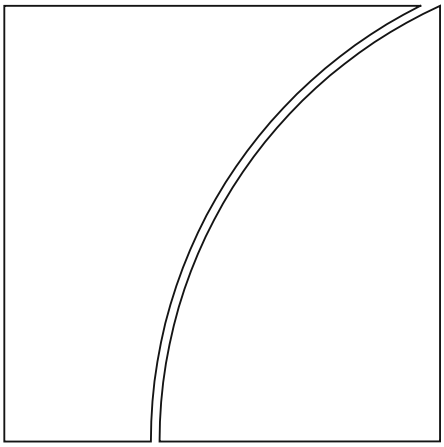


Triennial Central Bank Survey

Foreign exchange turnover in April 2016

Monetary and Economic Department

September 2016

Tools to access and download the results of the BIS Triennial Central Bank Survey:

- BIS website – tables in PDF of the BIS's most current data
- BIS Statistics Explorer – a browsing tool for pre-defined views of the BIS's most current data
- BIS Statistics Warehouse – a search tool for customised queries of the BIS's most current data

Questions about the BIS Triennial Central Bank Survey may be addressed to statistics@bis.org.

This publication is available on the BIS website (www.bis.org/publ/rpfx16.htm).

Foreign exchange turnover in April 2016

Contents

This publication presents the global results of the 2016 BIS Triennial Central Bank Survey of turnover in foreign exchange markets. A separate publication presents the results of turnover in over-the-counter interest rate derivatives markets (www.bis.org/publ/rpfx16.htm). Many participating authorities also publish their national results, links to which are available on the BIS website (www.bis.org/statistics/triennialrep/national.htm). The global results for a companion survey on amounts outstanding in OTC derivatives markets will be published in November 2016.

Data are subject to change. Revised data will be released concurrently with the *BIS Quarterly Review* in December 2016. The December 2016 *BIS Quarterly Review* will include several special feature articles that analyse the results of the 2016 Triennial Survey.

Notations

billion	thousand million
trillion	thousand billion
e	estimated
lhs	left-hand scale
rhs	right-hand scale
$	US dollar unless specified otherwise
…	not available
.	not applicable
–	nil or negligible

Differences in totals are due to rounding.

The term "country" as used in this publication also covers territorial entities that are not states as understood by international law and practice but for which data are separately and independently maintained.

Abbreviations

ARS	Argentine peso
AUD	Australian dollar
BGN	Bulgarian lev
BHD	Bahraini dinar
BRL	Brazilian real
CAD	Canadian dollar
CHF	Swiss franc
CLP	Chilean peso
CNY	Chinese yuan (renminbi)
COP	Colombian peso
CZK	Czech koruna
DKK	Danish krone
EUR	euro
GBP	pound sterling
HKD	Hong Kong dollar
HUF	Hungarian forint
IDR	Indonesian rupiah
ILS	Israeli new shekel
INR	Indian rupee
JPY	yen
KRW	Korean won
LTL	Lithuanian litas
LVL	Latvian lats
MXN	Mexican peso
MYR	Malaysian ringgit
NOK	Norwegian krone
NZD	New Zealand dollar
OTH	other currencies
PEN	Peruvian new sol
PHP	Philippine peso
PLN	Polish zloty
RMB	renminbi; see CNY
RON	new Romanian leu
RUB	Russian rouble
SAR	Saudi riyal
SEK	Swedish krona
SGD	Singapore dollar
THB	Thai baht
TRY	Turkish lira
TWD	new Taiwan dollar
USD	US dollar
ZAR	South African rand

1. BIS Triennial Central Bank Survey

The BIS Triennial Central Bank Survey is the most comprehensive source of information on the size and structure of global foreign exchange (FX) and over-the-counter (OTC) derivatives markets. The Triennial Survey aims to increase the transparency of OTC markets and to help central banks, other authorities and market participants monitor developments in global financial markets. It also helps to inform discussions on reforms to OTC markets.

FX market activity has been surveyed every three years since 1986, and OTC interest rate derivatives market activity since 1995.[1] The Triennial Survey is coordinated by the BIS under the auspices of the Markets Committee (for the FX part) and the Committee on the Global Financial System (for the interest rate derivatives part). It is supported through the Data Gaps Initiative endorsed by the G20.

The latest survey of turnover took place in April 2016. Central banks and other authorities in 52 jurisdictions participated in the 2016 survey (see page 15). They collected data from close to 1,300 banks and other dealers in their jurisdictions and reported national aggregates to the BIS, which then calculated global aggregates. Turnover data are reported by the sales desks of reporting dealers, regardless of where a trade is booked, and are reported on an unconsolidated basis, ie including trades between related entities that are part of the same group.

Highlights

Highlights from the 2016 Triennial Survey of turnover in OTC foreign exchange markets:

- Trading in foreign exchange markets averaged $5.1 trillion per day in April 2016. This is down from $5.4 trillion in April 2013, a month which had seen heightened activity in Japanese yen against the background of monetary policy developments at that time.
- For first time since 2001, spot turnover declined. Spot transactions fell to $1.7 trillion per day in April 2016 from $2.0 trillion in 2013. In contrast, the turnover of FX swaps rose further, reaching $2.4 trillion per day in April 2016. This rise was driven in large part by increased trading of FX swaps involving yen.
- The US dollar remained the dominant vehicle currency, being on one side of 88% of all trades in April 2016. The euro, yen and Australian dollar all lost market share. In contrast, many emerging market currencies increased their share. The renminbi doubled its share, to 4%, to become the world's eighth most actively traded currency and the most actively traded emerging market currency, overtaking the Mexican peso. The rise in the share of renminbi was primarily due to the increase in trading against the US dollar. In April 2016, as much as 95% of renminbi trading volume was against the US dollar.
- The share of trading between reporting dealers grew over the three-year period, accounting for 42% of turnover in April 2016, compared with 39% in April 2013. Banks other than reporting dealers accounted for a further 22% of turnover. Institutional investors were the third largest group of counterparties in FX markets, at 16%.
- In April 2016, sales desks in five countries – the United Kingdom, the United States, Singapore, Hong Kong SAR and Japan – intermediated 77% of foreign exchange trading, up from 75% in April 2013 and 71% in April 2010.

[1] More frequent regional surveys are conducted by local foreign exchange committees in Australia, Canada, London, New York, Singapore and Tokyo. These semiannual surveys focus on the structure of local FX markets, and there are some methodological differences compared with the Triennial Survey. In particular, the Triennial Survey collects data based on the location of the sales desk, whereas some regional surveys are based on the location of the trading desk.

2. Turnover in foreign exchange markets

According to the 2016 Triennial Survey, turnover in global FX markets averaged $5.1 trillion per day in 2016 (Table 1). This is down from $5.4 trillion in April 2013, a month which had seen heightened activity in Japanese yen against the background of monetary policy developments at that time.[2] In addition, exchange rate movements influence comparisons with previous surveys. In particular, the appreciation of the US dollar between 2013 and 2016 reduced the US dollar value of turnover in currencies other than the US dollar. When valued at constant (April 2016) exchange rates, turnover increased slightly, by about 4% between April 2016 and April 2013 (Table 1). Nevertheless, the latest developments contrast with the strong growth in turnover observed between Triennial Surveys since 2001.

Turnover by currencies and currency pairs

The US dollar remained the world's dominant vehicle currency. It was on one side of 88% of all trades in April 2016, up slightly from 87% in April 2013 (Graph 1, left-hand panel). In contrast, trading in the next eight most liquid currencies has shifted notably.

The role of the euro in FX markets has continued to decline since the beginning of the euro area sovereign debt crisis in 2010. The market share of the currency declined to 31% in April 2016 from 33% in April 2013 and 39% in April 2010 (Graph 1, left-hand panel, and Table 2). Trading in the four most actively traded euro currency pairs – USD/EUR, EUR/GBP, EUR/JPY and EUR/CHF – fell. USD/EUR average daily turnover declined by $119 billion, while the relative declines were most pronounced for the EUR/JPY and EUR/CHF pairs (Table 3). In contrast, trading in the EUR/SEK and EUR/NOK currency pairs increased.

The share of the yen in global FX trading also declined, by 1 percentage point to 22% by April 2016 (Graph 1, left-hand panel, and Table 2). This contrasts sharply with the currency's 4 percentage point expansion reported in the previous survey, which coincided with the expansionary monetary policy shift of the Bank of Japan in April 2013. Trading in the three most actively traded yen cross rates – USD/JPY, EUR/JPY and JPY/AUD – contracted significantly from 2013 to 2016.

Among the other heavily traded advanced economy currencies, the Australian dollar and Swiss franc also lost market share, from 8.6% to 6.9% and 5.2% to 4.8%, respectively; in contrast, the pound sterling, Canadian dollar, Swedish krona and Norwegian krone gained shares in global FX turnover.

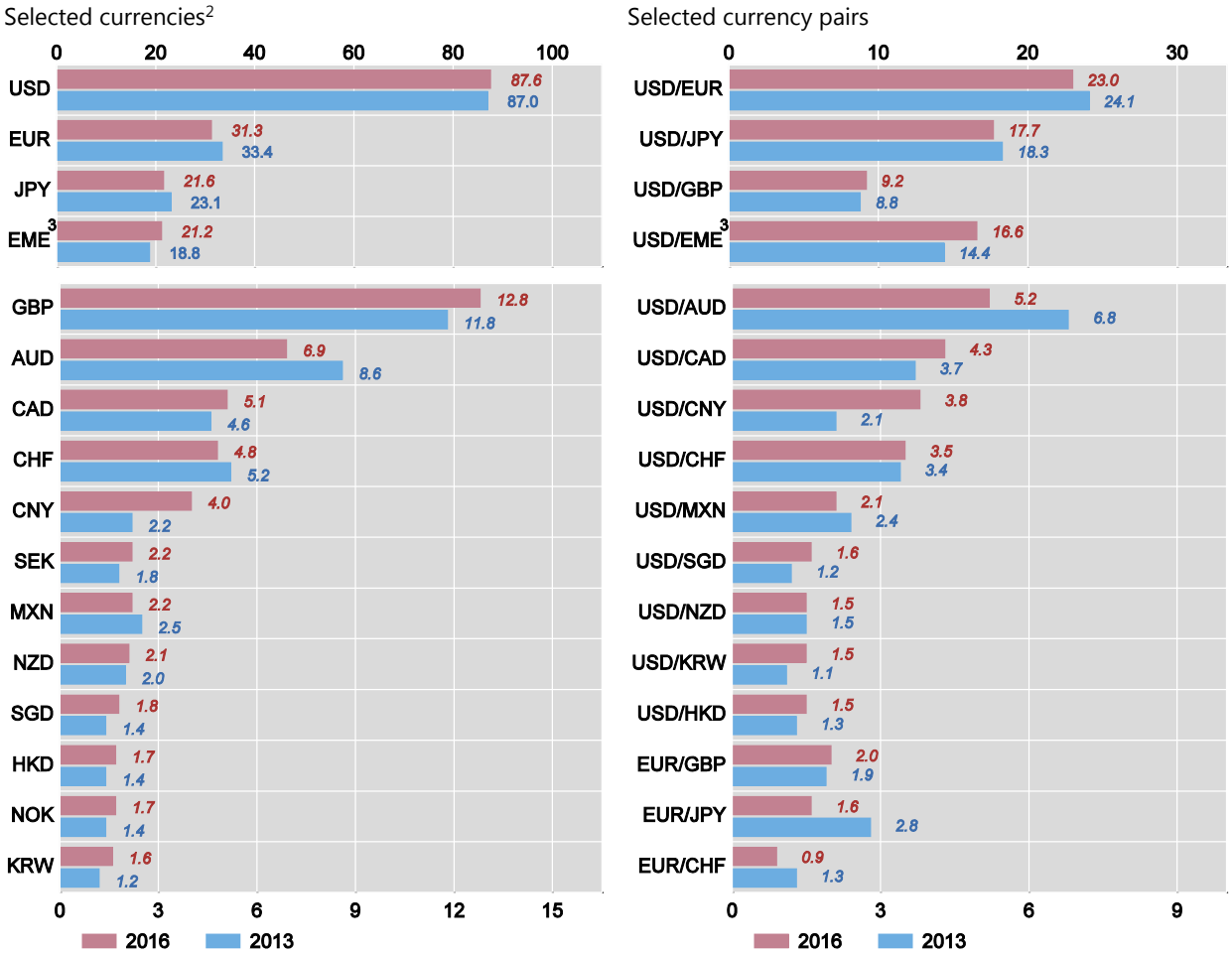
The 2016 Triennial Survey shows a further significant rise in the global importance of several emerging market currencies. The renminbi became the most actively traded emerging market currency, overtaking the Mexican peso to become the world's eighth most actively traded currency (Table 2). The average daily turnover of renminbi almost doubled, from $120 billion to $202 billion, between April 2013 and April 2016, representing a rise in the share in global FX turnover from 2% to 4%. Ninety-five per cent of renminbi turnover is due to trading against the US dollar. The average turnover of USD/CNY rose from $113 billion to $192 billion over the three-year period, with that pair moving up from ninth to sixth place among the most traded currency pairs (Table 3).

Several other emerging market currencies, particularly from the Asia-Pacific region, gained market share: the Korean won, Indian rupee and Thai baht were among the currencies that advanced in the ranking by two or three places (Table 2). In contrast, the turnover of some emerging market currencies peaked in 2013 and has since exhibited a significant decline (eg the Mexican peso and Russian rouble).

[2] For a discussion of drivers of trading volumes in April 2013, see D Rime and A Schrimpf, "The anatomy of the global FX market through the lens of the 2013 Triennial Survey", *BIS Quarterly Review*, December 2013, pp 27–43, www.bis.org/publ/qtrpdf/r_qt1312e.htm.

Foreign exchange market turnover by currency and currency pairs

Net-net basis,[1] daily averages in April, in per cent — Graph 1



[1] Adjusted for local and cross-border inter-dealer double-counting. [2] As two currencies are involved in each transaction, the sum of shares in individual currencies will total 200%. [3] Emerging market currencies.

Source: BIS Triennial Central Bank Survey. For additional data by currency and currency pairs, see Tables 2 and 3 on pages 10 and 11.

Turnover by instrument and maturity

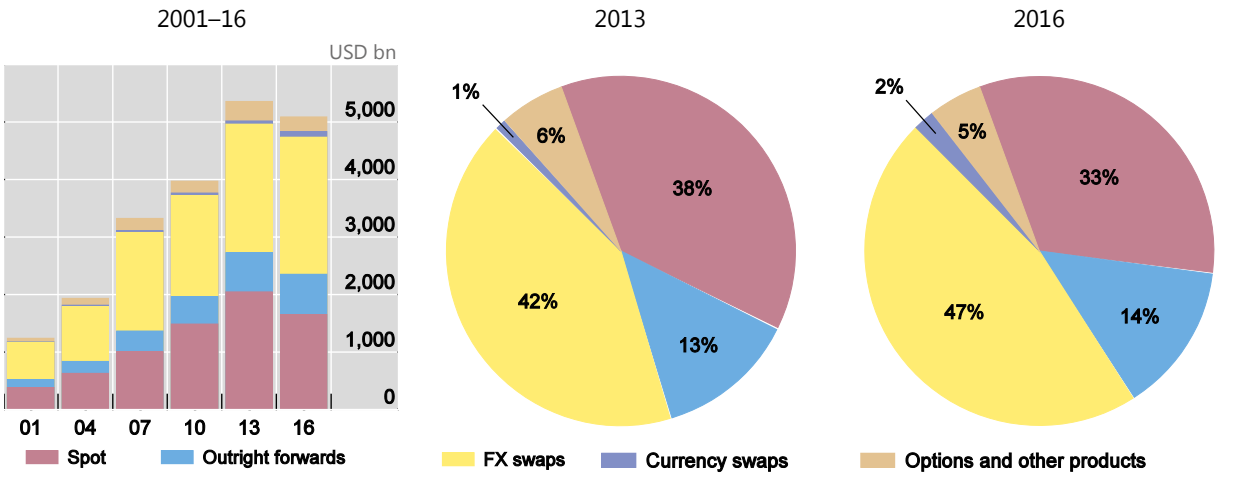
Trading activity has changed unevenly across the main FX instrument categories. In particular, trading volumes of spot trades and FX swaps, the two largest instrument categories, have evolved in opposite directions.

Spot market trading activity fell by 19% to $1.7 trillion per day in April 2016. This is the first time since 2001 that spot turnover has fallen compared with a previous survey (Table 1). The share of spot transactions in total foreign exchange market turnover declined by 5 percentage points between April 2013 and April 2016 to 33% (Graph 2). This decline in spot trading was the main driver behind the overall fall in global FX turnover compared with 2013.

In contrast, turnover in FX swaps rose by 6% to $2.4 trillion per day in April 2016. FX swaps remained the most traded instrument, with their share in turnover rising 5 percentage points to 47% (Table 3). Still, the growth in FX swap turnover was significantly lower than the 27% growth rate between April 2010 and April 2013.

Foreign exchange market turnover by instrument

Net-net basis,[1] daily averages in April — Graph 2



[1] Adjusted for local and cross-border inter-dealer double-counting.

Source: BIS Triennial Central Bank Survey. For additional data by instrument, see Table 1 on page 9.

The US dollar continues to be on one side of 91% of FX swap transactions, a share virtually unchanged compared with previous surveys. The euro was on one side of 34% of FX swap transactions, also a virtually unchanged share since 2013. The share of the yen in total FX swap turnover rose to 19% in April 2016, compared with 15% in 2013.[3]

Trading activity changed unevenly in other parts of the FX OTC derivatives market. Trading volume of outright forwards rose to $700 billion in 2016, a 3% increase from $679 billion in 2013. Trading volume of currency swaps grew much faster than in any other part of the FX market, although this instrument still remains the least traded, owing in part to the long maturity of the contracts. Turnover in currency swaps rose to $96 billion in 2016, a 79% increase from $54 billion in 2013.

In contrast, trading volume of FX options declined to $254 billion in 2016, 24% lower than in 2013. The largest decline took place in yen cross rates, which declined to $74 billion in 2016 (ie by 52% from 2013).[4]

The 2016 survey shows a tendency towards slightly longer maturities of FX swaps and outright forwards. For instance, 30% of FX swaps initiated in April 2016 had a contractual maturity of between seven days and one year, compared with 26% in 2013 (Table 4). Similarly, 59% of outright forwards initiated in April 2016 had a contractual maturity of between seven days and one year, compared with 56% in April 2013.

[3] For an analysis of investor positioning in yen FX swaps and related FX derivatives, see C Borio, R McCauley, P McGuire and V Sushko, "Covered interest parity lost: understanding the cross-currency basis", *BIS Quarterly Review*, September 2016 (forthcoming).

[4] These changes have to be interpreted in the context of the surge in yen options trading in April 2013, when players such as hedge funds used the options market to express their directional views on the yen given the expansionary shift in Japanese monetary policy in April 2013; for a more detailed discussion, see D Rime and A Schrimpf (2013), op cit.

Turnover by counterparty

FX trading continued to be dominated by financial institutions other than reporting dealers, which accounted for 51% of turnover in April 2016 (Graph 3 and Table 4). However, the share of trading between reporting dealers increased for the first time since 1995. Inter-dealer trading, which averaged $2.1 trillion in April 2016, increased from 39% of FX turnover in April 2013 to 42% in April 2016. The rise in inter-dealer trading was primarily driven by the increased trading in FX swaps, an 11% rise since 2013 to $1.2 trillion in April 2016. Turnover in spot activity among reporting dealers declined in absolute terms (Table 4).

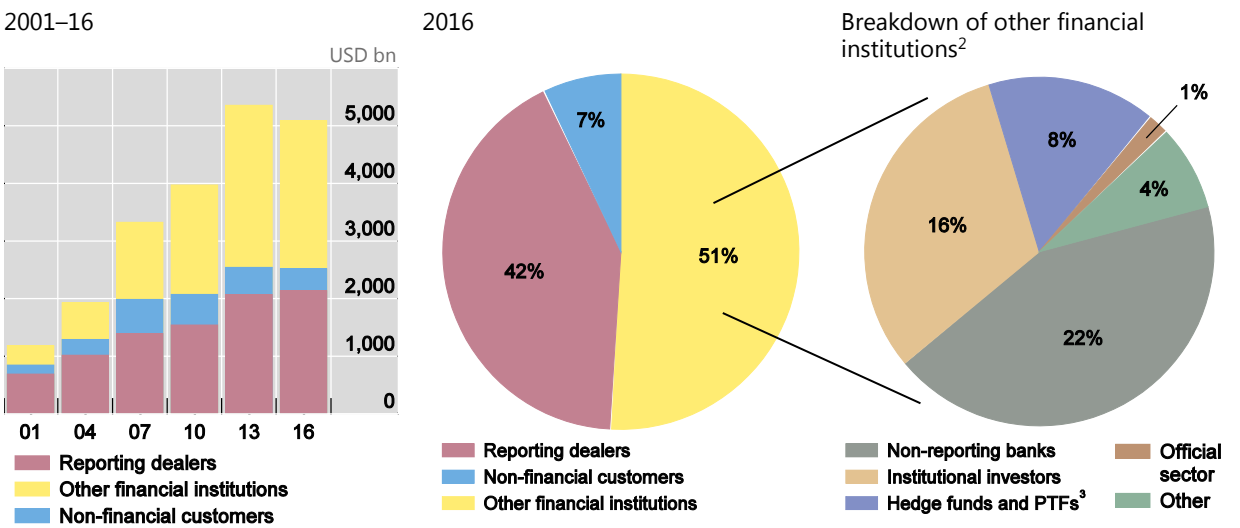
Trading between reporting dealers and other financial institutions fell slightly between 2013 and 2016, to $2.6 trillion. Non-reporting banks – smaller and regional banks that serve as clients of the large FX dealing banks but do not engage in market-making – accounted for roughly 22% of global FX turnover in April 2016 (Graph 3), down from a 24% share in April 2013. At the same time, institutional investors, such as insurance companies and pension funds, further increased their share of FX trading relative to hedge funds and proprietary trading firms: institutional investors were on one side of 16% of daily turnover in April 2016, up from 11% in 2013, whereas the corresponding share of FX trading by hedge funds and proprietary trading firms decreased from 11% to 8%.

The rise in the share of trading by institutional investors is mostly due to an increase in their use of FX swaps. Average daily FX swap turnover with institutional investors as a counterparty rose to $278 billion by April 2016 (Table 5), a 79% increase compared with the 2013 survey.

The fall in the share of trading by non-reporting banks is primarily due to a decline in their activity in the spot market, followed by a decline in their use of FX swaps. Average daily spot turnover with non-reporting banks as a counterparty stood at $354 billion in April 2016, a 30% decline compared with the 2013 survey; and average daily FX swap turnover stood at $564 billion (a 7% decline).

Foreign exchange market turnover by counterparty

Net-net basis,[1] daily averages in April — Graph 3



[1] Adjusted for local and cross-border inter-dealer double-counting. [2] For definitions of counterparties, see page 18. [3] Proprietary trading firms.

Source: BIS Triennial Central Bank Survey. For additional data by counterparty, see Tables 4 and 5 on pages 12 and 13.

The fall in the share of trading by hedge funds and proprietary trading firms was due to a decline in this sector's activity in all three of the main market segments. Average daily spot turnover with hedge funds and proprietary trading firms as a counterparty stood at $200 billion in April 2016, a 29% decline compared with the 2013 survey; trading in outright forwards and FX swaps with this counterparty sector also declined, by 29% and 37%, respectively.

Trading with non-financial customers, such as corporations and governments, contracted, accounting for only 7% of global FX turnover, a continuation of the trend captured in previous surveys.

Geographical distribution of turnover

Trading continues to be concentrated in the largest financial centres. In April 2016, sales desks in five countries – the United Kingdom, the United States, Singapore, Hong Kong SAR and Japan – intermediated 77% of all foreign exchange trading (Table 6). The share of foreign exchange trading taking place in the United States was virtually unchanged relative to the previous survey, at 19% in 2016. Asian financial centres, namely Tokyo, Hong Kong SAR and Singapore, increased their combined share of intermediation to 21%, from 15%.

The share of foreign exchange trading in the United Kingdom declined to 37% in April 2016, from 41%. The decline was broad-based across currency pairs. The market share of the euro area continued to decline, falling to 8% in April 2016 from 9% in 2013, although France maintained its 3% share. The trend decline in the share of trading activity taking place in Switzerland and Australia also continued, to 2% in each country in 2016 compared with 3% in 2013.

Annexes

A Tables

OTC foreign exchange turnover

Net-net basis,[1] daily averages in April, in billions of US dollars — Table 1

Instrument	2001	2004	2007	2010	2013	**2016**
Foreign exchange instruments	1,239	1,934	3,324	3,971	5,355	**5,088**
Spot transactions	386	631	1,005	1,488	2,046	**1,654**
Outright forwards	130	209	362	475	679	**700**
Foreign exchange swaps	656	954	1,714	1,759	2,239	**2,383**
Currency swaps	7	21	31	43	54	**96**
Options and other products[2]	60	119	212	207	337	**254**
Memo:						
Turnover at April 2016 exchange rates[3]	*1,381*	*1,884*	*3,123*	*3,665*	*4,915*	***5,088***
Exchange-traded derivatives[4]	*12*	*25*	*77*	*145*	*145*	***115***

[1] Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). [2] The category "other FX products" covers highly leveraged transactions and/or trades whose notional amount is variable and where a decomposition into individual plain vanilla components was impractical or impossible. [3] Non-US dollar legs of foreign currency transactions were converted into original currency amounts at average exchange rates for April of each survey year and then reconverted into US dollar amounts at average April 2016 exchange rates. [4] Sources: Euromoney Tradedata; Futures Industry Association; The Options Clearing Corporation; BIS derivatives statistics. Foreign exchange futures and options traded worldwide.

Currency distribution of OTC foreign exchange turnover

Net-net basis,[1] percentage shares of average daily turnover in April[2] Table 2

Currency	2001		2004		2007		2010		2013		**2016**	
	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank	**Share**	**Rank**
USD	89.9	1	88.0	1	85.6	1	84.9	1	87.0	1	**87.6**	**1**
EUR	37.9	2	37.4	2	37.0	2	39.1	2	33.4	2	**31.3**	**2**
JPY	23.5	3	20.8	3	17.2	3	19.0	3	23.1	3	**21.6**	**3**
GBP	13.0	4	16.5	4	14.9	4	12.9	4	11.8	4	**12.8**	**4**
AUD	4.3	7	6.0	6	6.6	6	7.6	5	8.6	5	**6.9**	**5**
CAD	4.5	6	4.2	7	4.3	7	5.3	7	4.6	7	**5.1**	**6**
CHF	6.0	5	6.0	5	6.8	5	6.3	6	5.2	6	**4.8**	**7**
CNY[3]	0.0	35	0.1	29	0.5	20	0.9	17	2.2	9	**4.0**	**8**
SEK	2.5	8	2.2	8	2.7	9	2.2	9	1.8	11	**2.2**	**9**
MXN[3]	0.8	14	1.1	12	1.3	12	1.3	14	2.5	8	**2.2**	**10**
NZD[3]	0.6	16	1.1	13	1.9	11	1.6	10	2.0	10	**2.1**	**11**
SGD[3]	1.1	12	0.9	14	1.2	13	1.4	12	1.4	15	**1.8**	**12**
HKD[3]	2.2	9	1.8	9	2.7	8	2.4	8	1.4	13	**1.7**	**13**
NOK[3]	1.5	10	1.4	10	2.1	10	1.3	13	1.4	14	**1.7**	**14**
KRW[3]	0.8	15	1.1	11	1.2	14	1.5	11	1.2	17	**1.6**	**15**
TRY[3]	0.0	30	0.1	28	0.2	26	0.7	19	1.3	16	**1.4**	**16**
INR[3]	0.2	21	0.3	20	0.7	19	1.0	15	1.0	20	**1.1**	**17**
RUB[3]	0.3	19	0.6	17	0.7	18	0.9	16	1.6	12	**1.1**	**18**
BRL[3]	0.5	17	0.3	21	0.4	21	0.7	21	1.1	19	**1.0**	**19**
ZAR[3]	0.9	13	0.7	16	0.9	15	0.7	20	1.1	18	**1.0**	**20**
DKK[3]	1.2	11	0.9	15	0.8	16	0.6	22	0.8	21	**0.8**	**21**
PLN[3]	0.5	18	0.4	19	0.8	17	0.8	18	0.7	22	**0.7**	**22**
TWD[3]	0.3	20	0.4	18	0.4	22	0.5	23	0.5	23	**0.6**	**23**
THB[4]	0.2	24	0.2	22	0.2	25	0.2	26	0.3	27	**0.4**	**24**
MYR[4]	0.1	26	0.1	30	0.1	28	0.3	25	0.4	25	**0.4**	**25**
HUF[3]	0.0	33	0.2	23	0.3	23	0.4	24	0.4	24	**0.3**	**26**
CZK[4]	0.2	22	0.2	24	0.2	24	0.2	27	0.4	26	**0.3**	**27**
ILS[4]	0.1	25	0.1	26	0.2	27	0.2	31	0.2	29	**0.3**	**28**
SAR[4]	0.1	27	0.0	32	0.1	32	0.1	34	0.1	34	**0.3**	**29**
CLP[4]	0.2	23	0.1	25	0.1	30	0.2	29	0.3	28	**0.2**	**30**
IDR[4]	0.0	28	0.1	27	0.1	29	0.2	30	0.2	30	**0.2**	**31**
COP[4]	0.0	31	0.0	33	0.1	33	0.1	32	0.1	33	**0.2**	**32**
PHP[4]	0.0	29	0.0	31	0.1	31	0.2	28	0.1	31	**0.1**	**33**
RON[4]	...	37	...	40	0.0	34	0.1	33	0.1	32	**0.1**	**34**
PEN[4]	0.0	32	0.0	35	0.0	36	0.0	36	0.1	35	**0.1**	**35**
OTH	6.6		6.6		7.7		4.7		1.6		**2.1**	
Total	**200.0**		**200.0**		**200.0**		**200.0**		**200.0**		**200.0**	

[1] Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). [2] Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%. [3] Turnover for years prior to 2013 may be underestimated owing to incomplete reporting of offshore trading in previous surveys. Methodological changes in the 2013 survey ensured more complete coverage of activity in emerging market and other currencies. [4] Turnover may be underestimated owing to incomplete reporting of offshore trading.

OTC foreign exchange turnover by currency pair

Net-net basis,[1] daily averages in April, in billions of US dollars and percentages — Table 3

Currency pair	2001		2004		2007		2010		2013		**2016**	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	**Amount**	**%**
USD / EUR	372	30.0	541	28.0	892	26.8	1,098	27.7	1,292	24.1	**1,173**	**23.0**
USD / JPY	250	20.2	328	17.0	438	13.2	567	14.3	980	18.3	**902**	**17.7**
USD / GBP	129	10.4	259	13.4	384	11.6	360	9.1	473	8.8	**470**	**9.2**
USD / AUD	51	4.1	107	5.5	185	5.6	248	6.3	364	6.8	**266**	**5.2**
USD / CAD	54	4.3	77	4.0	126	3.8	182	4.6	200	3.7	**218**	**4.3**
USD / CNY	...	...	...	...	...	...	31	0.8	113	2.1	**192**	**3.8**
USD / CHF	59	4.8	83	4.3	151	4.5	166	4.2	184	3.4	**180**	**3.5**
USD / MXN	...	...	...	...	...	...	...	...	128	2.4	**105**	**2.1**
USD / SGD	...	...	...	...	...	...	...	...	65	1.2	**81**	**1.6**
USD / NZD	...	...	...	...	...	...	...	...	82	1.5	**78**	**1.5**
USD / KRW	...	...	...	...	...	...	58	1.5	60	1.1	**78**	**1.5**
USD / HKD	...	...	...	...	...	...	85	2.1	69	1.3	**77**	**1.5**
USD / SEK	...	...	...	...	57	1.7	45	1.1	55	1.0	**66**	**1.3**
USD / TRY	...	...	...	...	...	...	...	...	63	1.2	**63**	**1.2**
USD / INR	...	...	...	...	...	...	36	0.9	50	0.9	**56**	**1.1**
USD / RUB	...	...	...	...	...	...	...	...	79	1.5	**53**	**1.0**
USD / NOK	...	...	...	...	...	...	...	...	49	0.9	**48**	**0.9**
USD / BRL	...	...	...	...	...	...	25	0.6	48	0.9	**45**	**0.9**
USD / ZAR	...	...	...	...	...	...	24	0.6	51	1.0	**41**	**0.8**
USD / TWD	...	...	...	...	...	...	...	...	22	0.4	**31**	**0.6**
USD / PLN	...	...	...	...	...	...	...	...	22	0.4	**19**	**0.4**
USD / OTH	199	16.0	307	15.9	612	18.4	445	11.2	213	4.0	**213**	**4.2**
EUR / GBP	27	2.1	47	2.4	69	2.1	109	2.7	102	1.9	**100**	**2.0**
EUR / JPY	36	2.9	61	3.2	86	2.6	111	2.8	148	2.8	**79**	**1.6**
EUR / CHF	13	1.1	30	1.6	62	1.9	71	1.8	71	1.3	**44**	**0.9**
EUR / SEK	...	...	...	...	24	0.7	35	0.9	28	0.5	**36**	**0.7**
EUR / NOK	...	...	...	...	...	...	...	...	20	0.4	**28**	**0.6**
EUR / AUD	1	0.1	4	0.2	9	0.3	12	0.3	21	0.4	**16**	**0.3**
EUR / CAD	1	0.1	2	0.1	7	0.2	14	0.3	15	0.3	**14**	**0.3**
EUR / PLN	...	...	...	...	...	...	...	...	14	0.3	**13**	**0.3**
EUR / DKK	...	...	...	...	...	...	...	...	13	0.2	**13**	**0.2**
EUR / HUF	...	...	...	...	...	...	...	...	10	0.2	**5**	**0.1**
EUR / TRY	...	...	...	...	...	...	...	...	6	0.1	**4**	**0.1**
EUR / CNY	...	...	...	...	...	...	...	...	1	0.0	**2**	**0.0**
EUR / OTH	20	1.6	38	1.9	83	2.5	102	2.6	51	0.9	**65**	**1.3**
JPY / AUD	...	...	...	...	...	...	24	0.6	46	0.9	**31**	**0.6**
JPY / CAD	...	...	...	...	...	...	...	...	6	0.1	**7**	**0.1**
JPY / NZD	...	...	...	...	...	...	4	0.1	5	0.1	**5**	**0.1**
JPY / TRY	...	...	...	...	...	...	...	...	1	0.0	**3**	**0.1**
JPY / ZAR	...	...	...	...	...	...	...	...	4	0.1	**3**	**0.1**
JPY / BRL	...	...	...	...	...	...	...	...	3	0.1	**1**	**0.0**
JPY / OTH	15	1.2	28	1.4	66	2.0	50	1.3	88	1.6	**45**	**0.9**
Other currency pairs	13	1.1	22	1.1	74	2.2	70	1.8	44	0.8	**116**	**2.3**
All currency pairs	1,239	100.0	1,934	100.0	3,324	100.0	3,971	100.0	5,355	100.0	**5,088**	**100.0**

[1] Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis).

OTC foreign exchange turnover by instrument, counterparty and maturity

Net-net basis,[1] daily averages in April, in billions of US dollars and percentages — Table 4

Instrument/counterparty/maturity	2001		2004		2007		2010		2013		**2016**	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	**Amount**	**%**
Spot transactions	386	31.2	631	32.6	1,005	30.2	1,488	37.5	2,046	38.2	**1,654**	**32.5**
with reporting dealers	216	56.0	310	49.2	426	42.4	517	34.7	675	33.0	**607**	**36.7**
with other financial institutions	111	28.9	212	33.7	394	39.2	754	50.7	1,183	57.8	**930**	**56.2**
with non-financial customers	58	15.0	108	17.0	184	18.3	217	14.6	188	9.2	**117**	**7.1**
Outright forwards	130	10.5	209	10.8	362	10.9	475	11.9	679	12.7	**700**	**13.8**
with reporting dealers	52	40.0	73	35.1	96	26.5	112	23.7	181	26.6	**189**	**27.1**
with other financial institutions	41	31.3	80	38.3	159	43.9	254	53.5	402	59.2	**431**	**61.5**
with non-financial customers	37	28.7	56	26.6	107	29.6	108	22.8	96	14.2	**80**	**11.4**
Up to 7 days	51	38.8	92	44.3	154	42.6	219	46.1	270	39.7	**270**	**38.6**
Over 7 days and up to 1 year	76	58.4	111	53.2	200	55.4	245	51.5	378	55.6	**412**	**58.9**
Over 1 year	4	2.7	5	2.6	7	2.0	11	2.4	31	4.6	**17**	**2.5**
Foreign exchange swaps	656	52.9	954	49.3	1,714	51.6	1,759	44.3	2,239	41.8	**2,383**	**46.8**
with reporting dealers	419	63.9	573	60.0	796	46.4	834	47.4	1,088	48.6	**1,209**	**50.7**
with other financial institutions	177	27.0	293	30.7	682	39.8	755	42.9	1,002	44.7	**1,027**	**43.1**
with non-financial customers	60	9.1	89	9.3	236	13.8	170	9.7	150	6.7	**147**	**6.2**
Up to 7 days	451	68.7	700	73.4	1,329	77.5	1,299	73.9	1,573	70.2	**1,640**	**68.8**
Over 7 days and up to 1 year	196	29.9	242	25.3	365	21.3	442	25.1	579	25.9	**713**	**29.9**
Over 1 year	8	1.2	10	1.0	18	1.0	14	0.8	87	3.9	**30**	**1.3**
Currency swaps	7	0.6	21	1.1	31	0.9	43	1.1	54	1.0	**96**	**1.9**
with reporting dealers	4	53.5	12	57.7	12	38.6	20	46.8	29	53.7	**46**	**48.2**
with other financial institutions	2	21.3	5	23.4	13	41.1	19	45.0	19	34.7	**43**	**44.6**
with non-financial customers	2	25.2	3	14.2	6	20.4	4	8.2	6	11.6	**7**	**7.2**
FX options and other products[2]	60	4.8	119	6.2	212	6.4	207	5.2	337	6.3	**254**	**5.0**
with reporting dealers	28	47.1	49	41.4	62	29.2	60	29.1	99	29.4	**83**	**32.8**
with other financial institutions	15	26.0	44	36.6	91	42.8	113	54.7	207	61.3	**141**	**55.3**
with non-financial customers	16	26.8	21	17.9	59	28.0	33	16.1	31	9.3	**30**	**11.9**
Total	1,239	100.0	1,934	100.0	3,324	100.0	3,971	100.0	5,355	100.0	**5,088**	**100.0**
with reporting dealers	719	58.1	1,018	52.6	1,392	41.9	1,544	38.9	2,072	38.7	**2,136**	**42.0**
with other financial institutions	346	27.9	634	32.8	1,339	40.3	1,896	47.7	2,812	52.5	**2,571**	**50.5**
with non-financial customers	173	14.0	276	14.3	593	17.8	532	13.4	472	8.8	**381**	**7.5**
Local	525	42.4	743	38.4	1,274	38.3	1,393	35.1	2,259	42.2	**1,803**	**35.4**
Cross-border	713	57.5	1,185	61.2	2,051	61.7	2,578	64.9	3,096	57.8	**3,285**	**64.6**

[1] Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). [2] The category "other FX products" covers highly leveraged transactions and/or trades whose notional amount is variable and where a decomposition into individual plain vanilla components was impractical or impossible.

OTC foreign exchange turnover by instrument, currency and counterparty

Net-net basis,[1] daily averages in April 2016, in billions of US dollars — Table 5

Instrument/currency/counterparty	Total	Spot transactions	Outright forwards	Foreign exchange swaps	Currency swaps	FX options
Total	5,088	1,654	700	2,383	96	254
By currency						
USD	4,458	1,387	600	2,165	88	218
EUR	1,591	520	178	807	22	64
JPY	1,097	395	151	459	18	74
GBP	650	212	92	305	10	30
AUD	353	144	41	142	7	20
CAD	261	105	34	103	4	14
CHF	243	57	30	150	2	5
CNY	202	68	28	86	3	18
MXN	112	43	12	36	15	6
SEK	113	34	13	59	2	5
NZD	105	40	11	44	1	8
SGD	91	28	8	51	2	3
HKD	88	23	6	57	1	1
NOK	85	29	8	44	0	3
KRW	84	29	35	14	1	5
TRY	71	20	6	40	3	4
INR	58	19	23	13	1	3
RUB	58	24	6	27	1	1
ZAR	51	16	4	24	5	2
BRL	51	13	27	1	2	8
DKK	42	7	5	30	0	0
PLN	35	12	4	18	0	1
TWD	32	9	13	8	0	1
HUF	15	4	2	8	0	1
OTH	230	71	61	77	6	15
By counterparty[3]						
with reporting dealers	2,136	607	189	1,209	46	83
local	678	204	59	376	17	23
cross-border	1,457	403	130	833	29	61
with other financial institutions	2,571	930	431	1,027	43	141
local	901	334	158	344	14	52
cross-border	1,670	596	273	683	29	89
non-reporting banks	1,120	354	136	564	24	42
institutional investors	798	290	171	278	6	52
hedge funds and PTFs[2]	389	200	82	66	9	32
official sector	74	14	14	43	2	1
other	191	71	27	76	3	14
with non-financial customers	381	117	80	147	7	30
local	224	82	55	66	3	17
cross-border	157	35	25	81	4	13
Of which: prime brokered	*887*	*564*	*119*	*143*	*3*	*58*
Of which: retail-driven	*282*	*60*	*22*	*178*	*3*	*19*

[1] Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). [2] Proprietary trading firms. [3] See explanatory notes for definitions of counterparties.

Geographical distribution of OTC foreign exchange turnover[1]

Net-gross basis,[2] daily averages in April, in billions of US dollars and percentages — Table 6

Country	2001		2004		2007		2010		2013		**2016**	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	**Amount**	**%**
Argentina	...	...	1	0.0	1	0.0	2	0.0	1	0.0	**1**	**0.0**
Australia	54	3.2	107	4.1	176	4.1	192	3.8	182	2.7	**135**	**2.1**
Austria	8	0.5	15	0.6	19	0.4	20	0.4	15	0.2	**19**	**0.3**
Bahrain	3	0.2	3	0.1	3	0.1	5	0.1	9	0.1	**6**	**0.1**
Belgium	10	0.6	21	0.8	50	1.2	33	0.6	22	0.3	**23**	**0.4**
Brazil	6	0.3	4	0.1	6	0.1	14	0.3	17	0.3	**20**	**0.3**
Bulgaria	...	...	...	...	1	0.0	1	0.0	2	0.0	**2**	**0.0**
Canada	44	2.6	59	2.3	64	1.5	62	1.2	65	1.0	**86**	**1.3**
Chile	2	0.1	2	0.1	4	0.1	6	0.1	12	0.2	**7**	**0.1**
China	...	...	1	0.0	9	0.2	20	0.4	44	0.7	**73**	**1.1**
Chinese Taipei	5	0.3	9	0.4	16	0.4	18	0.4	26	0.4	**27**	**0.4**
Colombia	0	0.0	1	0.0	2	0.0	3	0.1	3	0.1	**4**	**0.1**
Czech Republic	2	0.1	2	0.1	5	0.1	5	0.1	5	0.1	**4**	**0.1**
Denmark	24	1.4	42	1.6	88	2.1	120	2.4	117	1.8	**101**	**1.5**
Estonia	...	...	0	0.0	1	0.0	1	0.0	0	0.0	**...**	**...**
Finland	2	0.1	2	0.1	8	0.2	31	0.6	15	0.2	**14**	**0.2**
France	50	2.9	67	2.6	127	3.0	152	3.0	190	2.8	**181**	**2.8**
Germany	91	5.4	120	4.6	101	2.4	109	2.2	111	1.7	**116**	**1.8**
Greece	5	0.3	4	0.2	5	0.1	5	0.1	3	0.0	**1**	**0.0**
Hong Kong SAR	68	4.0	106	4.1	181	4.2	238	4.7	275	4.1	**437**	**6.7**
Hungary	1	0.0	3	0.1	7	0.2	4	0.1	4	0.1	**3**	**0.1**
India	3	0.2	7	0.3	38	0.9	27	0.5	31	0.5	**34**	**0.5**
Indonesia	4	0.2	2	0.1	3	0.1	3	0.1	5	0.1	**5**	**0.1**
Ireland	9	0.5	7	0.3	11	0.3	15	0.3	11	0.2	**2**	**0.0**
Israel	1	0.1	5	0.2	8	0.2	10	0.2	8	0.1	**8**	**0.1**
Italy	18	1.0	23	0.9	38	0.9	29	0.6	24	0.4	**18**	**0.3**
Japan	153	9.0	207	8.0	250	5.8	312	6.2	374	5.6	**399**	**6.1**
Korea	10	0.6	21	0.8	35	0.8	44	0.9	48	0.7	**48**	**0.7**
Latvia	...	...	2	0.1	3	0.1	2	0.0	2	0.0	**1**	**0.0**
Lithuania	...	...	1	0.0	1	0.0	1	0.0	1	0.0	**0**	**0.0**
Luxembourg	13	0.8	15	0.6	44	1.0	33	0.7	51	0.8	**37**	**0.6**
Malaysia	1	0.1	2	0.1	3	0.1	7	0.1	11	0.2	**8**	**0.1**
Mexico	9	0.5	15	0.6	15	0.4	17	0.3	32	0.5	**20**	**0.3**
Netherlands	31	1.8	52	2.0	25	0.6	18	0.4	112	1.7	**85**	**1.3**
New Zealand	4	0.2	7	0.3	13	0.3	9	0.2	12	0.2	**10**	**0.2**
Norway	13	0.8	14	0.6	32	0.7	22	0.4	21	0.3	**40**	**0.6**
Peru	0	0.0	0	0.0	1	0.0	1	0.0	2	0.0	**1**	**0.0**
Philippines	1	0.1	1	0.0	2	0.1	5	0.1	4	0.1	**3**	**0.0**
Poland	5	0.3	7	0.3	9	0.2	8	0.2	8	0.1	**9**	**0.1**
Portugal	2	0.1	2	0.1	4	0.1	4	0.1	4	0.1	**2**	**0.0**
Romania	...	...	...	...	3	0.1	3	0.1	3	0.1	**3**	**0.0**
Russia	10	0.6	30	1.1	50	1.2	42	0.8	61	0.9	**45**	**0.7**
Saudi Arabia	2	0.1	2	0.1	4	0.1	5	0.1	5	0.1	**5**	**0.1**
Singapore	104	6.1	134	5.1	242	5.6	266	5.3	383	5.7	**517**	**7.9**
Slovakia	1	0.0	2	0.1	3	0.1	0	0.0	1	0.0	**2**	**0.0**
Slovenia	0	0.0	0	0.0	0	0.0	...	...	...	...	**...**	**...**
South Africa	10	0.6	10	0.4	14	0.3	14	0.3	21	0.3	**21**	**0.3**
Spain	8	0.5	14	0.5	17	0.4	29	0.6	43	0.6	**33**	**0.5**
Sweden	25	1.5	32	1.2	44	1.0	45	0.9	44	0.7	**42**	**0.6**
Switzerland	76	4.5	85	3.3	254	5.9	249	4.9	216	3.2	**156**	**2.4**
Thailand	2	0.1	3	0.1	6	0.1	7	0.1	13	0.2	**11**	**0.2**
Turkey	1	0.1	3	0.1	4	0.1	17	0.3	27	0.4	**22**	**0.3**
United Kingdom	542	31.8	835	32.0	1,483	34.6	1,854	36.8	2,726	40.8	**2,426**	**37.1**
United States	273	16.0	499	19.1	745	17.4	904	17.9	1,263	18.9	**1,272**	**19.4**
Total	**1,705**	**100.0**	**2,608**	**100.0**	**4,281**	**100.0**	**5,043**	**100.0**	**6,684**	**100.0**	**6,546**	**100.0**

[1] Data may differ slightly from national survey data owing to differences in aggregation procedures and rounding. The data for the Netherlands are not fully comparable over time due to reporting improvements in 2013. [2] Adjusted for local inter-dealer double-counting (ie "net-gross" basis).

B Explanatory notes

The methodology and structure of the foreign exchange turnover part of the 2016 Triennial Central Bank Survey was unchanged from 2013.

Participating authorities

Central banks and other authorities in 52 jurisdictions participated in the 2016 Triennial Survey. Authorities in the same jurisdictions, plus Estonia, participated in the 2013 survey.

Argentina	Central Bank of Argentina	**Korea**	Bank of Korea
Australia	Reserve Bank of Australia	**Latvia**	Bank of Latvia
Austria	Central Bank of the Republic of Austria	**Lithuania**	Bank of Lithuania
		Luxembourg	Central Bank of Luxembourg
Bahrain	Bahrain Monetary Agency	**Malaysia**	Central Bank of Malaysia
Belgium	National Bank of Belgium	**Mexico**	Bank of Mexico
Brazil	Central Bank of Brazil	**Netherlands**	Netherlands Bank
Bulgaria	Bulgarian National Bank	**New Zealand**	Reserve Bank of New Zealand
Canada	Bank of Canada	**Norway**	Central Bank of Norway
Chile	Central Bank of Chile	**Peru**	Central Reserve Bank of Peru
China	People's Bank of China	**Philippines**	Bangko Sentral ng Pilipinas
	State Administration of Foreign Exchange	**Poland**	National Bank of Poland
		Portugal	Bank of Portugal
Chinese Taipei	Central Bank of China	**Romania**	National Bank of Romania
Colombia	Bank of the Republic	**Russia**	Central Bank of the Russian Federation
Czech Republic	Czech National Bank		
Denmark	Danmarks Nationalbank	**Saudi Arabia**	Saudi Arabian Monetary Agency
Finland	Bank of Finland	**Singapore**	Monetary Authority of Singapore
France	Bank of France	**Slovakia**	National Bank of Slovakia
Germany	Deutsche Bundesbank	**South Africa**	South African Reserve Bank
Greece	Bank of Greece	**Spain**	Bank of Spain
Hong Kong SAR	Hong Kong Monetary Authority	**Sweden**	Sveriges Riksbank
Hungary	Magyar Nemzeti Bank		Statistics Sweden
India	Reserve Bank of India	**Switzerland**	Swiss National Bank
Indonesia	Bank Indonesia	**Thailand**	Bank of Thailand
Ireland	Central Bank of Ireland	**Turkey**	Central Bank of the Republic of Turkey
Israel	Bank of Israel		
Italy	Bank of Italy	**United Kingdom**	Bank of England
Japan	Bank of Japan	**United States**	Federal Reserve Bank of New York

Coverage

The Triennial Survey of foreign exchange turnover covers spot transactions, outright forwards, foreign exchange swaps, currency swaps, currency options and other OTC foreign exchange transactions with exposure to more than one currency.

The basis for reporting was in principle the location of the sales desk of any trade, even if deals entered into in different locations were booked in a central location. Thus, transactions concluded by offices located abroad were not reported by the country of location of the head office, but by that of the office abroad (insofar as the latter was a reporting institution in one of the other reporting countries). Where no sales desk was involved in a deal, the trading desk was used to determine the location of deals.

The survey collected turnover data for both proprietary and commissioned business of the reporting institutions. Commissioned business refers to reporting institutions' transactions as a result of deals as an agent or trustee in their own name, but on behalf of third parties, such as customers or other entities.

Turnover data

Turnover data provide a measure of market activity, and can also be seen as a rough proxy for market liquidity. Turnover is defined as the gross value of all new deals entered into during a given period, and is measured in terms of the nominal or notional amount of the contracts.

No distinction was made between sales and purchases (eg a purchase of $5 million against sterling and a sale of $7 million against sterling would amount to a gross turnover of $12 million). Direct cross-currency transactions were counted as single transactions (eg if a bank sold $5 million of Swiss francs against the Swedish krona, the reported turnover would be $5 million); however, cross-currency transactions passing through a vehicle currency were recorded as two separate deals against the vehicle currency (eg if a bank sold $5 million of Swiss francs against euros first and then used the euros to purchase kronor, the reported turnover would be $10 million). The gross amount of each transaction was recorded once, and netting arrangements and offsets were ignored.

OTC derivatives transactions that are centrally cleared via central counterparties (CCPs) were reported on a pre-novation basis (ie with the original execution counterpart as counterparty). Any post-trade transaction records that arise from central clearing via CCPs (eg through novation) were not reported as additional transactions.

As in the previous foreign exchange surveys, turnover data were collected over a one-month period, the month of April, in order to reduce the likelihood of very short-term variations in activity contaminating the data. The data collected for the survey reflected all transactions entered into during the calendar month of April 2016, regardless of whether delivery or settlement was made during that month. In order to allow comparison across countries, daily averages of turnover were computed by dividing aggregate monthly turnover for the country in question by the number of days in April on which the foreign exchange and derivatives markets in that country were open.

Transactions are reported to the BIS in US dollar equivalents, with non-dollar amounts generally converted into US dollars using the exchange rate prevailing on the date of the trade.

Instruments

The instruments covered in the foreign exchange turnover part of the survey are defined as follows:

Spot transactions	Single outright transactions involving the exchange of two currencies at a rate agreed on the date of the contract for value or delivery (cash settlement) within two business days. The spot legs of swaps are not included among spot transactions but are reported as swap transactions even when they are due for settlement within two days. This means that spot transactions are exclusive of overnight swaps and spot next swaps, as well as other "tomorrow/next day" transactions.
Outright forwards	Transactions involving the exchange of two currencies at a rate agreed 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 (FXAs), non-deliverable forwards (NDFs) and other forward contracts for differences. Outright forwards are generally not traded on organised exchanges, and their contractual terms are not standardised.
Foreign exchange swaps	Transactions involving the actual exchange of two currencies (principal amount only) on a specific date at a rate agreed 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 at the time of the contract (the long leg). Both spot/forward and forward/forward swaps are included. For *turnover*, only the forward leg is reported as such. The spot leg is not reported at all, ie neither as a spot nor as a foreign exchange swap transaction. Short-term swaps carried out as "tomorrow/next day" transactions are also included in this category.
Currency swaps	Contracts which commit two counterparties to exchange streams of interest payments in different currencies for an agreed period of time and/or to exchange principal amounts in different currencies at a pre-agreed exchange rate at maturity.
OTC options	Option contracts that give 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. OTC options include: • The currency swaption: an OTC option to enter into a currency swap contract. • The currency warrant: a long-dated (over one year) OTC currency option.
Other products	Other derivative products are instruments where decomposition into individual plain vanilla instruments such as forwards, swaps or options is impractical or impossible. An example of "other" products is swaps with underlying notional principal in one currency and fixed or floating interest rate payments based on interest rates in currencies other than the notional (differential swaps or "diff swaps").

Counterparties

Reporting institutions were requested to provide for each instrument a breakdown of contracts by counterparty, as follows: reporting dealers, other financial institutions and non-financial customers, with separate information on local and cross-border transactions. The distinction between local and cross-border was determined according to the location of the counterparty and not its nationality. Starting with the 2013 survey of foreign exchange turnover, other financial institutions were further broken down into five subsectors.

Reporting dealers	Financial institutions that participate as reporters in the Triennial Survey. These are mainly large commercial and investment banks and securities houses that (i) participate in the inter-dealer market and/or (ii) have an active business with large customers, such as large corporate firms, governments and non-reporting financial institutions; in other words, reporting dealers are institutions that actively buy and sell currency and OTC derivatives both for their own account and/or in meeting customer demand. In practice, reporting dealers are often those institutions that actively or regularly deal through electronic platforms, such as EBS or Reuters dealing facilities. This category also includes the branches and subsidiaries of institutions operating in multiple locations that do not have a trading desk but do have a sales desk in those locations that conducts active business with large customers. The identification of transactions with reporting dealers allows the BIS to adjust for double-counting in inter-dealer trades.
Other financial institutions	Financial institutions that are not classified as "reporting dealers" in the survey. These are typically regarded as foreign exchange and interest rate derivatives market end users. They mainly cover all other financial institutions, such as smaller commercial banks, investment banks and securities houses, and mutual funds, pension funds, hedge funds, currency funds, money market funds, building societies, leasing companies, insurance companies, other financial subsidiaries of corporate firms and central banks.
Non-reporting banks	Smaller or regional commercial banks, publicly owned banks, securities firms or investment banks not directly participating as reporting dealers.
Institutional investors	Institutional investors such as mutual funds, pension funds, insurance and reinsurance companies and endowments. Primary motives for market participation are to trade FX instruments eg for hedging, investing and risk management purposes. A common label for this counterparty category is "real money investors".
Hedge funds and proprietary trading firms	(i) Investment funds and various types of money managers, including commodity trading advisers (CTAs), which share (a combination of) the following characteristics: they often follow a relatively broad range of investment strategies that are not subject to borrowing and leverage restrictions, with many of them using high levels of leverage; they often have a different regulatory mandate than "institutional investors" and typically cater to sophisticated investors such as high net worth individuals or institutions; and they often hold long and short positions in various markets, asset classes and instruments, with frequent use of derivatives for speculative purposes. (ii) Proprietary trading firms that invest, hedge or speculate for their own account. This category may include specialised high-frequency trading (HFT) firms that employ high-speed algorithmic trading strategies characterised by numerous frequent trades and very short holding periods.
Official sector financial institutions	Central banks, sovereign wealth funds, international financial institutions in the public sector (BIS, IMF etc), development banks and agencies.
Other	All remaining financial institutions (eg retail aggregators) that cannot be classified in any of the four above-mentioned subcategories for other financial institutions.
Non-financial customers	Any counterparty other than those described above, ie mainly non-financial end users, such as corporations and non-financial government entities. May also include private individuals who directly transact with reporting dealers for investment purposes, either on the online retail trading platforms operated by the reporting dealers or by other means (eg giving trading instructions by phone).

Trading relationships

Reporting dealers were requested to identify how much of their total turnover for each instrument and currency pair was attributed to: (i) transactions conducted in a foreign exchange prime brokerage relationship (with the reporting dealer in the role of FX prime broker); and (ii) transactions that are directly or indirectly generated by retail investors. As in previous surveys, reporting dealers were requested to identify how much of their grand total of foreign exchange turnover was attributed to "related party" transactions.

Prime brokers	Institutions (usually large and highly rated banks) facilitating trades for their clients (often institutional funds, hedge funds and other proprietary trading firms). Prime brokers enable their clients to conduct trades, subject to credit limits, with a group of predetermined third-party banks in the prime broker's name. This may also involve granting the client access to electronic platforms that are traditionally available only to large dealers. In an FX prime brokerage relationship, the client trade is normally "given up" to the prime broker, which is interposed between the third-party bank and the client and therefore becomes the counterparty to both legs of the trade.
Retail-driven transactions	Reporting dealers' (i) transactions with "wholesale" financial counterparties that cater to retail investors (ie electronic retail trading platforms and retail margin brokerage firms), and (ii) direct transactions with "non-wholesale" investors (ie private individuals) executed online or by other means (eg phone), if applicable.
Related party trades	Transactions between desks and offices, transactions with branches and subsidiaries, and transactions between affiliated firms. These trades are included regardless of whether the counterparty is resident in the same country as the reporting dealer or in another country. However, trades conducted as back-to-back deals and trades to facilitate internal bookkeeping and internal risk management within a given reporting dealer are excluded, be they on a local or a cross-border basis.

Currencies and currency pairs

All foreign exchange transactions involving the 24 currencies listed in the table below were collected in the survey. This list of currencies for which reporting is compulsory and consistent across all jurisdictions was expanded from eight currencies in the 2010 survey to 24 in the 2013 survey, the latter total being retained for the 2016 survey.[5] These changes in the reporting setup were introduced to better capture offshore trading in non-major currencies, most of which are emerging market currencies.[6]

Currencies collected in the 2016 survey

AUD	CHF	EUR	HUF	KRW	NZD	SEK	TWD
BRL	CNY[1]	GBP	INR	MXN	PLN	SGD	USD
CAD	DKK	HKD	JPY	NOK	RUB	TRY	ZAR

[1] Includes offshore transactions commonly denoted by CNH.

[5] In the past, several technical features in its reporting setup had limited the Triennial Survey's capacity to capture turnover in non-major currencies in a consistent manner globally. This was less of an issue in the past when non-major currencies were mainly traded onshore, but offshore trading of many non-major currencies has expanded significantly. Given the global nature of the Triennial Survey, it is crucial to have consistent reporting of these currencies across all participating jurisdictions.

[6] In previous surveys, only eight "major" currencies were subject to compulsory reporting on a global basis. Reporting of the other "non-major" currencies was only compulsory in the currencies' "home" jurisdictions, whereas the reporting of these currencies' offshore turnover was left to the discretion of the offshore jurisdictions. Potentially inconsistent treatment of non-major currencies across jurisdictions is known to be associated with problems such as "overnetting", which affects the accuracy of the turnover aggregates.

Data were collected for the following 47 currency pairs. Turnover in currency pairs that are not listed was recorded in aggregate under "other" and "residual".

Currency pairs collected in the 2016 survey

	Domestic currency against	USD against	EUR against	JPY against	Residual[1]
G8 currencies	AUD, CAD, CHF, EUR, GBP, JPY, SEK, USD	AUD, CAD, CHF, EUR, GBP, JPY, SEK,	AUD, CAD, CHF, GBP, JPY, SEK	AUD, CAD	
Non-G8 currencies		BRL, CNY, HKD, INR, KRW, MXN, NOK, NZD, PLN, RUB, SGD, TRY, TWD, ZAR	CNY, DKK, HUF, NOK, PLN, TRY	BRL, NZD, TRY, ZAR	
Other	Other[2]	Other[2]	Other[2]	Other[2]	

[1] Transactions that do not involve the domestic currency, USD, EUR or JPY in one leg. [2] Currencies not explicitly listed in the table.

Given the interest in identifying turnover in all reporting countries' currencies, supplementary information for currencies recorded in aggregate under "other" and "residual" was also collected for the following 35 currencies: ARS, AUD, BGN, BHD, BRL, CAD, CHF, CLP, CNY, COP, CZK, DKK, GBP, HKD, HUF, IDR, ILS, INR, KRW, MXN, MYR, NOK, NZD, PEN, PHP, PLN, RON, RUB, SAR, SEK, SGD, THB, TRY, TWD and ZAR.

Transactions conducted in a special unit of account adjusted to inflation (like CLF, COU and MXV) were treated as having been done in the main currency (respectively, CLP, COP and MXN).

Maturities

Transactions in outright forwards and foreign exchange swaps were broken down between the following original maturity bands: seven days or less; over seven days and up to one year; over one year.

For outright forward contracts, the maturity band for the transaction is determined by the difference between the delivery date and the date of the initiation of the contract. For both spot/forward and forward/forward foreign exchange swaps, the maturity band for the contract is determined by the difference between the due date of the second or long leg of the swap and the date of the initiation of the contract.

Elimination of double-counting

Double-counting arises because transactions between two reporting entities are recorded by each of them, ie twice. In order to derive meaningful measures of overall market size, it is therefore necessary to halve the data on transactions between reporting dealers. To permit this, reporters are asked to distinguish deals contracted with other reporters (dealers).

The following methods of adjustment were applied: data on local deals with other reporters were first divided by two, and this figure was subtracted from total gross data to arrive at so-called "net-gross" figures, ie business net of local inter-dealer double-counting. In a second step, data on cross-border deals with other reporters were also divided by two, and this figure was subtracted from total "net-gross" data to obtain so-called "net-net" figures, ie business net of local and cross-border inter-dealer double-counting.

Gross turnover	Minus	= **Net-gross turnover**	Minus	= **Net-net turnover**
Not adjusted for inter-dealer double-counting (ie "gross-gross" basis)	half of the turnover with local reporting dealers	Adjusted for local inter-dealer double-counting (ie "net-gross" basis)	half of the turnover with reporting dealers abroad	Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis)