Michael R King
*michael.king@bis.org*

Carlos Mallo
*carlos.mallo@bis.org*

# A user's guide to the Triennial Central Bank Survey of foreign exchange market activity[1]

*This article provides an overview of the foreign exchange components of the Triennial Central Bank Survey. It highlights key dimensions of this dataset and methodological issues that are important to interpret it correctly. It also compares the methodology of the Triennial to that of more frequent surveys from regional foreign exchange committees.*

*JEL classification: F31, G12, G15, C42, C82*.

In April of this year, the BIS coordinated the eighth Triennial Central Bank Survey of foreign exchange market activity ("the Triennial").[2] The Triennial has been conducted every three years since April 1989, and provides the most comprehensive and internationally consistent information on the size and structure of global over-the-counter (OTC) foreign exchange markets.[3]

This article provides a user's guide to the Triennial to encourage broader use by market participants, policymakers and academics. While the headline figures for daily average turnover in foreign exchange markets are widely reported, the underlying data remain largely unexplored. This is partly due to the dataset's limited user-friendliness, as up to now the statistics were available only as separate data files for each survey. Beginning with the 2010 Triennial, however, the data since 1995 have been aggregated into a single database and will soon be downloadable from the BIS website. A second obstacle has been the complex structure of the data. This user's guide provides an overview of the key features of the statistics to facilitate their use.

The results of the 2010 survey and more complete detail on the methodology are available on the BIS website at www.bis.org/publ/rpfxf10t.htm.

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[2] Since 1995, the Triennial has also reported on activity in OTC derivatives markets. This article only discusses the foreign exchange instruments.

[3] OTC markets are those in which buyers and sellers transact through a telephone or computer network, rather than through an exchange.

## Key dimensions of the Triennial data

The Triennial captures many facets of FX markets

Table 1 provides an overview of the Triennial, highlighting key changes in methodology and coverage over the years. The early focus was on expanding the geographical coverage to include all major trading centres. Germany, for example, did not participate in the original survey but joined in 1992. While, in addition to the spot market, the first two surveys covered exchange-traded products, the focus since 1995 has been on the fast-growing but opaque OTC derivatives markets, with data on exchange-traded products no longer reported from 1998 onwards due to their availability from commercial providers. In terms of methodology, since the first survey efforts have been made to improve the adjustment for double-counting of trades between reporting dealers (ie inter-dealer trades). Since 2001, the Triennial has included more currency pairs. In 2004, the number of banks surveyed declined and the reporting basis changed from where the trade is booked to where it is arranged (eg the sales desk).

### *Data collected*

Data are collected on turnover and amounts outstanding …

The Triennial collects data on: (i) foreign exchange *turnover* measured in notional amounts; and (ii) notional amounts *outstanding* and gross market values of foreign exchange instruments (Table 2).[4] For historical reasons, turnover data are collected in April, and amounts outstanding at the end of

**Overview of Triennial surveys from 1989 to 2010**

| Year of survey | Average daily FX turnover at constant rates (USD billions) | Number of countries participating (and reporting dealers) | Key changes in methodology and coverage |
|---|---|---|---|
| 1989[1] | 655 | 21 (1,089) | Country reports were not fully homogeneous. |
| 1992 | 890 | 26 (2,496) | Greater granularity for counterparty types and locations to eliminate double-counting. More currencies covered. |
| 1995 | 1,165 | 26 (2,414) | Survey expanded to collect data on turnover of currency swaps and options, and amounts outstanding for OTC derivatives. |
| 1998 | 1,705 | 43 (3,100) | Dropped coverage of exchange-traded products. Amounts outstanding reported on worldwide consolidated basis. |
| 2001 | 1,505 | 48 (2,530) | Increased coverage of emerging market currencies. |
| 2004 | 2,040 | 52 (1,200) | Clarified the concept of reporting dealers. Location based on sales desk. Reporting threshold increased, reducing number of reporting dealers. |
| 2007 | 3,370 | 54 (1,260) | Simplified template for execution method to allow adjustment for double-counting of inter-dealer activity. |
| 2010 | 3,981 | 53 (1,309) | Dropped the distinction between "traditional foreign exchange markets" and other FX instruments. |

[1] While the Triennial formally began in 1986, Canada, Japan, the United Kingdom and United States collected and reported data on turnover in 1986. These data made limited adjustment for double-counting, but were highlighted in the discussion of the 1989 Triennial.

Table 1

[4] Due to the nature of foreign exchange spot transactions, only turnover data are available.

| Key dimensions of the FX part of the Triennial survey | | |
|---|---|---|
| Dimension | Turnover | Amounts outstanding |
| Data collected | Turnover in gross notional amounts during April. | Gross notional amounts and gross market values outstanding at end-June. |
| Instruments | Spot, outright forwards, FX swaps, currency options, currency swaps and other foreign exchange products. | Outright forwards, FX swaps, currency options, currency swaps and other foreign exchange products. |
| Counterparties | 1. Reporting dealers: financial institutions that are active in foreign exchange markets and participate in the Triennial survey.<br>2. Other financial institutions: banks not classified as reporting dealers, mutual funds, pension funds, hedge funds, insurance companies, central counterparties, central banks or online retail platforms.<br>3. Non-financial customers: corporations and governments. | |
| Reporting basis | Locational basis: each reporting dealer reports on its activity to the local monetary authority. As of 2004, based on the sales desk. | Consolidated basis: each bank reports in the country where it is headquartered, aggregates across all its branches and (majority-owned) subsidiaries worldwide and nets out deals between affiliates. |
| Currencies | Broken down by 41 individual currencies and 28 bilateral currency pairs. | Broken down by 33 individual currencies (not bilateral currency pairs). |
| Maturities | Transactions in outright forwards and FX swaps are broken down by original maturity: seven days or less; over seven days and up to one year; over one year. | Amounts outstanding in outright forwards and FX swaps broken down by remaining maturity: one year or less; over one year and up to five years; over five years. |
| Execution methods | Since 2007, broken down for the following categories:<br>1. Interbank direct<br>2. Customer direct<br>3. Voice broker<br>4. Electronic broker<br>5. Multibank trading system<br>6. Single-bank trading system | Not applicable |
| Additional information | Reporting central banks are asked to provide:<br>1. The number of participating institutions<br>2. The estimated percentage coverage of their survey for local FX market activity<br>3. The number of institutions accounting for 75% of the reported totals | |

Table 2

June. All figures are reported in US dollar equivalents. Non-dollar amounts are converted into US dollars using the exchange rate prevailing on the date of the trade for turnover, and using exchange rates at the date of the report for amounts outstanding.

*Turnover* data provide a measure of market activity, as well as an indication of market liquidity. Turnover is defined as the aggregate gross notional amount of all transactions struck during the calendar month of April (chosen to represent a typical month for foreign exchange market activity) regardless of whether delivery or settlement was made during that month. Daily average turnover is computed by dividing aggregate monthly turnover by the

number of trading days in April for each country.[5] Each transaction is recorded once, and offsetting contracts are not netted. There is no distinction between sales and purchases. Direct cross-currency transactions (eg Japanese yen for euros) are counted as single transactions; however, cross-currency transactions that pass through the US dollar (eg Swiss francs for Australian dollars) are recorded as two separate deals against the vehicle currency.

Data on *amounts outstanding* serve as a benchmark to assess the representativeness of the more frequent but less comprehensive semiannual survey on OTC derivatives markets. Banks report two types of data. *Nominal (or notional) amounts* outstanding give a measure of market size. *Gross market values*, defined as the sums of the absolute replacement values of all open contracts, provide a proxy of the potential risk transfer in these instruments. The format corresponds to the regular reports on OTC derivatives markets that began in 1998 for G10 countries. Data on amounts outstanding are collected on a *consolidated* basis at the end of June in the survey year. Reporting dealers with global operations aggregate across all international branches and (majority-owned) subsidiaries and report to the monetary authority where the dealer is headquartered. Deals between affiliates are netted out (ie offsetting of positions between two counterparties).

*Instruments*

The Triennial distinguishes six foreign exchange instruments:

… for six different instruments …

*Spot transaction*s are single outright transactions involving the exchange of two currencies at a rate agreed on the date of the contract for cash settlement, typically within two business days.

An o*utright forward* is an agreement between two counterparties to exchange two currencies at a rate agreed on the date of the contract for cash settlement on an agreed future date which is more than two business days later.[6] This category also includes non-deliverable forwards (ie forward foreign exchange contracts that do not require physical delivery of a non-convertible currency) and other contracts for differences (ie contracts where only the net market value is exchanged).

A *foreign exchange swap* is a pair of currency transactions (one purchase, one sale) for two different value dates. The exchange rate for both transactions is agreed at the outset of the contract. An FX swap may involve an exchange of spot against a forward, or an exchange of two forwards with different dates (eg three-month forward versus six-month forward). FX swaps are arranged as a single transaction with a single counterparty. Because a customer usually contracts to purchase and sell the same amount of currency at the specified rates, there is no market risk (open position) over the life of the FX swap.

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[5] As a consequence, a comparison of turnover data across time and countries is not distorted by the different number of trading days in different countries in April due to national holidays.

[6] The forward exchange rate is based on the interest rate differential between the two currencies, with the price quoted in terms of forward points relative to the spot rate. If forward points are added to the spot rate, the forward rate is at a premium to the spot rate. If forward points are subtracted, the forward rate is at a discount to spot.

*Currency swaps* are contracts committing two counterparties to exchange streams of interest payments denominated in different currencies for an agreed period of time. They typically require an exchange of principal amounts denominated in different currencies at a pre-agreed exchange rate at inception and at maturity of the contract. Interest payments are then on a fixed, floating or zero coupon basis. In effect, a currency swap allows a borrower or lender to swap a loan in one currency for a loan in another without incurring currency risk (assuming the swap is held until maturity).[7] A currency swap is essentially a spot transaction combined with a series of outright forward transactions.

*Currency options* are contracts giving the holder the right (but not the obligation) to buy or sell a currency at an agreed exchange rate during a specified period.

Finally, *other foreign exchange products* cover any instrument where the transaction is highly leveraged and/or the notional amount is variable and where decomposition into the instruments listed above is impractical.

*Counterparties*

… and three types of counterparties

The Triennial asks dealers to report their foreign exchange transactions for three types of counterparties: other reporting dealers, other financial institutions and non-financial customers.

The category *reporting dealers* covers mainly large commercial and investment banks and securities houses that participate in foreign exchange markets and have active business with end customers. Reporting dealers actively buy and sell foreign exchange instruments both for their own account and to meet customer demand. In the turnover part of the survey, reporting dealers also provide a breakdown of *local* and *cross-border* transactions, according to the location where the sale is arranged (not the country where the head office is based or where the institution is legally incorporated). For each foreign exchange instrument, a reporting dealer specifies trades "with reporting dealers, local" or "with reporting dealers, cross-border". These categories are used to eliminate double-counting, which occurs when two reporting dealers each report the same transaction.

*Other financial institutions* are those not classified as reporting dealers for the purposes of the Triennial. Thus, this category includes smaller commercial banks, investment banks and securities houses. It also covers asset managers such as mutual funds, money market funds, insurance companies, pension funds, hedge funds and currency funds. It also includes building societies, leasing companies, financial subsidiaries of corporations, central counterparties and central banks.

*Non-financial customers* are defined as any counterparty other than those described above. In practice they are mainly non-financial end users, such as corporations and governments.

[7] Typically, a currency swap is used to hedge a bond issued in one currency into another currency, such that the borrower is not exposed to exchange rate risk.

*Reporting basis*

Turnover is based on the location of the sales desk …

Foreign exchange turnover is allocated across countries based on the location where the transaction is arranged (ie the sales desk). The nationality of the reporting dealer does not matter. For example, when Credit Suisse London reports trades to the Bank of England, these transactions are allocated to the United Kingdom. Foreign exchange amounts outstanding, however, are allocated based on the nationality of the reporting dealer (regardless of where the trades are contracted or booked). So, for example, foreign exchange derivatives contracts held by Credit Suisse London will be consolidated by its head office and allocated to Switzerland.

*Eliminating double-counting*

… adjusted for local and cross-border double-counting

As noted above, the BIS uses data on counterparties to eliminate double-counting, which arises when two dealers each report the same transaction. In order to derive meaningful measures of foreign exchange market size, these inter-dealer transactions are halved.

The first step in this process eliminates local double-counting ("net-gross" basis) when calculating national results. Net-gross data are adjusted for transactions between reporting dealers located in the same country. Transactions classified as "with reporting dealers, local" are divided by two, and the resulting figure is subtracted from total "gross-gross" data to obtain net-gross figures (ie business net of local inter-dealer double-counting). For example, when reporting dealers located in the United States report local transactions with each other the sum of these local inter-dealer transactions is divided by two to arrive at the correct figure for US turnover.

A second step eliminates cross-border double-counting ("net-net" basis) when calculating global results. Net-net data are adjusted for cross-border transactions between reporting dealers located in different countries. Transactions classified as "with reporting dealers, cross-border" are divided by two, and the resulting figure is subtracted from total net-gross data to obtain net-net figures (ie business net of local *and* cross-border inter-dealer double-counting). For example, trades between a reporting dealer located in the United States and a reporting dealer located in Germany are divided by two when calculating global turnover.

*Geographical distribution of turnover*

The data identify the largest financial centres …

The net-gross data are used to generate the geographical distribution of foreign exchange turnover, thus enabling a ranking of the *largest financial centres*. In 2010, for example, the United Kingdom captured 37% of global foreign exchange turnover. Note, however, that the geographical distribution is available at the country level, not the city level. While the majority of UK activity took place in London, the total includes transactions in other UK cities.

… but not bilateral activity between countries

One shortcoming of the Triennial methodology is that it is based on currencies and not countries. For this reason, it is not possible to construct the flows in various foreign exchange instruments between two countries or regions. While data are available on turnover in the US dollar and Japanese

yen, for example, the Triennial data do not allow users to calculate flows between the United States and Japan. The US and Japan each report only aggregate cross-border flows with the rest of the world, not flows vis-à-vis each other.

*Currency breakdowns*

Activity is broken down by currency …

The Triennial provides a breakdown of activity based on the underlying currencies for each foreign exchange instrument. Figure 1 shows how the currencies are reported. This format allows users to identify which currencies are used most actively for foreign exchange transactions.

In the first column of Figure 1, the value for each foreign exchange instrument is reported for trades involving the *domestic currency* in one leg against eight *major currencies*: the Australian dollar (AUD), the Canadian dollar (CAD), the euro (EUR), the Japanese yen (JPY), the Swedish krona (SEK), the Swiss franc (CHF), the pound sterling (GBP) and the US dollar (USD). Any trades between the domestic currency and currencies not explicitly listed in column 1 are classified as "other". Transactions that do not involve the local currency (such as EUR/CHF in London) are not reported in this category. The sum of all transactions versus the domestic currency provides a measure of *onshore* trading activity for each currency.

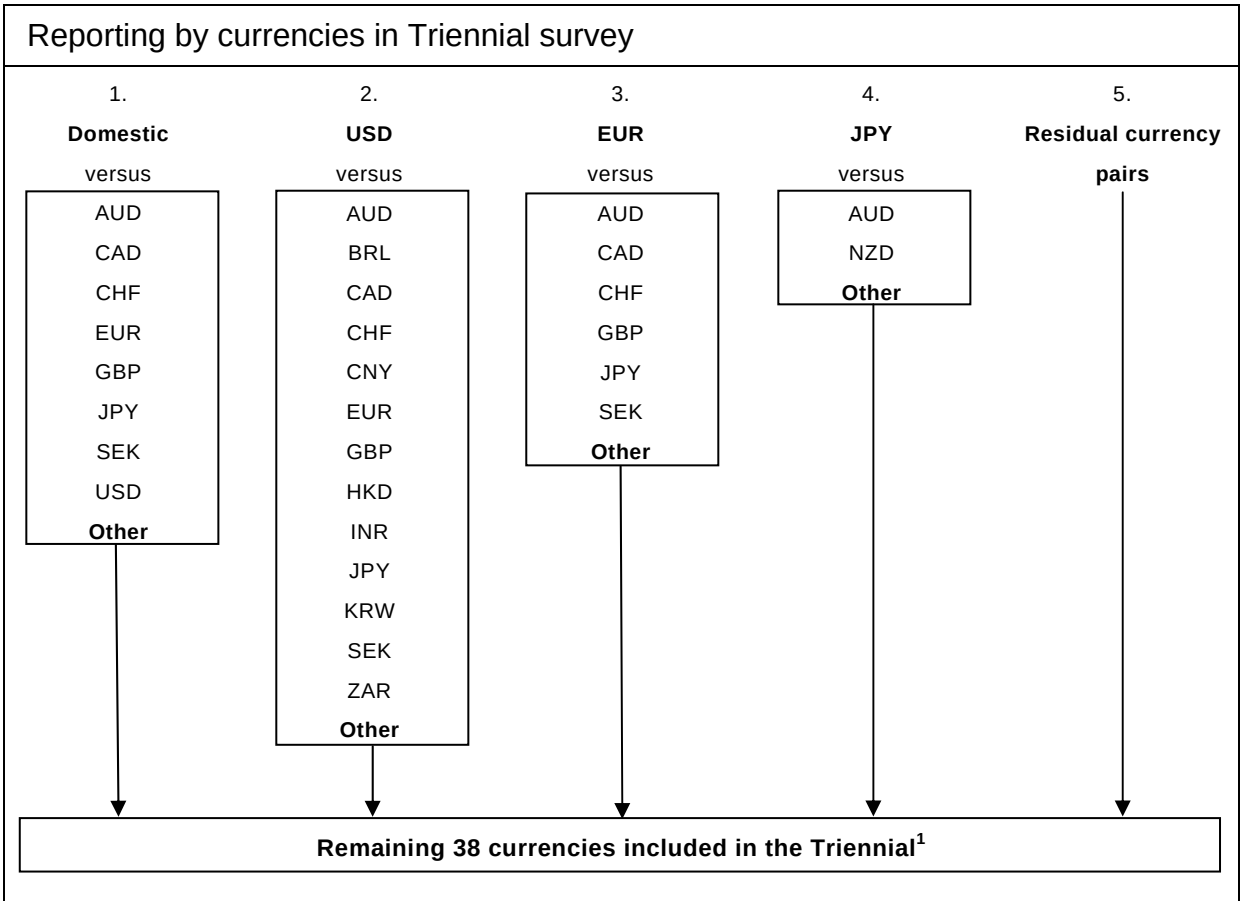
… to calculate a measure of FX activity …

In the second column of Figure 1, all countries provide data for transactions involving the US dollar in one leg against a list of specified currencies. Beginning in 2010, this list was broadened to include: the Brazilian real (BRL), the Chinese renminbi (CNY), the Hong Kong dollar (HKD), the Indian rupee (INR), the Korean won (KRW) and the South African rand (ZAR). Trades against other currencies not specifically listed are classified as "Other".

In the third and fourth columns of Figure 1, a similar breakdown is provided for bilateral transactions involving the euro and the yen. Starting in 2010, data are reported against the yen for the Australian (AUD) and New Zealand dollars (NZD). The fifth column of Figure 1, labelled "Residual currency pairs", collects all transactions that do not involve the domestic currency, the US dollar, the euro or the yen in one leg.

… for the 41 currencies in the survey

In order to calculate global aggregates, the transactions classified as "other" and "residual currency pairs" are allocated against the remaining 38 currencies covered by the Triennial. If the reporting country is Norway, for example, a $1 million transaction involving Danish kroner (DKK) against USD (USD/DKK) is classified as USD versus "other" (Figure 1, column 2), while a $1 million transaction involving GBP against CHF (GBP/CHF) would be reported under "residual currency pairs" (Figure 1, column 5). For the USD/DKK transaction, $1 million is allocated to USD in column 1 and the $1 million "other" amount is allocated to DKK in column 5. For the GBP/CHF transaction, the $1 million "residual" is allocated to each of the individual currencies in column 5, ie $1 million to CHF and $1 million to the GBP. This process ensures that both currencies in a transaction receive equal credit. The global aggregates for CHF therefore include: (i) all trades reported by Switzerland in its domestic currency; plus (ii) all trades reported by other countries involving the Swiss franc on one of the legs.




[1] The EUR, JPY and USD legs of transactions are captured above.

Figure 1

The data on currency breakdown provide answers to three questions. First, they can be used to determine the *currency distribution of global activity*. Given that a foreign exchange transaction involves two currencies, each leg is recorded separately. As a result, the sum of the percentage shares of individual currencies totals 200% instead of 100%. For example, the 2010 Triennial shows that the US dollar is used as one leg in 85% of transactions globally. Note that this figure includes both local transactions within the US, cross-border transactions involving one reporting dealer in the US, and transactions between reporting dealers located outside the US (so-called *offshore* transactions).

The data measure the currency distribution of global activity …

Second, the Triennial provides an estimate of *turnover by currency pair* for individual currencies against the US dollar, the euro and the yen. Given that a bilateral pair is only counted once, the total of all currency pairs is 100%. For example, the 2010 Triennial found that 28% of foreign exchange transactions were in the bilateral currency pair EUR/USD.

… and the most popular currency pairs

Third, the Triennial data can be used to construct a measure of *onshore* versus *offshore trading* for a currency. For example, a country such as Singapore reports all trades against the domestic currency for reporting dealers located in Singapore, with trades classified as local and cross-border. After eliminating local double-counting (ie net-gross), this turnover represents "onshore" activity in the Singapore dollar, as each trade involves a reporting dealer located in Singapore. Reporting dealers located in other countries also

report transactions against the Singapore dollar. In these cases, the reporting dealer is known to be located outside Singapore but the location of their counterparty is not known. A measure of offshore trading in the Singapore dollar can therefore be proxied by taking the difference between the net-gross total and the net-net total.

*Execution methods*

Since 2007, data are collected on execution methods ...

Since its early days, the Triennial has been concerned with the institutional structure of foreign exchange markets, particularly the manner in which trades are executed. The 1992 Triennial, for example, collected data on the proportion of trading via voice brokers versus automated dealing systems. Starting in 2007, the Triennial collected data on the method used to execute foreign exchange transactions, which is identified for each foreign exchange instrument. The data on execution method were modified in 2010 to include trades "with reporting dealers, local" and "with reporting dealers, cross-border" to allow more accurate elimination of double-counting.

... for six different categories

The reporting template is based on the table developed by the New York Foreign Exchange Committee (FXC), and has six categories:

- Interbank direct (inter-dealer): trades executed with another reporting dealer, whether by telephone or electronically, which are not intermediated by a third party.
- Customer direct: trades executed between a reporting dealer and a customer (ie other financial institution or non-financial customer), whether by telephone or electronically, which are not intermediated by a third party.
- Voice broker: trades executed by telephone via a broker.
- Electronic broking systems: trades executed electronically via a broker, such as EBS or Thomson Reuters Matching.
- Multibank electronic trading systems: trades executed electronically via a third-party platform that aggregates quotes across dealers (such as Currenex, FX Connect, FXall, or Hotspot FX).
- Single-bank electronic trading systems: trades executed electronically via a single-bank proprietary platform (such as Barclays' BARX, Citigroup's Velocity, or Deutsche Bank's Autobahn).

## Additional methodological issues

When using and interpreting the Triennial data, users should keep in mind the following methodological issues.

*Sales versus trading desk*

The location of turnover is based on where the trade is arranged

From 1989 to 2001, the basis for reporting turnover was the location of the office where a transaction was struck, even if deals entered into in different countries were booked in a central location. Starting with the 2004 Triennial, the basis for reporting was clarified as the location of the "sales desk" of any trade (ie where it was arranged), which may not necessarily be the same as where the "trading desk" is located. This distinction is important for smaller financial centres as a significant percentage of foreign exchange sales are

booked and traded out of a larger financial centre, such as London, New York or Tokyo. For example, a customer based in Singapore may call a local bank to arrange a foreign exchange transaction. The salesperson, however, may send the trade to be executed by a trading desk located in Hong Kong SAR. In this case, the foreign exchange trade is deemed to have taken place in Singapore, even though it is executed and booked in Hong Kong. While this distinction does not affect global FX turnover, it does affect reported activity levels for any given country. Note that where no sales desk is involved, the trading desk is used to determine the trade location.

Given the increase in electronic execution methods, it is difficult to identify the location where a trade is arranged as it takes place over the internet. The distinction between trading and sales desks is likely to become less important.

*Exchange rate effects*

Exchange rate movements affect results across surveys

Intertemporal comparisons across different Triennial surveys are complicated by the movement of exchange rates between surveys. Movements in exchange rates vis-à-vis the US dollar from one survey to the next will affect both the turnover and amounts outstanding, even if there are no changes in activity. For example, turnover in GBP/JPY may remain unchanged from one reporting period to the next in terms of those currencies, but if the US dollar rises against both currencies, total turnover reported in US dollar terms will be lower (due to the depreciation of sterling and the yen against the dollar), signalling a decline in turnover where none has taken place. Even in currency pairs involving the US dollar, exchange rate movements affect turnover. A trade for a fixed amount of yen against dollars will enter the aggregates with a smaller or larger dollar amount depending on how the yen moves against the dollar from one Triennial to the next.

To provide guidance on the impact of exchange rate movements, each Triennial includes a line showing the totals from prior surveys recalculated at constant exchange rates. For example, the 2010 survey reports average daily foreign exchange turnover in 2001 as $1.24 trillion (in current dollars) but as $1.5 trillion (in constant dollars) – a difference of more than 20%. To generate a value in constant dollars, all transactions in a given currency are converted into the original currency at the historical exchange rate versus the US dollar, and have then recalculated using the average exchange rate in the current survey month.

*Related party trades*

Some trades between related parties are included

For data on turnover, the Triennial instructs reporting dealers to include *related party trades* between a bank's own desks and offices, as well as trades with their own branches, subsidiaries and affiliates. These trades are then identified as an "of which" category. Trades conducted as back-to-back deals, however, are excluded from the Triennial.[8] Trades to facilitate internal bookkeeping or

[8] A back-to-back transaction is a pair of linked agreements in which all liabilities, obligations, and rights of one agreement or transaction are mirrored in the second.

risk management, such as trades between one trading desk (ie spot) and another (ie options), are also not included.

*Prime brokerage trades*

Prime brokerage refers to financial, administrative and operational services offered by large banks to hedge funds, asset managers, smaller banks and other clients.[9] In foreign exchange markets, prime brokers facilitate trades for their clients by either transacting directly with them at attractive prices or providing them with access to electronic platforms that are only available to dealers, such as EBS and Thomson Reuters Matching. In effect, prime brokerage allows clients to trade with other dealers using the prime broker's pre-screened credit and in the name of the prime broker. The client trade is "given up" to the prime broker, who is interposed between the dealer and the client and becomes the counterparty to both legs of the foreign exchange trade as principal.[10]

Prime brokerage has grown and leads to an increase in FX turnover

Foreign exchange prime brokerage activity has increased rapidly over the past decade. The April 2010 survey by the London Foreign Exchange Committee reported that 16% of all foreign exchange (and 29% of spot) transactions are conducted via a prime brokerage relationship. The implications for the Triennial are important, as a "give up" trade executed via a prime broker creates twice the turnover of a direct transaction. If a hedge fund trades $1 with a bank (reporting dealer A) and gives up the trade through its prime broker (reporting dealer B), the Triennial records this transaction as $1 of inter-dealer trading between dealers A and B, and $1 of trading between the hedge fund and its prime broker (dealer B).

*OTC versus exchange-traded derivatives*

Exchange-traded FX derivatives are not included

Currency futures and options are two instruments that are also listed and traded on exchanges such as the Chicago Mercantile Exchange. Data on exchange-traded foreign exchange turnover were reported in the 1989 and 1992 Triennials. Beginning with the 1995 Triennial, however, the focus changed to OTC derivatives markets as timely and comprehensive data were available for exchange-traded products from commercial data sources. The statistics on exchange-traded products published as a memo item line in the summary tables of the central bank surveys are therefore based on the data received from commercial providers. This value is listed along with the OTC aggregates to provide a more comprehensive view of the activity in the global foreign exchange markets.

OTC turnover measures are comparable to exchange-traded volumes …

The degree of comparability between the two datasets depends on whether turnover or amounts outstanding are considered. Turnover on exchange-traded products is comparable to OTC turnover reported in the

[9] Prime brokerage services may include global custody, clearing, margin lending, securities borrowing, financing, execution, portfolio reporting and operational support.

[10] This issue is discussed in the 2009 annual report of the New York Foreign Exchange Committee.

Triennial. Turnover on exchange-traded products does not relate to the notional value of the contracts bought or sold but to the US dollar value of the trades themselves. Hence, these aggregates are comparable with the net-net OTC amounts compiled by the central bank surveys.

… but amounts outstanding are not

By contrast, the amounts outstanding reported in the Triennial are not directly comparable with exchange-traded data. The data for exchange-traded products refer to open interest, equivalent to the sum of positive *net* positions in each contract across traders. By contrast, the Triennial data refer to *gross* positions. For example, a trader wishing to close a position in an outright forward usually does not terminate the existing contract, but enters into a new and offsetting contract. The gross amount outstanding doubles, even though the net exposure is zero. On an exchange, the open interest would fall to zero in this case.

The timing of the Triennial is important, as turnover data are compiled based on April data. Activity in exchange-traded futures is concentrated in the "roll months" of March, June, September and December. During these months, exchange-traded turnover increases as traders maintaining open positions in FX futures contracts tend to "roll forward" by liquidating positions in the maturing contract month and re-establishing a position in a deferred contract month. As a result, a comparison of turnover in April underestimates the exchange-traded activity.

## Comparability with regional foreign exchange surveys

Six regional FX surveys provide more frequent data …

The Triennial complements more frequent regional surveys conducted by regional foreign exchange committees in Australia, Canada, London, New York, Singapore and Tokyo.[11] The regional data provide valuable information on the growth in foreign exchange turnover at a higher frequency than the Triennial survey, and offer greater detail in some areas.

… but there are some differences with the Triennial

Differences in methodology between the regional surveys and the Triennial create small but meaningful differences in the turnover figures reported.[12] Table 3 compares all these surveys. To take one example, the New York Foreign Exchange Committee's (FXC) survey captures turnover in the United States, Canada and Mexico, but does not distinguish local from cross-border transactions, and excludes currency swaps. The US results in the Triennial, in contrast, are only for US-based transactions and include a local/cross-border breakdown. The FXC survey specifies fewer currency pairs, but provides a larger breakdown of counterparties. The most notable difference is the basis of reporting, with the FXC survey using the trading desk rather than the sales desk. Finally, the FXC survey excludes all related-party trades, while certain related-party trades are captured by the Triennial. As a result, spot turnover in the 2010 Triennial was $451 billion per day but only $418 billion in

[11] For a list of these committees and links to their websites, see www.bankofengland.co.uk/markets/forex/fxjsc/links.htm.

[12] The exception is Australia's monthly survey, which has the same format and methodology as the Triennial (although execution method data are not collected).

| Comparison of Triennial with regional foreign exchange surveys | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Triennial | London | New York[1] | Tokyo | Singapore | Australia | Canada |
| Frequency | Every 3 years | Semiannual | Semiannual | Annual | Semiannual | Monthly | Semiannual |
| Reporting month | April | April, October | April, October | April | April, October | Monthly | April, October |
| Reporting currency | USD | USD | USD | USD | USD | USD | USD |
| Reporting dealers in April 2010 regional survey (and Triennial) | 1,309 | 31 (48) | 25 (26) | 20 (45) | 30 (54) | 27 (27) | 8 (16) |
| Average turnover in April 2010 regional survey (and Triennial) | $3,981bn | $1,747bn ($1,854bn) | $754bn ($904bn) | $294bn ($312bn) | $290bn ($266bn) | $19bn ($192bn) | $60bn ($62bn) |
| Basis of reporting | Sales desk | Trading desk | Trading desk | Sales desk[2] | Trading desk | Sales desk | Trading desk |
| Treatment of related party trades | Intragroup included; back-to-back excluded | Intragroup included; back-to-back excluded | Excluded | Intragroup included; back-to-back excluded | Intragroup included; back-to-back excluded | Collected as memo item | Intragroup included; back-to-back excluded |
| Distinguish local and cross-border trades? | Yes | Yes | No | Yes | Yes | Yes | No |
| Adjust for double-counting (local and cross-border)? | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of instruments | 5 | 6 | 4 | 4 | 5 | 5 | 5 |
| Currency pairs | 30 | 54 | 13 | > 5 | > 16 | 30 | > 4 |
| Counterparty types | 3 | 4 | 4 | 3 | 2 | 3 | 4 |
| Execution method categories | 6 | Same as Triennial | 5 | 6 (different from Triennial) | Not collected | Not collected | 5 |

[1] North America, including Canada and Mexico. [2] From 2010, the Tokyo Foreign Exchange Market Committee changed the reporting basis from the trading desk to the sales desk. Table 3

the FXC survey – a difference of 7%. The other regional surveys show smaller differences in turnover volumes relative to the Triennial, suggesting that these regional surveys provide a good proxy for the Triennial.