

**The
Foreign Exchange
and
Interest Rate Derivatives
Markets:**

**Turnover in the United States,
April 2022**

Federal Reserve Bank of New York

The Foreign Exchange and Interest Rate Derivatives Markets: Turnover in the United States, April 2022

Background

The Federal Reserve Bank of New York together with over fifty other central banks conducted a survey of turnover in the over-the-counter (OTC) foreign exchange and interest rate derivatives markets for April 2022. This worldwide, cooperative effort is undertaken every three years and is coordinated by the Bank for International Settlements (BIS).

The “triennial survey” is a comprehensive source of information on the size and structure of the OTC foreign exchange and derivatives markets. To measure the OTC markets, the dealers that make markets in foreign exchange and interest rate derivatives reported trading volumes for April 2022 to the central banks in the countries where they are located. The participants reported separately the volume of trading they conduct with each other to permit adjustments for double reporting. The central banks then compiled national aggregates from the dealers’ data and the BIS compiled global totals from the central banks’ national data.¹ (See Annex I for a complete description of survey terms and methods.)

In 2022, a total of nineteen dealers in the United States participated in the foreign exchange part of the survey and seventeen in the interest rate derivatives section, same as the number of participating institutions in 2019. Participating dealers were commercial banks, U.S. offices of foreign banking organizations, and securities brokers/dealers. These firms were U.S.-owned institutions as well as foreign-owned institutions with dealing operations in the United States. (See Annex II for a list of participating dealers.)

This report discusses turnover in foreign exchange (FX) spot, forwards, FX swaps, FX options, as well as currency swaps as the foreign exchange part of the survey. Trading in forward rate agreements (FRAs), overnight index swaps, other swaps, and interest rate options are then discussed together as the single-currency interest rate derivatives part of the survey.

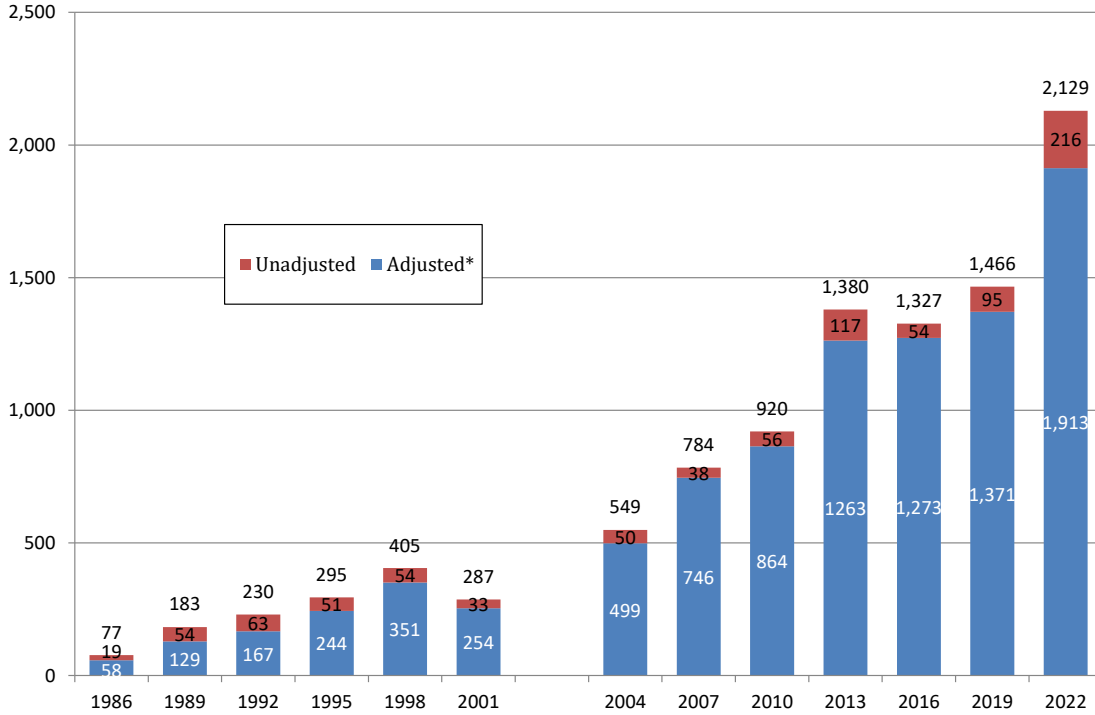
Instruments

After adjusting for double reporting of trades between participating dealers, daily foreign exchange turnover in the United States (spot, forwards, FX swaps, currency swaps, and FX options) averaged \$1,913 billion in April 2022, an increase of 40 percent from the 2019 survey. (See Chart 1)

¹ Visit <https://www.bis.org/statistics/rpfx22.htm> for the BIS report on global turnover and <https://www.newyorkfed.org/markets/international-market-operations/foreign-exchange-operations> for US turnover.

Chart 1 Daily U.S. Foreign Exchange Turnover

In \$ billions equivalent



1986 to 2001 Includes spot, forwards and FX swaps.

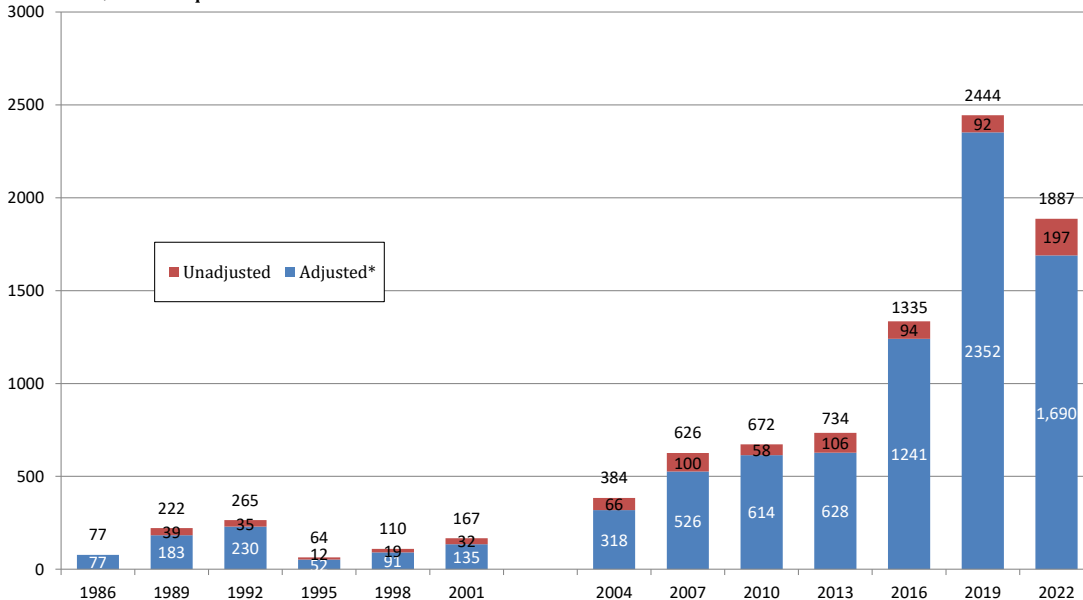
2004 to 2022 Includes spot, forwards, FX swaps, currency swaps, and FX options.

* Adjusted for double reporting by participating dealers

Daily turnover for the other derivatives markets covered by the survey (FRAs, overnight index swaps, other swaps, interest rate options, and other interest rate derivative products) averaged \$1,690 billion, a decrease of 28 percent, spread across the majority of reporting institutions.

Chart 2 Daily U.S. Interest Rate Derivatives Turnover

In \$ billions equivalent



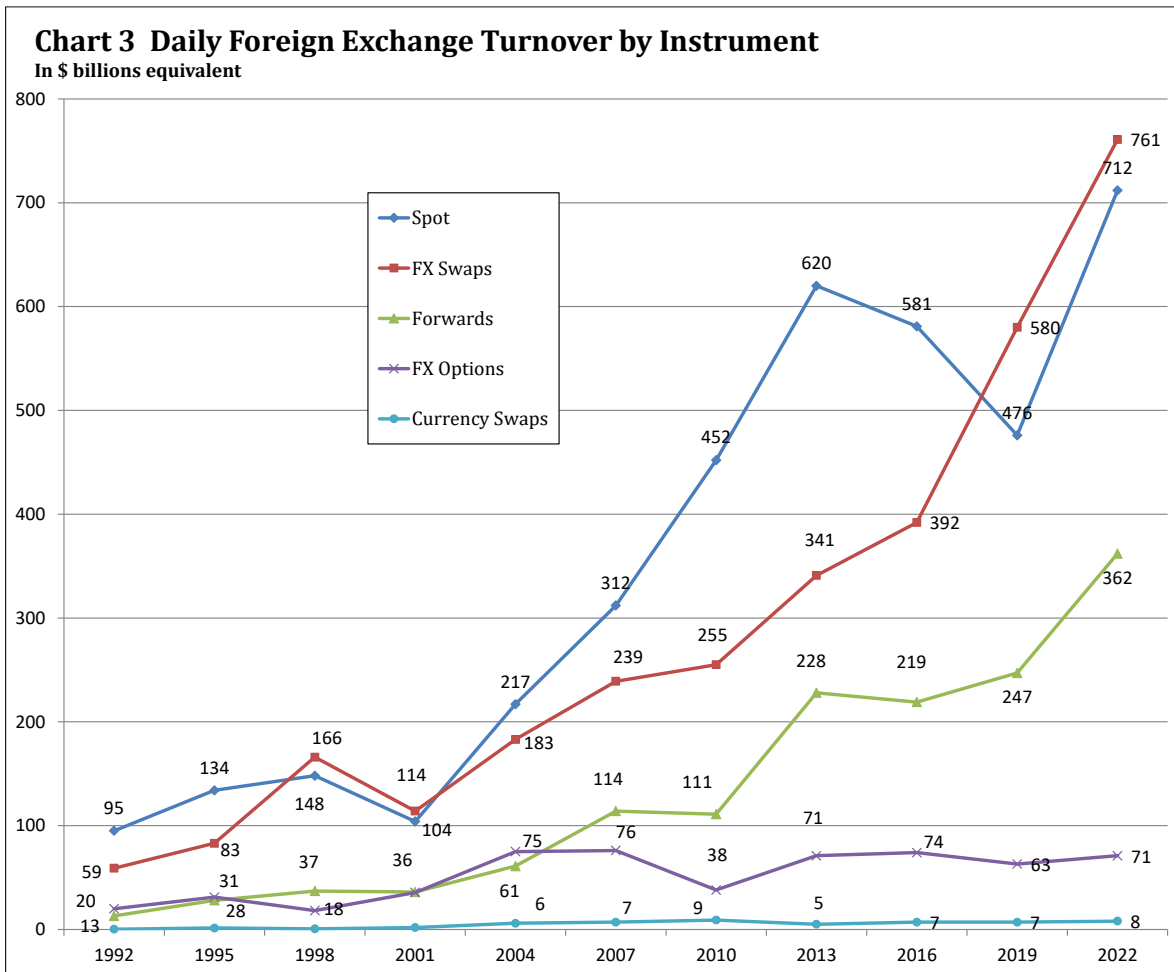
1986 to 2001 Includes currency swaps, currency options, FRA's, interest rate swaps and options.

2004 to 2022 Includes FRA's, interest rate swaps and options.

* Adjusted for double reporting by participating dealers

**The U.S. Foreign
Exchange
Market**

Spot turnover increased 50 percent while outright forwards increased 47 percent. FX swaps increased 31 percent and FX options increased 13 percent. Turnover in currency swaps increased 21 percent compared to the 2019 survey. Currency swaps make up less than 1 percent of total foreign exchange turnover. (See Chart 3)

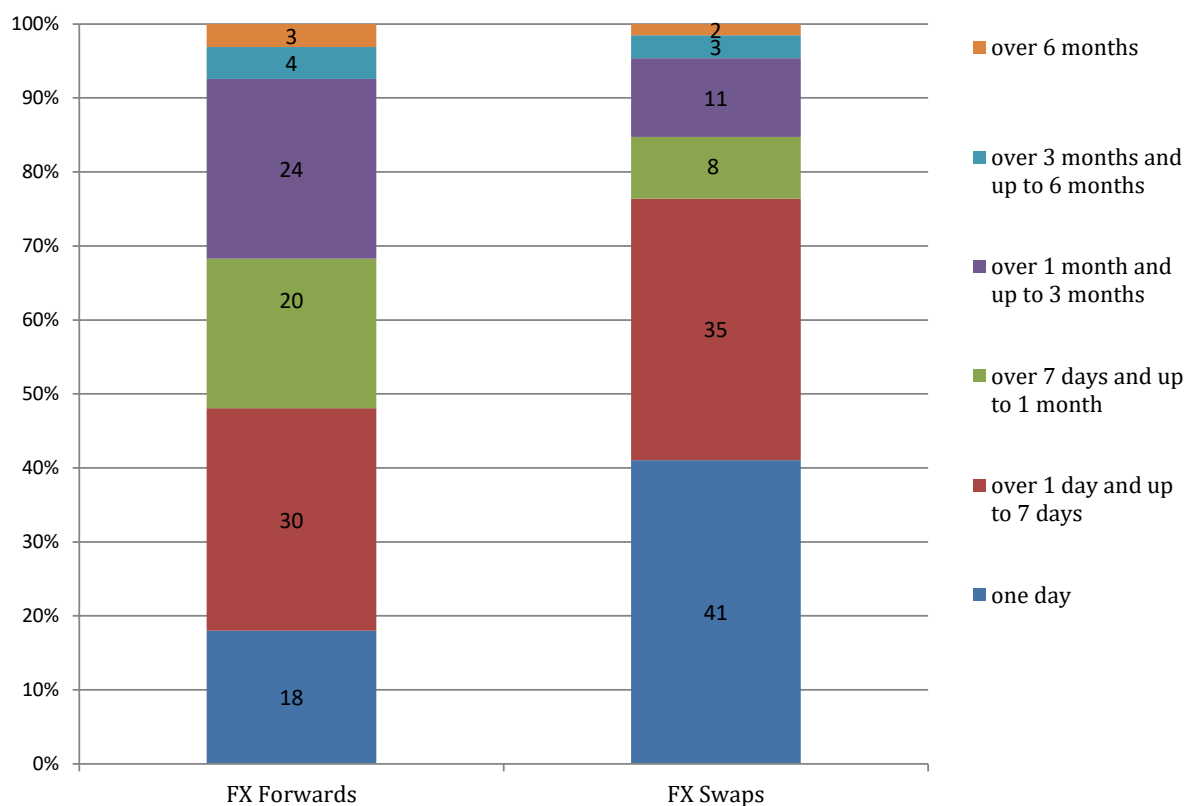


- ❑ Spot trading represented 37 percent of total foreign exchange turnover, up slightly from 35 percent in 2019.
- ❑ FX swaps trading represented 40 percent of turnover, down from 42 percent in 2019.
- ❑ Outright forward transactions represented 19 percent of turnover versus 18 percent in 2019. Participating firms reported \$75 billion daily average turnover in non-deliverable forward contracts or 21 percent of the total volume in forwards.
- ❑ FX options trading represented 4 percent of total foreign exchange turnover compared to 5 percent in 2019.

Average Maturity

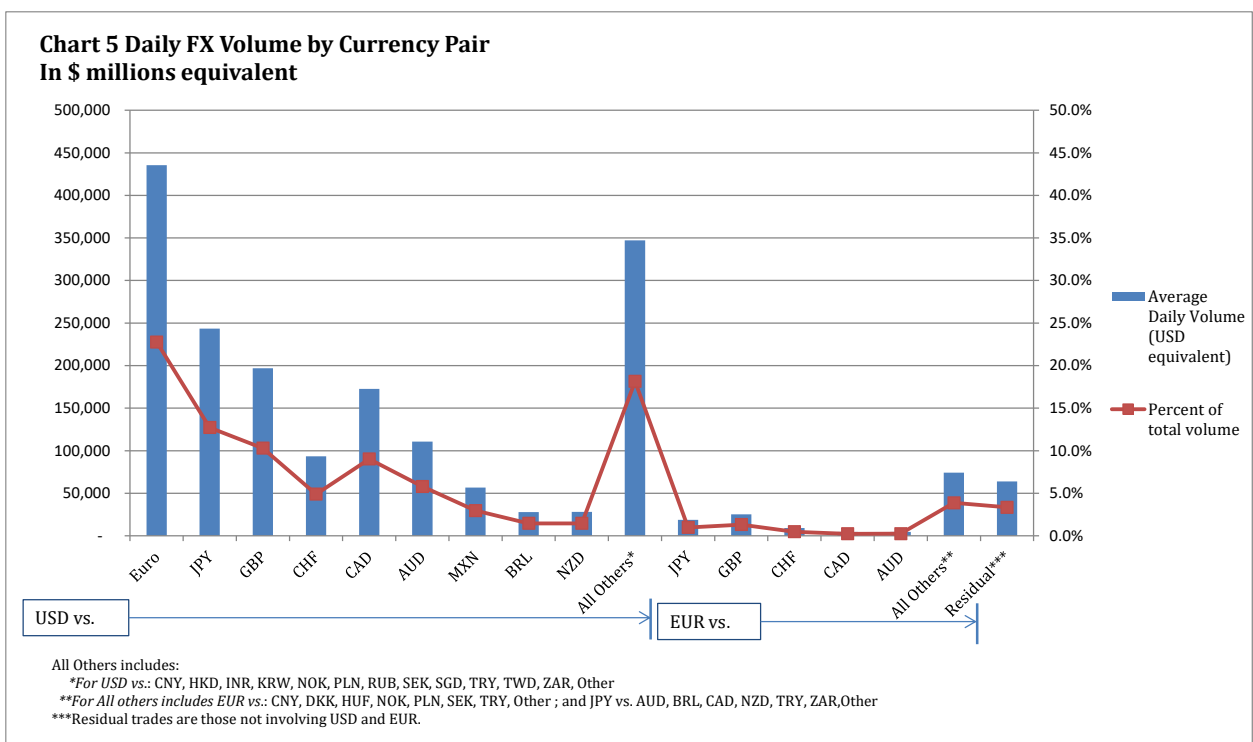
- FX swaps and forwards were reported by original term to maturity, with six categories of maturity buckets (one day, over one day and up to seven days, over seven days and up to one month, over one month and up to three months, over three months and up to six months, and over six months)
- Over 92 percent of the FX forward transactions were reported as due in less than 3-months. Specifically, 18% were in ‘one day’, 30 percent were reported in “over one day and up to seven days,” 20 percent were reported in “over seven days and up to one month,” and 24 percent were reported in “over one month and up to three months.” (See Chart 4)
- Over 95 percent of FX swaps reported were spread across the same four short-term maturity buckets, with 76% maturing in 7 days or less. Eight percent were reported in “over seven days and up to one month,” and 11 percent were reported in “over one month and up to three months.” (See Chart 4)

Chart 4 Maturity Distribution of FX Forwards and Swaps In Percent



Currencies

- ❑ The U.S. dollar was traded in nearly 90 percent of all transactions, similar to the last survey.
- ❑ The euro was the second most actively traded currency and was on one side of 30 percent of all trades in the U.S. market, down from 36 percent in April 2019.
- ❑ The dollar/euro pair accounted for the largest share of U.S. market turnover at 23 percent, down from 27 percent in April 2019.
- ❑ The dollar/yen currency pair accounted for 13 percent of U.S. market turnover, up from 11 percent in 2019. (See Chart 5)

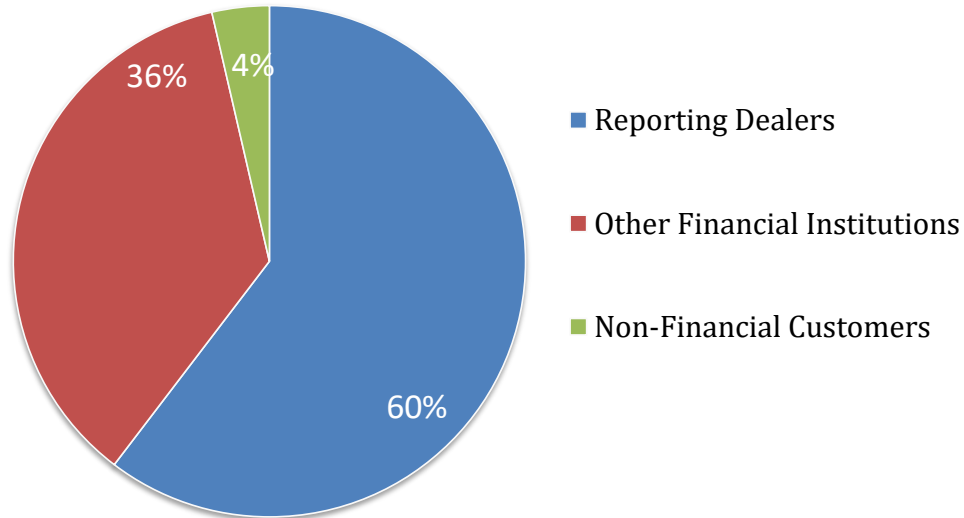


Market Structure

Participating dealers also reported their trading activity according to type and location of counterparties.

- ❑ Counterparty Type: More than half of all reported trades were undertaken with reporting dealers at 60 percent, while 36 percent were conducted with other financial institutions and the remaining 4 percent were with non-financial customers. (See Chart 6)

**Chart 6 Foreign Exchange Trading by Counterparty
Percent of Total**



- ❑ Counterparty Location: Highlighting the international nature of foreign exchange trading, 70 percent of FX turnover was conducted with market participants outside the United States, down slightly from 75 percent in 2019.

Execution Method

Survey participants were also asked to categorize reported FX turnover during April 2022 by four basic categories of execution method².

- ❑ Voice-Direct
- ❑ Voice-Indirect
- ❑ Electronic-Direct
- ❑ Electronic-Indirect

To continue to capture turnover on different types of electronic platforms, the latter two categories are further broken down into additional sub-categories; single-bank proprietary trading systems, other direct electronic means, anonymous venues, and disclosed venues.

For spot turnover, 65 percent was conducted via electronic methods (50 percent via electronic-direct and 15 percent via electronic-indirect methods). Voice-direct accounted for 31 percent of reported turnover.

² Execution Method percentages based on unadjusted data.

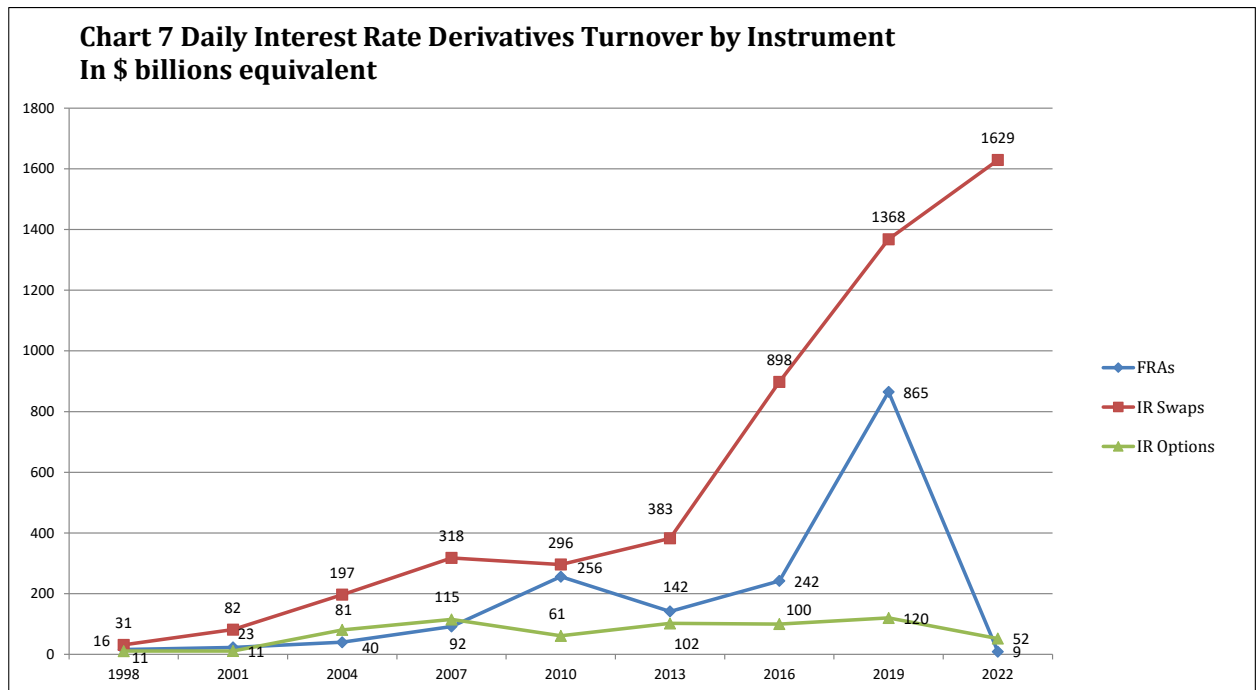
For FX swaps turnover, 59 percent was conducted via electronic methods (45 percent via electronic-direct and 14 percent via electronic-indirect methods). Voice methods accounted for 23 percent of FX swaps turnover.

Execution of forwards turnover was 64 percent electronic (electronic-direct was 38 percent and electronic-indirect was 26 percent). Voice methods accounted for 25 percent of forwards activity.

**Single
Currency
Interest Rate
Derivatives
Markets**

Daily turnover in single-currency interest rate derivatives markets decreased 28 percent since the prior survey. Turnover in these instruments, including forward rate agreements (FRAs), interest rate swaps, and interest rate options averaged \$1,690 billion per day in the United States during April 2022. (See Chart 2)

- ❑ Daily turnover for interest rate swaps was \$1,629 billion, an increase of 19 percent since the last survey. (See Chart 7)
- ❑ Turnover in FRAs decreased by 99 percent to \$9 billion per day, down \$856 billion since the 2019 survey. Turnover in interest rate options decreased to \$52 billion per day from \$120 billion three years ago.

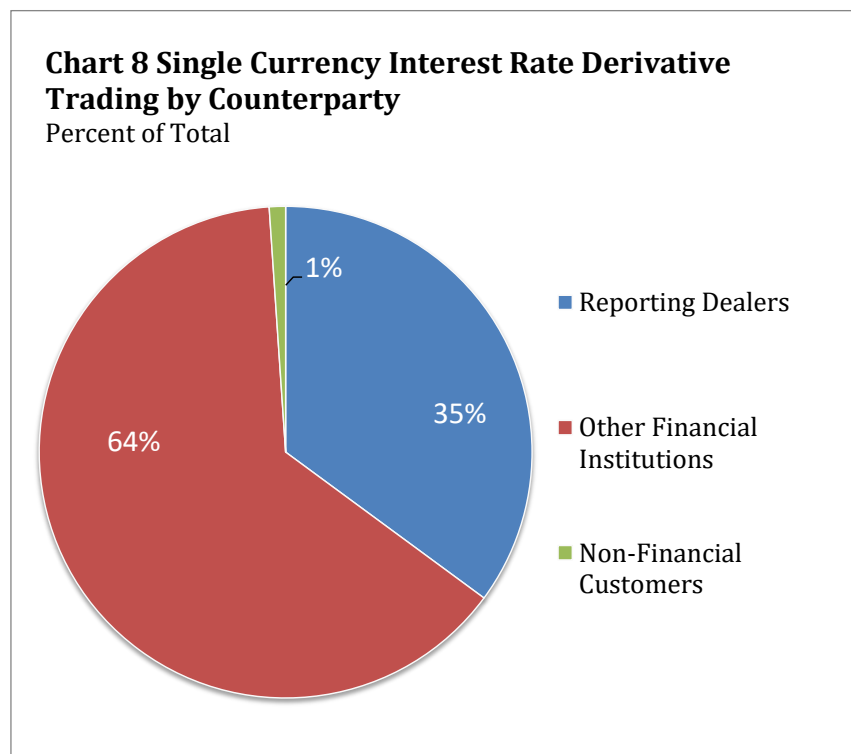


U.S.-dollar-denominated contracts accounted for 97 percent of the month's turnover in these instruments, up from 91 percent in 2019.

- ❑ Trading in the Euro, Canadian dollar, and Mexican peso combined for 3 percent of the total.

There was variability across the three instruments in terms of location and type of counterparty.

- ❑ Counterparty location: For all contracts, 73 percent of trading during April was conducted with market participation outside the United States. Among instruments, this percentage varied between 43 percent for interest rate options, 74 percent for interest rate swaps, and 81 percent for FRAs.
- ❑ Counterparty type: Similar to 2019, the 2022 survey showed that a significant majority of all reported trades (64 percent) were with other financial institutions, with reporting dealers making up 35 percent and non-financial customers making up the remaining 1 percent. (See Chart 8)



Additional Information:
Recent Trend in Turnover

Since the survey only covers one month every three years, dealers are also asked about the trading patterns and trends of their business. The responses help to assess whether the survey month's turnover should be considered normal and whether turnover had been increasing or decreasing over the previous six months.

- ❑ Most dealers considered turnover during the month as normal.
- ❑ Most dealers viewed turnover business as steady.

Survey
Terms and
Methods

1. Turnover

- a) *Turnover* is the volume of transactions during April 2022 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) The survey covered three types of counterparties:
- 1) *reporting dealers* participating in the survey,
 - 2) *other financial institutions*, and
 - 3) *non-financial customers*.

Each type of counterparty was further identified as either *local* or *cross-border*, resulting in a total of six categories for counterparties.

Other financial institutions for FX turnover only is further broken down into six sub-categories: *non-reporting banks, institutional investors, hedge funds and proprietary trading firms, official sector financial institutions, others*, and *undistributed*.

- c) *Market totals*. Transactions between two participating dealers were reported twice, once by each dealer. Survey figures for market totals are therefore adjusted to avoid double reporting 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-one trading days in April 2022.
- e) Turnover for *non-U.S.-dollar transactions* was reported in U.S. dollar equivalents using exchange rates at the time of the transactions.

2. Location

Trade versus book location. Transactions were reported on the basis of the location of the dealer agreeing to conduct the transaction. For example, a dealer in New York might engage in a trade that is booked at a London affiliate. In this case, the trade location is New York and the book location is London. This 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 nineteen dealers participated in the foreign exchange part of the survey (see Annex II), same as figures in 2019. For the single currency interest rate derivatives part of the survey a total of seventeen dealers participated, also the same in 2019. The dealers included U.S. institutions as well as foreign institutions with dealing operations in the United States. Participation is voluntary.

Dealers were asked to participate based on several criteria, including participation in the last BIS triennial survey or in the Foreign Exchange Committee's semi-annual survey; the firm's outstanding contracts reported in bank call reports; or, in the case of non-banks, outstanding contracts reported in published financial statements.

4. Instrument definitions

In each risk category, OTC derivatives were broken down into three types of plain-vanilla instruments (forwards, swaps, and options). Plain-vanilla instruments are those traded in generally liquid markets using standardized contracts and market conventions. If a transaction comprised several plain-vanilla components, dealers were asked to report each one separately. Foreign exchange spot and OTC derivatives transactions should be defined as follows:

Spot transaction

Single outright transaction involving the exchange of two currencies at a rate agreed upon on the date of the contract for value or delivery (cash settlement) within two business days. The spot legs of swaps do not belong to spot transactions but are to be reported as swap transactions even when they are for settlement within two days (that is, spot transactions should exclude "tomorrow/next-day" transactions).

Outright forward

Transaction involving the exchange of two currencies at a rate agreed upon on the date of the contract for value or delivery (cash settlement) at some time in the future (more than two business days later). This category also includes forward foreign exchange agreement transactions, non-deliverable forwards, and other forward contracts for differences.

Foreign exchange swap

Transaction involving the actual exchange of two currencies (principal amount only) on a specific date at a rate agreed upon at the time of the conclusion of the contract (the short leg), and a reverse exchange of the same two currencies at a date further in the future at a rate (generally different from the rate applied to the short leg) agreed upon at the time of the contract (the long leg). Both spot/forward and forward/forward swaps should be included. For *turnover*, only the forward leg should be reported as such. The spot leg should not be reported at all, that is, neither as spot nor as foreign exchange swap transactions. Short-term swaps carried out as “tomorrow/next-day” transactions should also be included in this category.

Currency swap

Contract that commits two counterparties to exchange streams of interest payments in different currencies for an agreed-upon period of time and to exchange principal amounts in different currencies at an agreed-upon exchange rate at maturity.

Currency option

Option contract that gives the right to buy or sell a currency with another currency at a specified exchange rate during a specified period. This category also includes exotic foreign exchange options such as average rate options and barrier options.

Currency swaption

OTC option to enter into a currency swap contract.

Currency warrant

OTC option; long-dated (over one year) currency option.

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 at contract initiation.

Interest rate swap

Agreement to exchange periodic payments related to interest rates on a single currency; 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 gives the right to pay or receive a specific interest rate on a predetermined principal for a set period of time.

Interest rate cap

OTC option that pays the difference between a floating interest rate and the cap rate.

Interest rate floor

OTC option that pays the difference between the floor rate and a floating interest rate.

Interest rate collar

Combination of cap and floor.

Interest rate corridor

1) A combination of two caps, one purchased by a borrower at a set strike and the other sold by the borrower at a higher strike to, in effect, offset part of the premium of the first cap. 2) A collar on a swap created with two swaptions – the structure and participation interval is determined by the strikes and types of swaptions. 3) A digital knockout option with two barriers bracketing the current level of a long-term interest rate.

Interest rate swaption

OTC option to enter into an interest rate swap contract, purchasing the right to pay or receive a certain fixed rate.

Interest rate warrant

OTC option; long-dated (over one year) interest rate option.

Forward contracts for differences (including non-deliverable forwards)

Contracts in which only the difference between the contracted forward outright rate and the prevailing spot rate is settled at maturity.

Turnover Survey Participants: Foreign Exchange Dealers

Bank of America
Bank of Montreal
The Bank of New York Mellon
Barclays Capital
BNP Paribas
Citigroup
Crédit Agricole Corporate and Investment Bank
Credit Suisse
Deutsche Bank AG
Goldman Sachs & Co.
HSBC Bank USA
JP Morgan Chase Bank
Morgan Stanley
Société Générale
Standard Chartered
State Street Corporation
Sumitomo Mitsui Banking Corporation
UBS Bank
Wells Fargo Bank N.A.

**Turnover Survey Participants:
Interest Rate Derivatives Dealers**

Bank of Montreal
The Bank of New York Mellon
Barclays Capital
BNP Paribas
Citigroup
Crédit Agricole Corporate and Investment Bank
Credit Suisse
Deutsche Bank AG
Goldman Sachs & Co.
HSBC Bank USA
JP Morgan Chase Bank
Morgan Stanley
Société Générale
Standard Chartered
Sumitomo Mitsui Banking Corporation
UBS Bank
Wells Fargo Bank N.A.