The April 2001 Foreign Exchange and Interest Rate Derivatives Markets Survey

Turnover in the United States

This report presents the United States turnover portion of the 2001 Central Bank Survey of Foreign Exchange and Derivatives Markets. The survey is part of an ongoing series of surveys conducted by central banks every three years on the size, structure, and trends in the foreign exchange and derivatives markets. The survey collected data on over-the-counter transactions executed in the United States during April 2001 in the foreign exchange and derivatives market. The participants included both domestic- and foreign-owned dealers in the United States. Seventy-nine dealers (sixty-six banks and eleven nonbanks) participated in the foreign exchange survey and fifty-four dealers (forty-eight banks and six non-banks) participated in the derivatives survey.

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This report encompasses two surveys. The *Foreign Exchange Market Survey* includes foreign exchange (FX) spot, forward, and swap instruments. The *Foreign Exchange and Interest Rate Derivatives Markets Survey*[1] incorporates forward rate agreements (FRAs) currency and interest rate swaps, and foreign exchange and interest rate options.

SUMMARY OF THE FOREIGN EXCHANGE AND DERIVATIVES STUDIES

- Daily turnover in the U.S. foreign exchange market (spot, forwards, and FX swaps) during April averaged $254 billion, after adjusting for the double reporting of transactions between reporting dealers in the United States. This is a decline of 28 percent from the April 1998 survey. The decline in turnover was 12 percent after removing the effects of changes in exchange rates.
- Daily turnover for the other derivatives markets (FRAs, interest rate swaps, cross currency interest rate swaps, and foreign exchange and interest rate options) averaged $135 billion. This represents a 48 percent increase (a 14 percent annualized growth rate) from the prior survey.

The Foreign Exchange Market Survey

Daily trading volume in the U.S. foreign exchange market averaged $254 billion in April 2001, down 28 percent from the previous survey. This is the first decline since these surveys began.[2]

Several developments contributed to this decline. First, the introduction of the euro eliminated trading in the European currencies it replaced. Second, there was significant consolidation among financial institutions. The number of participating dealers declined to seventy-nine in the 2001 survey from ninety-three in 1998 and one hundred and thirty in 1995. Third, increased trading through electronic brokers has enhanced the market's price discovery process, reducing the ripple effect on turnover of new business. Fourth, some foreign-owned institutions have centralized trading, shifting trading from the United States to their home countries. Several large U.S. institutions also shifted part of their trading operations to London. Despite the overall decline in turnover, several dealers indicated that bid-offer spreads and liquidity were similar to levels at the time of the last survey.

Instruments

The volume of both foreign exchange spot and swap transactions declined about 30 percent from the previous survey. However, transactions in the forward market showed little change.

FX swaps continued to account for the largest share of turnover (45 percent). The data for FX swaps also show that:

- The U.S. dollar was one of the currencies in 98 percent of FX swaps.
- The maturities of foreign exchange swaps have changed little since the last survey. Approximately 68 percent of swaps had maturities of seven days or less, down about 1 percent from 1998. Swaps with maturities between seven days and one year increased about 1 percent to 31 percent.

Spot trades accounted for 41 percent of turnover, down from 42 percent in the previous survey.

Forward transactions rose to 14 percent of the total from 11 percent in the previous survey.

- On average, maturities in the forward market lengthened. Transactions with maturities of seven days or less declined to 40 percent of the total from 50 percent in 1998 while trades with maturities of over seven days to less than a year rose to 59 percent from 48 percent, with transactions over a year accounting for the remainder.

[1]The survey is often also referred to in the industry as the Triennial Survey of Foreign Exchange.

[2]This total is adjusted for the double reporting of transactions between participating dealers in the United States.

- The proportion of forward trades that were designed as non-deliverable forwards increased to 16 percent, up from 8 percent in the previous survey.

Currencies

The U.S. dollar was traded in 93 percent of all transactions, up slightly from 90 percent in the last survey. The euro was the second most actively traded currency, and was one of the currencies in 39 percent of trades. (In the 1998 survey, the German mark was the second most actively traded currency with 35 percent of the total.) The yen remained the third most active currency at 27 percent (up from 24 percent), followed by the Canadian dollar at 8 percent (up from 4 percent), and the Swiss franc at 7 percent (down from 9 percent). Other currencies were involved in 13 percent of transactions, compared with 9 percent in 1998.

- The most actively traded currency pair was the U.S. dollar against the euro. Dollar/euro transactions accounted for 33 percent of total turnover. (In 1998, dollar/mark was the most heavily traded currency pair with 25 percent of the total.) Dollar/yen was the second most active currency pair with 24 percent of turnover (up from 22 percent in 1998).

Market Structure

In addition to the introduction of the euro, the foreign exchange market has experienced a number of significant changes since the 1998 survey.

Trading through all types of electronic trading systems accounted for 71 percent of trading in the spot market.

Of this amount, trading through interdealer, automated order-matching systems (EBS, Reuters 2002) rose to 54 percent of spot turnover, from less than a third in the previous survey.

- Trading through all types of electronic systems together accounted for 79 percent of spot trading in the dollar/euro pair, 62 percent for dollar/yen, and 58 percent for euro/yen.

Dealers reported that 61 percent of their spot, forward, and FX swap transactions were conducted with counterparties outside the United States.

The consolidation of financial institutions led to an increase in the market shares of the largest foreign exchange dealers. The list of the largest dealers, however, varies by instrument, and the lists of the top five and top ten dealers have changed considerably since the last survey.

- The market share of the top ten firms increased to 66 percent from 52 percent. The five largest dealers in spot trading increased their share of turnover to 41 percent from 33 percent in 1998.
- In the forward market, the market shares of the top five and the top ten increased, respectively, to 49 percent from 39 percent and to 69 percent from 59 percent.
- In the foreign exchange swaps market, the top five firms' share of turnover increased to 46 percent from 35 percent. The share of the top ten increased to 68 percent from 58 percent.

The survey asked dealers to assess foreign exchange and derivatives turnover during April in terms of trading patterns and trends.

- Trading during the month was considered normal by 65 percent of survey participants, below normal by 29 percent, and above normal by 6 percent.
- Turnover during the previous six months was considered steady by 62 percent, was seen as increasing by 21 percent, and decreasing by 17 percent.

Note: This reprint presents an abridged version of the original report. It excludes details concerning survey terms and methods, supplementary tables, and charts. Copies of the complete report are available from the Public Information department of the Federal Reserve Bank of New York or from the web site www.newyorkfed.org. To access the global study, please see the Bank of International Settlements website at http://www.bis.org/publ/rpfx02t.pdf.

OVERALL VOLUME TRENDS FOR THE FOREIGN EXCHANGE AND INTEREST RATE DERIVATIVES MARKETS SURVEY

Daily turnover in the foreign exchange and derivatives markets (FRAs, interest rate swaps, cross currency interest rate swaps, and foreign exchange and interest rate options) rose 48 percent from the previous survey to $135 billion after adjusting for the double reporting of trades by participating dealers in the United States. This represented a 14 percent annualized growth rate, a significant decline from the 20 percent growth rate between the 1995 and 1998 surveys.

- Average daily turnover for interest rate swaps was $82 billion, an increase of more than 160 percent since the last survey. Turnover for FRAs was the next largest at $23 billion, an increase of 44 percent since 1998.
- As in 1998, U.S. dollar-denominated contracts and contracts with the dollar on one side accounted for more than 83 percent of turnover in these instruments. The share of dollar-denominated contracts ranged from 81 percent for interest rate swaps to 92 percent for currency swaps.

Trades with local counterparties accounted for 44 percent of the total, down from 55 percent in the 1998 survey. There was, however, considerable variation across the five instruments.

- Counterparties for 77 percent of interest rate options were local.
- Counterparties for FX options, currency swaps, interest rate swaps, and FRAs were more likely to be located outside the United States.

Trading in the derivatives market is more concentrated than it is in the foreign exchange market.

- Seventy-one percent of turnover in these instruments was transacted between reporting dealers, up from 46 percent in 1998. Trades with other financial institutions accounted for 20 percent of turnover in these instruments. Trades with nonfinancial customers represented 8 percent of the total.
- Since the last survey, the proportion of trading of the ten largest dealers has increased for currency swaps, forex options, and interest rate swaps, while declining somewhat for interest rate options and FRAs.

ANNEX I
Survey Terms and Method

1. TURNOVER

a) Turnover is the volume of transactions during April 2001 in U.S. dollar equivalents. The amount of each transaction is reported before the effects of any netting arrangements. In the case of swap transactions, only one leg is reported.

b) Three types of counterparties were covered by the survey:

1) reporting dealers participating in the survey
2) other financial firms, and
3) nonfinancial customers.

Each type of counterparty was broken down into local and cross-border—resulting in a total of six categories for counterparties.

c) Market totals. Transactions between two participating dealers were reported twice, once by each of them. Survey figures for market totals are therefore adjusted to avoid double counting of such trades. Adjusted figures are market totals after adjusting for double reporting by participating dealers. Unadjusted figures are gross totals without adjusting for double reporting. The data in this report are adjusted figures unless otherwise noted.

Since transactions between local reporting dealers were reported twice, the total of local dealer transactions is divided by two for the adjusted total.

d) Average daily turnover was obtained by dividing total volume by twenty trading days. Although there were officially twenty-one business days in the United States during April 2001, Good Friday, April 13, was not counted as a trading day since little trading pwas done.

e) Turnover for non-U.S. dollar transactions was reported in U.S. dollar equivalents using exchange rates at the time of the transactions.

f) Changes in exchange rates affect the comparisons of turnover volumes between surveys. Turnover of non-U.S. dollar transactions were reported in U.S. dollar equivalents using exchange rates at the time of the transaction. As a result, the rise of the dollar against most foreign currencies since the last survey lowered turnover in foreign currency transactions when converted to dollars. (Market turnover, calculated by revaluing 1998 turnover in foreign currencies at 2001 dollar exchange rates, was down about 12 percent, compared with the 28 percent decline in unadjusted dollar terms.)

2. LOCATION

Trade vs. book location. Transactions were reported on the basis of the location of the dealer agreeing to do the transaction. A dealer in New York, for example, might engage in a trade that is booked at a London affiliate. In that case, the trade location is New York and the book location is London. The transaction would be included in the turnover figures in the U.S. survey. If a trader in London entered into a trade, but the trader's firm booked the trade in its New York affiliate, the transaction would be included in the institution's survey report to the Bank of England.

3. PARTICIPATING FIRMS

A total of seventy-nine dealers—sixty-eight banks and eleven nonbanks—participated in the foreign exchange part of the survey. (A total of ninety-three firms participated in 1998 and one hundred and thirty participated in 1995.) A total of fifty-four dealers—forty-eight banks and six nonbanks—participated in the foreign exchange and interest rate derivatives part of the survey. (In 1998, sixty participated, and in 1995, fifty-one participated.) The dealers included both U.S. institutions as well as foreign institutions with dealing operations in the United States (Annex II). As in 1998, all of the largest dealers participated.

Dealers were asked to participate based on several criteria, including participation in the last survey, the firm's outstanding contracts reported in bank call reports, or, in the case of nonbanks, outstanding contracts reported in published financial statements.

Data provided on the amount of trading through electronic systems were derived from the reports of dealers. As in past U.S. surveys, foreign exchange market brokers were also surveyed. These data cannot be published, however, in view of the very small number of participants. Only two voice brokers participated in the survey this year, down from nine in 1998, as mergers and industry consolidation reduced the number of participants in this business. Electronic brokers participating numbered only two as well.

4. INSTRUMENT DEFINITIONS

Foreign exchange spot: Single purchase or sale of currency for settlement not more than two business days after the deal is contracted.

Foreign exchange forward (outright forward): Currency trade to be settled at an agreed time in the future—more than two business days.

Non-deliverable forwards: Forward transaction where settlement is made by a cash payment reflecting the market value of the contract instead of the exchange of currencies.

Foreign exchange swap: Simultaneous exchange of two currencies on a specific date at a rate agreed at the time of the contract, and a reverse exchange of the same two currencies at a date further in the future at a rate agreed at the time of the contract. Short-term swaps carried out as "tomorrow/next day" transactions are included in this category.

Currency swap: A contract that commits two counterparties to exchange streams of interest payments in different currencies for an agreed period of time and to exchange principal amounts in the respective currencies at an agreed exchange rate at maturity.

Currency option: Option contract that gives the right to buy (call option) or sell (put) a currency with another currency at a specified exchange rate during a specified period. This category includes currency warrants and multi-currency swaptions.

Forward rate agreement: Interest rate forward contract in which the rate to be paid or received on a specific obligation for a set period of time, beginning at some time in the future, is determined.

Interest rate swap: Agreement to exchange periodic payments related to interest rates on a single currency. The swap can be fixed for floating, or floating for floating, based on different indices. This group includes those swaps whose notional principal is amortized according to a fixed schedule independent of interest rates.

Interest rate option: Option contract that conveys the right to pay or receive a specific interest rate on a predetermined principal for a set period of time.

Interest rate cap: Option contract that pays the difference between a floating interest rate and the cap rate.

Interest rate floor: Option contract that pays the difference between the floor rate and a floating interest rate.

Interest rate collar: Combination of cap and floor.

Interest rate swaption: Option to enter into an interest rate swap contract.

Interest rate warrant: Long-dated (more than one year) interest rate option.

Bond option: Option contract that conveys the right to purchase or sell a fixed income security. The survey does not, however, include options embedded in bonds or notes.

ANNEX II: Foreign Exchange Survey Participants

Foreign Exchange Dealers

NONCOMMERCIAL BANKS

AIG International
American Express Bank Limited
Bear Stearns
General Re Financial Products
Goldman Sachs
ING Barings (US Capital Markets)
Lehman Brothers
Merrill Lynch
Morgan Stanley Dean Witter
Prudential
Salomon Smith Barney Holdings

COMMERCIAL BANKS

ABN AMRO North America
Allfirst Financial Incorporated
Asahi Bank
Banca Commericale Italiana
Banca di Roma
Banca Monte dei Paschi
Banca Nazionale del Lavoro
Banco Bilbao Vizcaya Argentaria
Banco Santander Central Hispano
Bank Julius Baer and Company
Bank Leumi le-Israel Corporation
Bank of America Corporation
Bank of Montreal
Bank of New York
Bank of Tokyo-Mitsubishi Limited
Bank One Corporation
Barclays Capital
BNP Paribas
Canadian Imperial Bank
Chase Manhattan
Christiania Bank OG
Citigroup
Comerica Bank
Commercial Bank of New York
Commerzbank AG
Commonwealth Bank of Australia
Credit Agricole Securities
Crédit Lyonnais
Credit Suisse Group
Dai-Ichi Kangyo Bank
Den Danske Bank AG
Den Norske Bank ASA
Deutsche Bank AG
Dresdner Bank AG
Erste Bank
Firstar Corp
Fuji Bank Limited
Huntington Bancshares
Imperial Bank
Industrial Bank of Japan
Keycorp
Marshall & Ilsley Corporation
MBNA Corporation
Mellon Financial Corporation
Merita Bank PLC
Natexis Banques Populaires
National City Bank
Norddeutsche Landesbank Girozentrale
Norinchukin Bank
Northern Trust Corporation
Pacific Century Financial Corporation
People's Mutual Holdings
Rabobank Nederland
Sanwa Bank Limited
Skandinaviska Enskilda Banken
Société Générale
Standard Charter Bank
State Street Bank and Trust Company
Sumitomo Mitsui Banking Corporation
Sun Trust Bank
Svenska Handelsbanken AB
Tokai Bank
U.S. Bank
UBS AG
UniCredito Italiano
Unionbancal Corp
Wachovia Bank
Wells Fargo

Foreign Exchange Survey Participants

Derivatives Dealers

NON-COMMERCIAL BANKS

AIG International Incorporated
Bear Stearns
General Re Financial Products
Goldman Sachs
Merrill Lynch
Morgan Stanley Dean Witter
Salomon Smith Barney Holdings

COMMERCIAL BANKS

ABN AMRO North America
Allfirst Financial Incorporated
Banca di Roma
Banca Monte dei Paschi
Banco Bilboa Vizcaya Argentaria
Bank of America Corporation
Bank of Montreal
Bank of New York
Bank of Tokyo-Mitsubishi Limited
Bank One Corporation
Barclays Capital
BB and T Corporation
BNP Paribas
Chase Manhattan Corp
Citi Group
Comerica Bank
Commerzbank AG
Compass Bankshares
Credit Agricole Securities
Crédit Lyonnais
Credit Suisse Group
Dai-Ichi Kangyo Bank
Den Danske Bank AG
Deutsche Bank AG
Dresdner Bank AG
Erste Bank
Firstar Corporation
Fuji Bank Limited
Huntington Bancshares
Industrial Bank of Japan
Keycorp
Mellon Financial Corporation
Merita Bank PLC
National City Bank
Norddeutsche Landesbank Girozentrale
Rabobank Nederland
Sanwa Bank Limited
Société Générale
State Street Bank and Trust Company
Sumitomo Mitsui Banking Corporation
Sun Trust Bank
Svenska Handelsbanken AB
UBS AG
Unionbancal Corporation
Wachovia Bank
Wells Fargo