
Currencies								
Unspecified.....	52	3.4	822	4.4	4	17.4	26	11.2
Currencies								
Multiple Currencies..	6	0.4	39	0.2	1	4.3	9	3.9
Totals.....	1,543	100.0	18,768	100.0	23	100.0	231	100.0

APPENDIX

SURVEY QUESTIONNAIRE FORMS

DOLLAR TRANSFER RELATED TO SECURITIES PURCHASE/REDEMPTION/FINANCING

_____ 1. CHIPS _____ 2. Fedwire Message Time: _____

Sending Bank Name: _____

Receiving Bank Name: _____

Amount of Transfer: \$ _____

Payment Instruction Initiated By/For:

- _____ 1. Bank's Own Investment Account
- _____ 2. Bank's Own Trading Account
- _____ 3. Bank's Own Other Account _____
(Specify account)
- _____ 4. Broker/Dealer _____
(Specify firm's name and type of account)
- _____ 5. Investor Customer _____
(Specify customer's name and type of account)
- _____ 6. Security Issuer _____

Instrument: (Name of Issuer _____)

- _____ 1. Bankers Acceptance
- _____ 2. Book-Entry Security--Fedwire
- _____ 3. Certificate of Deposit--Domestic
- _____ 4. Certificate of Deposit--Euro
- _____ 5. Commercial Paper
- _____ 6. Corporate Bond/Note
- _____ 7. Corporate Stock
- _____ 8. Eurobond/Note
- _____ 9. Mortgage-Backed Security--Definitive
- _____ 10. Municipal Security
- _____ 11. Other _____
(Specify)
- _____ 12. Miscellaneous Pool of Loan Collateral

Nature of Transaction: _____ 1. New Issue Transaction
_____ 2. Secondary Market Transaction
_____ 3. Payment at Maturity

- _____ 1. Investment
- _____ 2. Trading
- _____ 3. Underwriting
- _____ 4. Repurchase Agreement
- _____ 5. Collateralized Broker/Dealer Loan
- _____ 6. Safekeeping Transaction
- _____ 7. Other _____
(Please describe)

BANK LOAN TRANSACTIONS*

_____ 1. CHIPS _____ 2. Fedwire Message Time: _____

Sending Bank Name: _____

Receiving Bank Name: _____

Amount of Transaction: \$ _____

Name of Borrower _____

Business of Borrower _____

Nature of Transaction:

- _____ 1. Disbursement of Principal to Borrower
- _____ 2. Purchase of Loan Participation
- _____ 3. Customer Drawdown on Loan Facility
- _____ 4. Payment by This Bank's Customer on a Third-Party Loan
- _____ 5. Payment to Lead/Agent Bank of This Bank's Share of a Syndicated Loan
- _____ 6. Disbursement of Borrower's Payments Received by This Bank to Another Participant in Our Syndicated/Participated Loan

* Include all loans other than loans to finance securities brokers or dealers. The latter are to be reported on Schedule A.

FEDERAL FUNDS TRANSACTIONS

_____ 1. CHIPS _____ 2. Fedwire Message Time _____

Sending Bank Name: _____

Receiving Bank Name: _____

Amount of Transfer: \$ _____

Transaction For:

- _____ 1. Own Account
- _____ 2. Customer (name) _____

Nature of Transaction:

- _____ 1. Sale of Federal Funds
- _____ 2. Return of Federal Funds Purchased

Original Maturity:

- _____ 1. Overnight
- _____ 2. Continuing Contract
- _____ 3. Term (specify) _____
(Number of days)

COMMERCIAL AND MISCELLANEOUS TRANSACTIONS

_____ 1. CHIPS _____ 2. Fedwire Message Time: _____

Sending Bank Name: _____

Receiving Bank Name: _____

Amount of Transfer: \$ _____

Transaction For:

- _____ 1. Own Account
- _____ 2. Customer (name) _____

Nature of Transaction:

- _____ 1. Purchase of Goods or Services
- _____ 2. Concentration in a Lead Account of Cash from Other Accounts of the Same Organization*
- _____ 3. Dispersion From a Lead Account of Cash to Other Accounts of the Same Organization*
- _____ 4. Domestic Time Deposit Placement/Return
- _____ 5. Return of Erroneous Transfer or Other Correction of Error
- _____ 6. Other** (Please describe) _____

* Should also include, where appropriate, transfers between affiliates of the same organization.

** Should not be used to record transfers to settle CHIPS, Euroclear, Cedel or similar positions; refer to Schedule E.

Schedule E

SETTLEMENT TRANSACTIONS

_____ 1. CHIPS _____ 2. Fedwire Message Time: _____

Sending Bank Name: _____

Receiving Bank Name: _____

Amount of Transfer: \$ _____

Transaction For:

_____ 1. Own Account
_____ 2. Customer (name) _____

Purpose of Transaction:

Settlement of:

- _____ 1. CHIPS Position
- _____ 2. Depository Trust Company Position
- _____ 3. MBSCC Position
- _____ 4. Euroclear Position
- _____ 5. Cedel Position
- _____ 6. Check Clearings
- _____ 7. Correspondent Balance Adjustment
- _____ 8. ACH Position
- _____ 9. Other _____
(Please specify)

DOLLAR TRANSFERS RELATED TO FOREIGN EXCHANGE/EURODOLLAR PLACEMENTS

____ 1. CHIPS ____ 2. Fedwire Message Time: _____

Sending Bank Name: _____

Receiving Bank Name and Location: _____

Amount of Transfer: \$ _____

Payment Instruction Initiated By/For:**

- ____ 1. Bank's Own Account
- ____ 2. Domestic Customer _____
(Specify Name)
- ____ 3. Foreign Customer _____
(Specify Name and Country)

Principal Business Classification of Customer (Please Check):

- ____ 4. Bank ____ 5. Nonbank Financial Institution
- ____ 6. Nonfinancial Institution

Nature of Transaction:

Eurodollar Deposit/Placement for _____ days (Specify Original Term and Check Below)

- ____ 1. Original Transaction ____ 2. Repayment

Foreign Exchange Transaction _____
(Give Name of Currency and Check Below)

- ____ 3. Spot ____ 4. Forward ____ 5. Swap
- ____ 6. Option ____ 7. Other (specify) _____

Purpose of Transaction:

- ____ 1. Trade/Service Related
- ____ 2. Investment
- ____ 3. Foreign Exchange Trading/Positioning
- ____ 4. Funding of Position
- ____ 5. Other (specify) _____

** For purposes of this section, please treat foreign offices of all banks (including your own) as being "foreign customers", and treat U.S. offices of foreign banks as being "domestic customers".