



BANK FOR INTERNATIONAL SETTLEMENTS



## **Triennial Central Bank Survey**

OTC interest rate  
derivatives turnover  
in April 2013:  
preliminary global  
results

Monetary and Economic Department

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Queries concerning this publication may be addressed to [statistics@bis.org](mailto:statistics@bis.org).

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This publication presents the preliminary global results of the 2013 BIS Triennial Central Bank Survey of turnover in over-the-counter (OTC) interest rate derivatives markets. A separate publication presents the results of turnover in foreign exchange markets ([www.bis.org/publ/rpfx13.htm](http://www.bis.org/publ/rpfx13.htm)). Many participating authorities also publish details of their national results, links to which are available on the BIS website ([www.bis.org/statistics/triennialrep/national.htm](http://www.bis.org/statistics/triennialrep/national.htm)). The preliminary global results for a companion survey on amounts outstanding in OTC derivatives markets will be published in November 2013.

The preliminary results of the 2013 Triennial Survey are subject to change. Final global results will be available before the end of 2013. The December 2013 *BIS Quarterly Review* will include several special feature articles that analyse the results of the 2013 survey.

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## 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	LTL	Lithuanian litas
AUD	Australian dollar	LVL	Latvian lats
BGN	Bulgarian lev	MXN	Mexican peso
BHD	Bahraini dinar	MYR	Malaysian ringgit
BRL	Brazilian real	NOK	Norwegian krone
CAD	Canadian dollar	NZD	New Zealand dollar
CHF	Swiss franc	OTH	other currencies
CLP	Chilean peso	PEN	Peruvian new sol
CNY	Chinese yuan (renminbi)	PHP	Philippine peso
COP	Colombian peso	PLN	Polish zloty
CZK	Czech koruna	RMB	renminbi; see CNY
DKK	Danish krone	RON	new Romanian leu
EUR	euro	RUB	Russian rouble
GBP	pound sterling	SGD	Singapore dollar
HKD	Hong Kong dollar	SAR	Saudi riyal
HUF	Hungarian forint	SEK	Swedish krona
IDR	Indonesian rupiah	THB	Thai baht
ILS	Israeli new shekel	TRY	Turkish lira
INR	Indian rupee	TWD	new Taiwan dollar
JPY	yen	USD	US dollar
KRW	Korean won	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 OTC derivatives markets. By increasing market transparency, the survey aims to help policymakers and market participants to better monitor patterns of activity and exposures in the global financial system. It also helps to inform the current discussions on reforms to OTC markets.

Foreign exchange market activity has been surveyed every three years since 1989, and OTC interest rate derivatives market activity since 1995. The Triennial Survey is coordinated by the BIS under the auspices of the Markets Committee (for the foreign exchange part) and the Committee on the Global Financial System (for the interest rate derivatives part).

The latest survey of turnover took place in April 2013. Central banks and other authorities in 53 jurisdictions participated in the 2013 survey (see page 12). They collected data from about 1,300 banks and other dealers in their jurisdictions and reported national aggregates to the BIS, which then calculated global aggregates.

### Highlights of the 2013 survey

Trading in OTC interest rate derivatives markets averaged \$2.3 trillion per day in April 2013. This is up from \$2.1 trillion in April 2010 and \$1.7 trillion in April 2007. Interest rate swaps were the most actively traded instruments in 2013, at \$1.4 trillion per day, followed by forward rate agreements at \$0.8 trillion.

The growth of interest rate derivatives trading was driven by financial institutions other than reporting dealers. Trading between dealers and non-financial customers contracted between the 2010 and 2013 surveys. So too did inter-dealer activity, which at 35% in 2013 accounted for the lowest share of total turnover since interest rate data were first collected in 1995.

In contrast to foreign exchange markets, where turnover increased in most currencies between 2010 and 2013, the trend in OTC interest rate derivatives markets varied across currencies. The turnover of OTC contracts on euro interest rates increased to \$1.1 trillion, whereas that on US dollar rates was unchanged at \$0.7 trillion and that on yen rates declined to less than \$0.1 trillion. The turnover of interest rate derivatives for several emerging market currencies increased significantly between the 2010 and 2013 surveys, including for the Brazilian real, South African rand and Chinese renminbi.

Changes in the geographical distribution of turnover tended to track the changes across currency segments, increasing in centres where euro and emerging market interest rate contracts are traded and declining in some other centres. The proportion of trading intermediated by sales desks in the United Kingdom increased to 49% in April 2013 from 47% in April 2010.

## 2. OTC interest rate derivatives turnover in April 2013

Turnover in single currency OTC interest rate derivatives went up slightly since the Triennial Central Bank Survey in 2010, notwithstanding the environment of generally low and stable interest rates and major regulatory reforms affecting OTC derivatives markets.<sup>1</sup> Daily average turnover measured in notional amounts rose by 14% to \$2.3 trillion in April 2013 (Graph 1 and Table 1).<sup>2</sup> This was the lowest rate of increase since the inception of the interest rate part of the survey in 1995. That said, it compares to a sharp fall in activity in exchange-traded interest rate contracts; turnover in futures and options on interest rates fell by 38% between April 2010 and April 2013, to \$5 trillion.

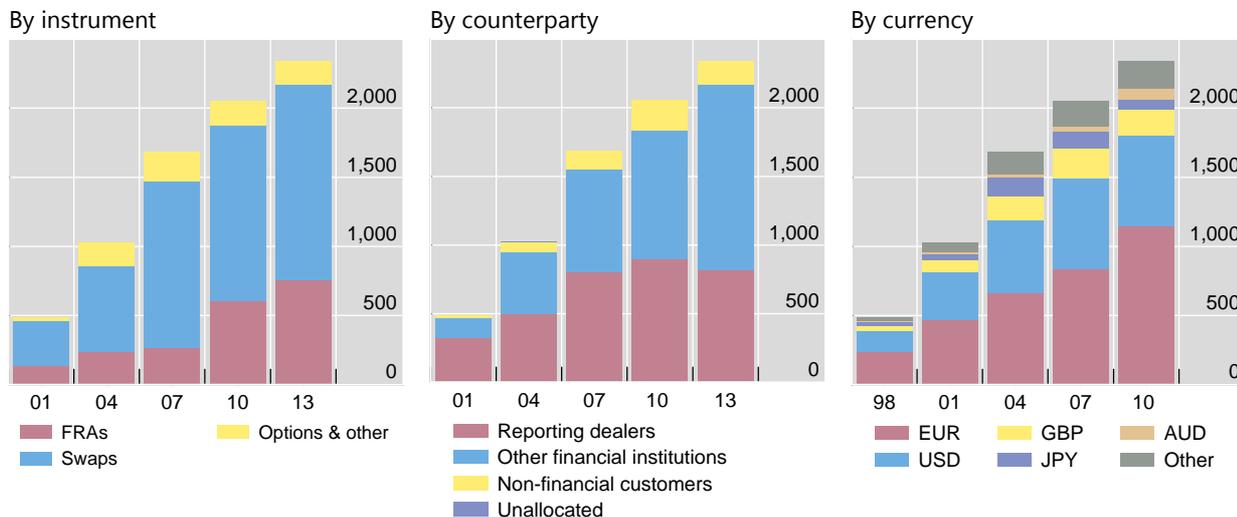
### Turnover by instrument

Forward rate agreements (FRAs) were the OTC product with the largest increase in activity, followed by interest rate swaps. Trading volumes of OTC options and other products fell slightly. Turnover of FRAs rose by 26% to \$754 billion, or just under one third of the total (Graph 1, left-hand panel and Table 1). This increase is particularly noteworthy because short-term interest rates (on which most FRAs are written) are close to record lows in most major markets, and markets do not price in any expectation that they will go up in the near future. Trading in interest rate swaps rose 11% to \$1,415 billion, or 60% of the total. Activity in options and other products fell 4% to \$174 billion.

### Turnover of OTC interest rate derivatives

Net-net basis,<sup>1</sup> daily averages in April, in billions of US dollars

Graph 1



<sup>1</sup> Adjusted for local and cross-border inter-dealer double-counting.

Source: BIS Triennial Central Bank Survey. For additional data by instrument, counterparty and currency, see Tables 1-4 on pages 8-10.

<sup>1</sup> Most derivatives markets reforms, for instance the requirement that transactions be centrally cleared, affect turnover only indirectly, with effects running in both directions. For example, lower counterparty risk owing to central clearing and higher collateralisation could spur turnover, whereas higher transaction costs owing to tighter collateral requirements could reduce activity.

<sup>2</sup> The exchange rate-adjusted rate of growth is virtually identical.

## Turnover by counterparty

The higher trading volume in OTC interest rate derivatives is entirely due to more active trading between reporting dealers and other financial institutions. The volume of such trades increased by 44% to \$1,354 billion, lifting their share in global turnover to 58% (Graph 1, centre panel, and Table 2). The group *other financial institutions* comprises banks that are not reporting dealers; real money investors such as mutual funds, insurance companies or pension funds; hedge funds; special purpose vehicles; as well as any other financial institution that is not classified as a derivatives dealer.

The volume of trades between reporting dealers, which in 2010 was comparable to that between dealers and other financial institutions, declined from \$896 billion to \$816 billion. At 35% of total turnover, the share of inter-dealer trading has fallen to the lowest level since data began in 1995. It is an open question whether this is the result of a reduction in proprietary trading in response to changes in regulation or of substantial changes in how dealers offset the risk from their client positions.

The only instrument category where the share of inter-dealer trading has not fallen is options and other products, possibly because these instruments tend to be more complex and difficult to price. Inter-dealer trades accounted for 41% of turnover in this category, compared to 33% for FRAs and 35% for interest rate swaps. The foreign exchange part of the Triennial Survey shows a similar drop in the share of inter-dealer trading.

Trading by non-financial customers fell 24% to \$169 billion, accounting for 7% of total turnover. Non-financial entities, a group that includes non-financial corporations and governments, predominantly trade interest rate swaps (\$139 billion), followed by FRAs (\$16 billion) and interest rate options and other products (\$13 billion).

OTC interest rate derivatives markets have become more local. Local turnover, where both counterparties reside in the same country, increased by 41% to \$1,065 billion, whereas cross-border trading fell slightly to \$1,274 billion. As a consequence, the share of cross-border trades fell to 54% of the total, compared to 63% three years earlier. This does not necessarily mean that the market has become less international. The increasing concentration of trading in large financial centres documented below suggests that a rising proportion of trading takes place between counterparties that reside in these centres, although they could be headquartered elsewhere.

## Turnover by currency

The euro market remained the segment with the highest turnover in the global OTC interest rate derivatives market, increasing in size to nearly twice that of the US dollar market. Turnover growth in contracts on the rates of other advanced economies varied greatly. Rapid growth in contracts on Australian and Swedish rates contrasted with lower activity in most other advanced economy currencies. Turnover in some emerging market currencies, most notably the Brazilian real, the South African rand and the Chinese renminbi, surged, albeit from a comparatively low base.

Turnover in contracts on euro interest rates went up by 37% to \$1,146 billion, bringing their share in global turnover to just under one half (right-hand panel of Graph 1 and Table 3). Activity in FRAs on euro interest rates almost doubled to \$399 billion, despite low and stable short-term interest rates (Table 4). Turnover in exchange-traded futures and options on short-term euro interest rates was relatively weak in April. It is therefore unlikely that the sharp rate of increase of FRA turnover reflects unusually heavy trading in April. Trading volumes in the euro swap market rose by 24% to \$693 billion. By contrast, turnover in options and other products on euro rates fell by almost one quarter to \$54 billion.

Trading in contracts on US dollar interest rates remained roughly stable at \$657 billion. Higher volumes of interest rate swaps (up 24% to \$374 billion) and options and other products (up 28% to \$89 billion) contrasted with a 31% drop in the turnover of dollar FRAs.

With daily turnover of \$187 billion, sterling remained the third most important currency in the OTC interest rate derivatives market, despite a decline in activity of 13% since the last survey. This drop was driven by a 35% decline in the turnover of sterling-denominated interest rate swaps, which was only partly offset by a sharp rise in FRAs.

Activity in other advanced economy interest rate contracts varied across currencies, with declining volumes in currencies with low interest rates such as the Japanese yen and the Swiss franc and higher turnover in others. Turnover in the Australian dollar more than doubled to \$76 billion, thus overtaking activity in the yen (-44% to \$70 billion). In both currencies, this primarily reflected sharp changes in the trading volumes of interest rate swaps. With Japanese interest rates close to zero and little expectation of any change in the foreseeable future, activity in the yen FRA market appears to have disappeared. Trading in derivatives on Canadian dollar interest rates fell by over a third to \$30 billion, after tripling between the previous two surveys. Turnover in rate contracts on the Swedish krona rebounded to \$36 billion, after a sharp drop between 2007 and 2010. Turnover in FRAs on Swedish rates nearly doubled to \$19 billion. Turnover in contracts on Swiss franc interest rates fell from \$20 billion in 2010 to \$14 billion in the latest survey.

Finally, the period between 2010 and 2013 saw a steep increase in the trading of interest derivatives denominated in some emerging market currencies.<sup>3</sup> Turnover in contracts on Brazilian rates surged to \$16 billion in 2013, from \$3 billion in 2010, whereas that in the South African rand went up to \$16 billion, from \$5 billion in the previous survey. Trading volumes of renminbi interest rate contracts surged from \$2 billion in 2010 to \$15 billion, thus overtaking trading in Swiss franc contracts. By contrast, activity in contracts on Korean rates fell from \$16 billion to \$12 billion.

## Geographical distribution of turnover

The United Kingdom consolidated its role as the main financial centre trading OTC interest rate derivatives. UK-based turnover rose by 9% to \$1,348 billion, or just under one half of the global total (Graph 2 and Table 5).<sup>4</sup> Turnover in the United States slipped 2% to \$628 billion, or 23% of the total, which is in line with the lower share of contracts on US dollar interest rates.

In continental Europe, turnover by sales desks in France inched up to \$202 billion, from \$193 billion in April 2010. The country's share in total turnover remained at 7.3%. Trading in Germany more than doubled to \$101 billion, or one half of turnover in France. Rapid growth was also recorded by sales desks based in Denmark, which reported turnover of \$59 billion, after \$16 billion in 2010. Turnover in Switzerland fell from \$75 billion to \$33 billion.

In the Asia-Pacific region, turnover in Japan dropped from \$90 billion to \$67 billion. By contrast, dealers reported higher turnover in Australia (\$66 billion in 2013, after \$41 billion in 2010), Singapore (\$37 billion, up from \$35 billion) and Hong Kong SAR (\$28 billion, up from \$18 billion).

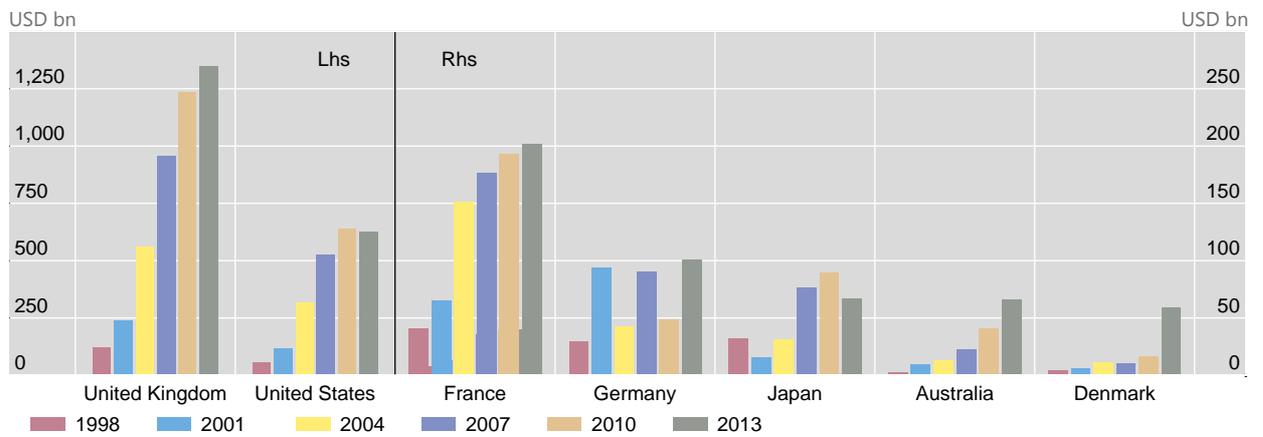
<sup>3</sup> Part of the sharp increase could reflect improved reporting of offshore transactions in these currencies.

<sup>4</sup> The discussion in this section is based on net-gross figures, which strip out local inter-dealer double-counting, whereas that of the previous sections was based on net-net figures, which correct for cross-border as well as local inter-dealer double-counting. Global turnover measured on a net-gross basis was 3.5% higher than on a net-net basis.

## Geographical distribution of OTC interest rate derivatives turnover

Net-gross basis,<sup>1</sup> daily averages in April

Graph 2



<sup>1</sup> Adjusted for local inter-dealer double-counting.

Source: BIS Triennial Central Bank Survey. For additional data by country, see Table 5 on page 11.

### 3. Tables

#### Global OTC interest rate derivatives market turnover by instrument<sup>1</sup>

Net-net basis,<sup>2</sup> daily averages in April, in billions of US dollars

Table 1

Instrument	1998	2001	2004	2007	2010	2013
Interest rate instruments	265	489	1,025	1,686	2,054	2,343
FRAs	74	129	233	258	600	754
Swaps	155	331	620	1,210	1,272	1,415
Options and other products <sup>3</sup>	36	29	171	217	182	174
<i>Memo:</i>						
Turnover at April 2013 exchange rates <sup>4</sup>	308	631	1,072	1,664	2,033	2,343
Exchange-traded derivatives <sup>5</sup>	1,371	2,170	4,521	6,093	8,108	5,046

<sup>1</sup> Single currency interest rate contracts only. <sup>2</sup> Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). <sup>3</sup> The category "other interest rate 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. <sup>4</sup> 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 2013 exchange rates. <sup>5</sup> Sources: FOW TRADEdata; Futures Industry Association; various futures and options exchanges. Interest rate futures and options traded worldwide.

#### Global OTC interest rate derivatives market turnover by instrument and counterparty<sup>1</sup>

Net-net basis,<sup>2</sup> daily averages in April, in billions of US dollars and percentages

Table 2

Instrument/counterparty	1998		2001		2004		2007		2010		2013	
	Amount	%										
Total	265	100	489	100	1,025	100	1,686	100	2,054	100	2,343	100
with reporting dealers	150	56	323	66	494	48	800	47	896	44	816	35
with other financial institutions	89	34	142	29	450	44	747	44	937	46	1,354	58
with non-financial customers	27	10	25	5	79	8	136	8	221	11	169	7
Local	133	50	207	42	414	40	564	33	756	37	1,065	45
Cross-border	132	50	282	58	609	59	1,120	66	1,298	63	1,274	54
FRAs	74	28	129	26	233	23	258	15	600	29	754	32
with reporting dealers	46	61	88	68	112	48	143	55	296	49	245	33
with other financial institutions	21	29	37	28	113	48	89	34	266	44	492	65
with non-financial customers	7	10	5	4	8	3	27	10	37	6	16	2
Swaps	155	58	331	68	620	61	1,210	72	1,272	62	1,415	60
with reporting dealers	87	56	219	66	325	52	552	46	535	42	499	35
with other financial institutions	56	36	98	30	241	39	574	47	585	46	776	55
with non-financial customers	11	7	14	4	55	9	85	7	153	12	139	10
Options and other products <sup>3</sup>	36	14	29	6	171	17	217	13	182	9	174	7
with reporting dealers	17	46	16	55	57	34	106	49	65	36	71	41
with other financial institutions	12	32	7	26	96	56	85	39	86	47	85	49
with non-financial customers	8	21	5	18	16	9	24	11	30	16	13	8

<sup>1</sup> Single currency interest rate contracts only. <sup>2</sup> Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). <sup>3</sup> The category "other interest rate 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.

## Global OTC interest rate derivatives market turnover by currency<sup>1</sup>

Net-net basis,<sup>2</sup> daily averages in April, in billions of US dollars

Table 3

Currency	1998	2001	2004	2007	2010	2013
Total	265	489	1,025	1,686	2,054	2,343
EUR	...	232	461	656	834	1,146
USD	71	152	347	532	654	657
GBP	17	37	90	172	213	187
AUD	3	8	12	19	37	76
JPY	27	27	46	137	124	70
SEK	2	5	13	33	20	36
CAD	7	6	8	15	48	30
BRL <sup>3</sup>	...	0	1	2	3	16
ZAR <sup>3</sup>	1	0	2	3	5	16
CNY <sup>3</sup>	...	...	...	0	2	15
CHF	9	6	10	19	20	14
KRW <sup>3</sup>	...	0	0	5	16	12
MXN <sup>3</sup>	0	0	2	5	5	10
NOK <sup>3</sup>	2	3	8	8	15	9
PLN <sup>3</sup>	...	0	1	2	1	7
INR <sup>3</sup>	...	0	0	3	2	6
NZD <sup>3</sup>	0	0	2	7	4	5
DKK <sup>2</sup>	2	5	2	1	2	4
SGD <sup>3</sup>	0	0	3	4	4	4
THB <sup>3</sup>	...	0	0	0	1	3
HUF <sup>3</sup>	...	0	0	1	0	2
HKD <sup>3</sup>	1	1	4	9	3	2
MYR <sup>3</sup>	0	0	0	0	0	2
ILS <sup>3</sup>	...	...	...	0	0	2
CLP <sup>3</sup>	...	...	...	0	0	1
TWD <sup>3</sup>	0	0	0	1	1	1
CZK <sup>2</sup>	...	0	0	1	0	1
SAR <sup>3</sup>	0	0	0	0	0	0
COP <sup>3</sup>	...	...	...	0	0	0
RUB <sup>3</sup>	...	...	...	0	0	0
LTL <sup>3</sup>	...	...	...	0	0	0
TRY <sup>2</sup>	...	...	...	...	...	0
ARS <sup>3</sup>	...	...	...	...	...	0
PHP <sup>3</sup>	...	...	0	0	1	0
IDR <sup>3</sup>	...	0	0	0	0	0
RON <sup>3</sup>	...	...	...	...	0	0
PEN <sup>3</sup>	...	...	...	0	0	0
BHD <sup>3</sup>	...	...	...	0	...	0
LVL <sup>3</sup>	...	...	...	0	0	0
BGN <sup>3</sup>	...	...	...	...	...	0
OTH	124	4	12	50	36	7

<sup>1</sup> Single currency interest rate contracts only. <sup>2</sup> Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). <sup>3</sup> Turnover for years prior to 2013 may be underestimated owing to incomplete reporting in previous surveys. Methodological changes in the 2013 survey ensured more complete coverage of activity in emerging market and other currencies.

## Global OTC interest rate derivatives market turnover by instrument and currency<sup>1</sup>

Net-net basis,<sup>2</sup> daily averages in April, in billions of US dollars

Table 4

Instrument/currency	1998	2001	2004	2007	2010	2013
Total	265	489	1,025	1,686	2,054	2,343
AUD	3	8	12	19	37	76
BRL <sup>3</sup>	...	0	1	2	3	16
CAD	7	6	8	15	48	30
CNY <sup>2</sup>	...	...	...	0	2	15
EUR	...	232	461	656	834	1,146
GBP	17	37	90	172	213	187
JPY	27	27	46	137	124	70
SEK	2	5	13	33	20	36
USD	71	152	347	532	654	657
ZAR <sup>3</sup>	1	0	2	3	5	16
Other	138	22	46	116	113	95
FRAs	74	129	233	258	600	754
AUD	2	4	5	3	8	11
BRL <sup>3</sup>	...	0	0	...	0	0
CAD	3	1	2	1	9	2
CNY <sup>2</sup>	...	...	...	...	...	0
EUR	...	48	116	66	202	399
GBP	8	12	25	42	53	88
JPY	3	9	0	4	2	0
SEK	1	4	9	18	10	19
USD	23	39	59	98	282	194
ZAR <sup>3</sup>	0	0	1	2	4	11
OTH	34	12	17	24	30	30
Swaps	155	331	620	1,210	1,272	1,415
AUD	1	4	7	14	28	63
BRL <sup>3</sup>	...	0	1	2	2	16
CAD	3	4	5	12	38	27
CNY <sup>2</sup>	...	...	...	0	1	14
EUR	...	173	288	528	561	693
GBP	8	23	59	124	141	92
JPY	14	16	35	110	114	60
SEK	0	1	4	13	7	15
USD	36	100	195	322	302	374
ZAR <sup>3</sup>	0	0	0	1	1	4
OTH	92	9	26	85	77	57
Options and other products <sup>4</sup>	36	29	171	217	182	174
AUD	0	0	1	1	1	2
BRL <sup>3</sup>	...	0	0	0	1	0
CAD	1	1	1	3	1	1
CNY <sup>2</sup>	...	...	...	0	1	0
EUR	...	11	57	62	70	54
GBP	1	2	6	6	19	7
JPY	10	2	10	23	8	10
SEK	0	0	0	1	4	2
USD	12	12	93	113	70	89
ZAR <sup>3</sup>	0	0	0	1	1	0
OTH	11	1	3	7	6	8

<sup>1</sup> Single currency interest rate contracts only. <sup>2</sup> Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). <sup>3</sup> Turnover for years prior to 2013 may be underestimated owing to incomplete reporting in previous surveys. Methodological changes in the 2013 survey ensured more complete coverage of activity in emerging market and other currencies. <sup>4</sup> The category "other interest rate 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.

## Geographical distribution of global OTC interest rate derivatives market turnover<sup>1</sup>

Net-gross basis,<sup>2</sup> daily averages in April, in billions of US dollars and percentages

Table 5

Country	1998		2001		2004		2007		2010		2013	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Argentina	...	...	...	...	...	...	...	...	...	...	0	0.0
Australia	3	0.8	10	1.5	13	1.0	23	1.0	41	1.5	66	2.4
Austria	3	1.0	4	0.6	14	1.0	5	0.2	5	0.2	1	0.0
Bahrain	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Belgium	5	1.4	14	2.1	31	2.3	22	1.0	10	0.4	9	0.3
Brazil	...	...	0	0.0	1	0.1	0	0.0	7	0.3	4	0.1
Bulgaria	...	...	...	...	...	...	0	0.0	0	0.0	0	0.0
Canada	6	1.9	10	1.5	12	0.9	21	0.9	42	1.6	34	1.2
Chile	...	...	...	...	0	0.0	0	0.0	0	0.0	0	0.0
China	...	...	...	...	...	...	...	...	2	0.1	13	0.5
Chinese Taipei	0	0.0	0	0.0	2	0.1	1	0.1	2	0.1	1	0.0
Colombia	...	...	...	...	...	...	0	0.0	0	0.0	0	0.0
Czech Republic	...	...	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0
Denmark	4	1.2	6	0.9	11	0.8	10	0.5	16	0.6	59	2.2
Estonia	...	...	...	...	...	...	0	0.0	0	0.0	0	0.0
Finland	2	0.6	1	0.1	0	0.0	3	0.1	1	0.1	2	0.1
France	41	11.8	65	9.6	151	11.4	176	8.1	193	7.3	202	7.3
Germany	29	8.5	94	13.9	43	3.2	90	4.2	48	1.8	101	3.7
Greece	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hong Kong SAR	2	0.7	3	0.4	11	0.8	17	0.8	18	0.7	28	1.0
Hungary	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0
India	...	...	0	0.0	1	0.1	3	0.2	3	0.1	3	0.1
Indonesia	...	...	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ireland	2	0.5	6	0.9	12	0.9	7	0.3	7	0.3	3	0.1
Israel	...	...	...	...	...	...	...	...	...	...	0	0.0
Italy	4	1.2	24	3.5	38	2.8	30	1.4	27	1.0	24	0.9
Japan	32	9.2	16	2.3	31	2.3	76	3.5	90	3.4	67	2.4
Korea	0	0.0	0	0.0	1	0.1	5	0.2	11	0.4	8	0.3
Latvia	...	...	...	...	...	...	...	...	...	...	...	...
Lithuania	...	...	...	...	0	0.0	0	0.0	0	0.0	...	...
Luxembourg	2	0.6	4	0.7	7	0.6	3	0.2	2	0.1	0	0.0
Malaysia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mexico	0	0.1	0	0.1	1	0.1	3	0.1	1	0.1	2	0.1
Netherlands	4	1.0	24	3.6	19	1.4	27	1.2	61	2.3	29	1.0
New Zealand	0	0.1	0	0.0	1	0.1	3	0.1	2	0.1	3	0.1
Norway	3	0.8	3	0.4	5	0.4	7	0.3	12	0.5	6	0.2
Peru	...	...	...	...	...	...	0	0.0	0	0.0	0	0.0
Philippines	...	...	...	...	0	0.0	0	0.0	1	0.0	0	0.0
Poland	...	...	0	0.1	1	0.1	3	0.1	2	0.1	3	0.1
Portugal	1	0.3	0	0.0	1	0.1	1	0.0	1	0.0	1	0.0
Romania	...	...	...	...	...	...	0	0.0	0	0.0	0	0.0
Russia	...	...	...	...	...	...	...	...	...	...	0	0.0
Saudi Arabia	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Singapore	5	1.6	3	0.5	9	0.6	57	2.6	35	1.3	37	1.3
Slovakia	...	...	0	0.0	...	...	...	...	0	0.0	0	0.0
Slovenia	...	...	...	...	...	...	0	0.0	...	...	...	...
South Africa	1	0.2	1	0.1	3	0.2	4	0.2	6	0.2	11	0.4
Spain	3	0.8	20	3.0	12	0.9	17	0.8	31	1.2	14	0.5
Sweden	4	1.0	3	0.5	7	0.6	12	0.6	18	0.7	17	0.6
Switzerland	6	1.7	10	1.4	12	0.9	61	2.8	75	2.8	33	1.2
Thailand	...	...	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0
Turkey	...	...	...	...	0	0.0	0	0.0	0	0.0	0	0.0
United Kingdom	123	35.8	238	35.2	563	42.3	957	44.0	1,235	46.6	1,348	48.9
United States	58	17.0	116	17.1	317	23.9	525	24.2	642	24.2	628	22.8
<b>Total</b>	<b>344</b>	<b>100.0</b>	<b>676</b>	<b>100.0</b>	<b>1,330</b>	<b>100.0</b>	<b>2,173</b>	<b>100.0</b>	<b>2,649</b>	<b>100.0</b>	<b>2,759</b>	<b>100.0</b>

<sup>1</sup> Single currency interest rate contracts only. Data may differ from national survey data owing to differences in aggregation procedures and rounding. Data for the Netherlands are not fully comparable over time due to reporting improvements in 2013. <sup>2</sup> Adjusted for local inter-dealer double-counting (ie "net-gross" basis).

## 4. Explanatory notes

The format of the interest rate derivatives part of the BIS Triennial Central Bank Survey remained the same in 2013 as in previous surveys.

### Participating authorities

Central banks and other authorities in 53 jurisdictions participated in the 2013 Triennial Survey. The same authorities participated in the 2010 survey.

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

## Coverage

The Triennial Survey of OTC interest rate derivatives turnover covers contracts related to an interest bearing financial instrument whose cash flows are determined by referencing interest rates or another interest rate contract, eg an option on a futures contract to purchase a Treasury bill. This category is restricted to those deals where all the legs are exposed to only one currency's interest rate. Thus it excludes contracts involving the exchange of one or more foreign currencies, eg cross-currency swaps, and other contracts whose predominant risk characteristic is foreign exchange risk, which are to be reported as foreign exchange contracts.

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 52 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. 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.

Turnover data were collected over a one-month period, the month of April, in order to reduce the likelihood that very short-term variations in activity might contaminate the data. The data collected for the survey reflected all transactions entered into during the calendar month of April 2013, regardless of whether delivery or settlement was made during that month. In order to allow comparison across countries, daily averages of turnover are 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. The number of trading days ranged from 19 to 22 in April 2013, with the exception of Saudi Arabia (30 days).

In all cases, 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 Triennial Survey of interest rate derivatives turnover covers forward rate agreements (FRAs), interest rate swaps and interest rate options. The instruments are defined and categorised as follows:

<b>Forward rate agreements (FRAs)</b>	Interest rate forward contracts in which the rate to be paid or received on a specific obligation for a set period of time, beginning at some time in the future, is determined at contract initiation.
<b>Swaps</b>	Agreements to exchange periodic payments related to interest rates on a single currency; can be fixed for floating, or floating for floating based on different indices. This group includes those swaps whose notional principal is amortised according to a fixed schedule independent of interest rates.
<b>OTC options</b>	<p>Option contracts that give the right to pay or receive a specific interest rate on a predetermined principal for a set period of time.</p> <p>OTC options include:</p> <ul style="list-style-type: none"> <li>• Interest rate cap: OTC option that pays the difference between a floating interest rate and the cap rate.</li> <li>• Interest rate floor: OTC option that pays the difference between the floor rate and a floating interest rate.</li> <li>• Interest rate collar: combination of cap and floor.</li> <li>• Interest rate corridor: (i) A combination of two caps, one purchased by a borrower at a set strike and the other sold by the borrower at a higher strike to, in effect, offset part of the premium of the first cap. (ii) A collar on a swap created with two swaptions – the structure and participation interval is determined by the strikes and types of the swaptions. (iii) A digital knockout option with two barriers bracketing the current level of a long-term interest rate.</li> <li>• Interest rate swaption: OTC option to enter into an interest rate swap contract, purchasing the right to pay or receive a certain fixed rate.</li> <li>• Interest rate warrant: OTC option; long-dated (over one year) interest rate option.</li> </ul>
<b>Other products</b>	Other derivative products are instruments where decomposition into individual plain vanilla instruments such as FRAs, swaps or options is impractical or impossible. An example of "other" products are instruments with leveraged payoffs and/or those whose notional principal varies as a function of interest rates, such as swaps based on Libor squared or index-amortising rate 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 had to be determined according to the location of the counterparty and not its nationality.

<b>Reporting dealers</b>	<p>Financial institutions that participate as reporting institutions 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.</p> <p>In practice, reporting dealers are often those institutions that actively or regularly deal through electronic platforms, such as EBS or Reuters dealing facilities.</p> <p>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.</p> <p>The identification of transactions with reporting dealers allows the BIS to adjust for double-counting in inter-dealer trades.</p>
<b>Other financial institutions</b>	<p>Financial institutions that are not classified as “reporting dealers” in the survey. These are typically regarded as foreign exchange and interest rate derivatives markets 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.</p>
<b>Non-financial customers</b>	<p>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).</p>

As in previous surveys, reporting dealers were requested to identify how much of their grand total foreign exchange turnover was attributed to “related party” transactions. Related party trades are defined as transactions between desks and offices, transactions with branches and subsidiaries and 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 that are conducted as back-to-back deals and trades to facilitate internal book-keeping and internal risk management within a given reporting dealer are excluded, be they on a local or cross-border basis.

## Currencies

For turnover of single currency interest rate contracts the same currency breakdown as in the 2010 survey was requested: ARS, AUD, BGN, BHD, BRL, CAD, CHF, CLP, CNY, COP, CZK, DKK, EUR, GBP, HKD, HUF, IDR, ILS, INR, JPY, KRW, LTL, LVL, MXN, MYR, NOK, NZD, PEN, PHP, PLN, RON, RUB, SAR, SEK, SGD, THB, TRY, TWD, USD, ZAR and other.

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). Transactions in offshore renminbi (CNH) are included in CNY.

## 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.

<b>Gross turnover</b>	Minus	<b>= Net-gross turnover</b>	Minus	<b>= Net-net turnover</b>
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)