3 May 2018

Statistical release: OTC derivatives statistics at end-December 2017

The latest BIS over-the-counter (OTC) derivatives statistics refer to end-December 2017. The statistics can be browsed in the BIS Statistics Explorer, searched in the BIS Statistics Warehouse, viewed as PDF tables or downloaded in a single CSV file. Technical terms are explained in the online glossary.

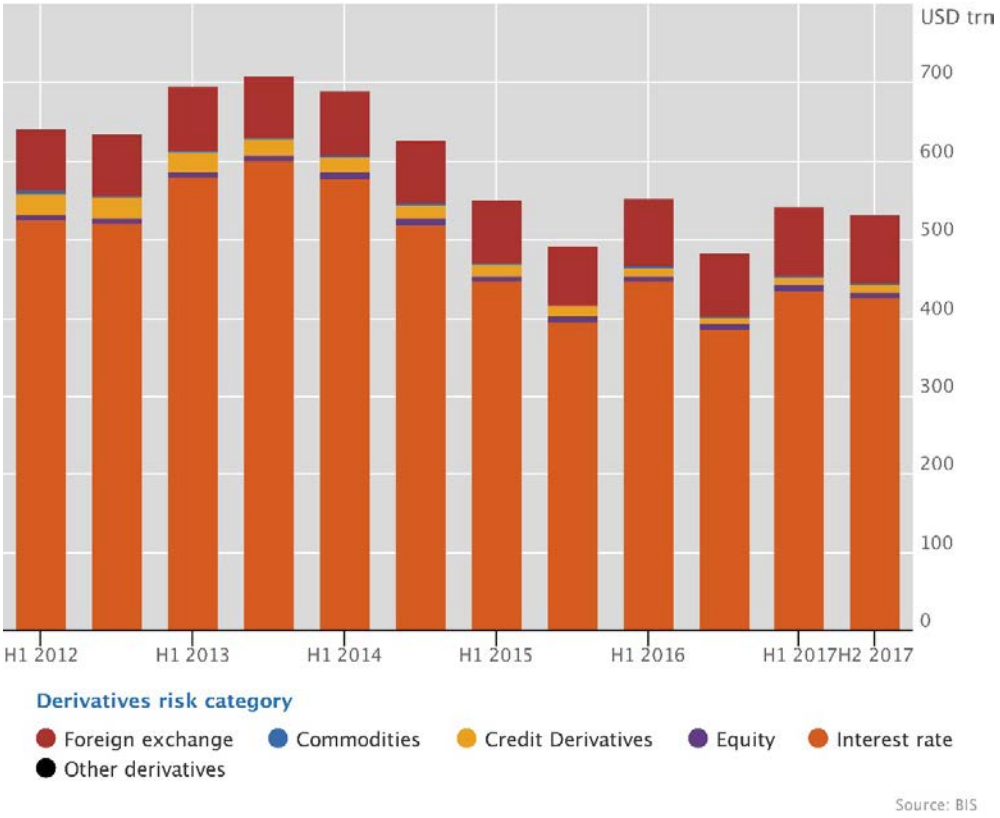
Data are subject to change. Publication dates for revisions and updates are announced in the release calendar. Questions about the BIS OTC derivatives statistics may be addressed to statistics@bis.org.

Contents

1. Highlights from the latest statistics

- The gross market value of outstanding OTC derivatives contracts fell to $11 trillion at end-2017, its lowest level since 2007.
- The share of centrally cleared credit default swaps (CDS) rose to 55% at end-2017, as central clearing made further inroads.
- The BIS revised the full history of the OTC derivatives statistics to incorporate more data from the Triennial Central Bank Survey. The grand total for all contracts remains unchanged, but amounts for all breakdowns are higher due to the allocation of previously undistributed amounts.

Notional amount of OTC derivatives little changed in H2 2017

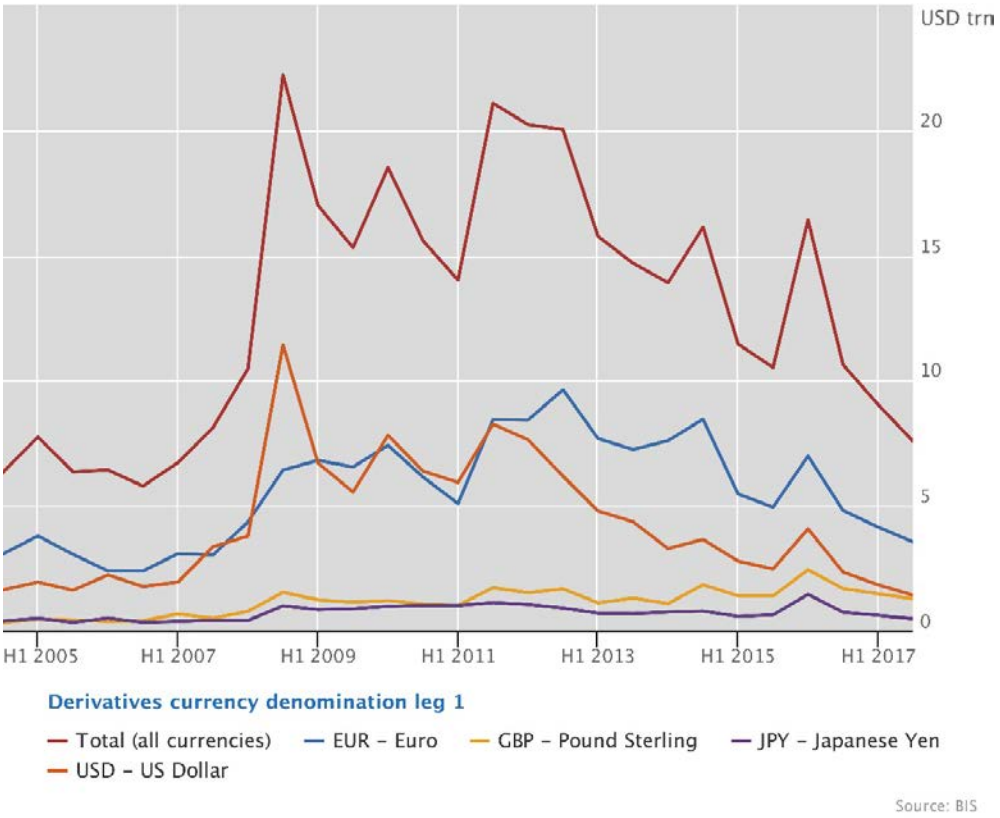


Graph 1: Notional amounts outstanding, by risk category (interactive graph).
Source: BIS OTC derivatives statistics (Table D5.1).

Since 2015, the notional amount of outstanding OTC derivatives contracts has fluctuated in a range between about $480 trillion and $550 trillion (Graph 1). Notional amounts remained in this range in the second half of 2017, ending the year at $532 trillion.

In contrast, the gross market value of OTC derivatives, which provides a more meaningful measure of market and counterparty credit risk, continued to decline, from $13 trillion at end-June 2017 to $11 trillion at end-2017. The last time this value had been so low was end-June 2007. Gross credit exposures, which adjust gross market values for legally enforceable bilateral netting agreements (but not for collateral), also fell to their lowest level since 2007. They declined to $2.7 trillion at end-2017.

Gross market value of interest rate contracts falls to its lowest level since 2007



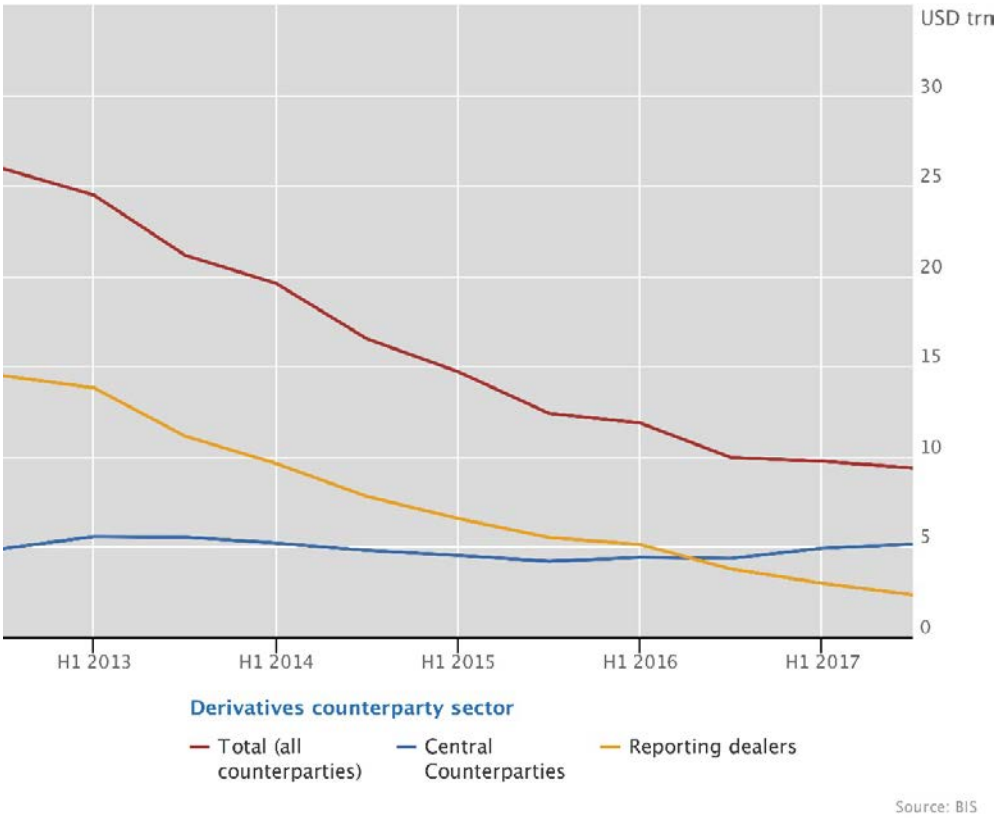
Graph 2: Gross market value of OTC interest rate derivatives, by currency (interactive graph). Source: BIS OTC derivatives statistics (Table D7).

In notional terms, interest rate contracts dominate OTC derivatives markets, and consequently this segment drives overall activity. The notional amount of outstanding OTC interest rate derivatives was little changed in the second half of 2017, ending 2017 at $427 trillion. Contracts with a maturity of one year or less accounted for the largest share, at $191 trillion, followed by those with a maturity between one and five years ($140 trillion).

In contrast to notional amounts, the gross market value of OTC interest rate derivatives fell further in the second half of 2017, to $7.6 trillion – also the lowest level since 2007. The amount denominated in all major currencies declined during this period. The decline is likely to have reflected increases in long-term yields, which reduced the gap between market interest rates on the reporting date and those prevailing at contract inception.

Taking a longer-term perspective, the market value of US dollar contracts has dropped especially markedly. At end-2011, the gross market value of euro- and US dollar-denominated contracts was similar, at about $8.4 trillion each (Graph 2). By end-2017, that of euro-denominated derivatives had fallen to $3.6 trillion, and that of their US dollar equivalents to as little as $1.4 trillion. At end-2017, the market value of US dollar contracts was not far above that of sterling contracts ($1.3 trillion).

Cleared segment rises to 55% of CDS market



Graph 3: Outstanding notional amount of CDS, by sector of counterparty (interactive graph). Source: BIS OTC derivatives statistics (Table D10.1).

Central clearing continued to make inroads in OTC derivatives markets. In the CDS market, the cleared segment (blue line in Graph 3) rose from $4.9 trillion to $5.1 trillion in the second half of 2017, even as the notional amount of outstanding CDS declined slightly. Consequently, the share of outstanding CDS cleared through central counterparties (CCPs) increased from 51% at end-June 2017 to 55% at end-December 2017. Bilateral contracts between reporting dealers declined further in the second half of 2017, to $2.3 trillion. These shifts are consistent with the novation to CCPs of contracts between dealers.

Turning to OTC interest rate derivatives markets, the share of central clearing has remained roughly stable since comprehensive data on CCPs started to be collected in 2016. Reporting dealers' positions booked against CCPs totalled $320 trillion at end-2017, accounting for about 75% of notional amounts outstanding. The share of cleared positions was highest for OTC interest rate derivatives denominated in Canadian dollars, at 88%, and lowest for those in euros, at 72%.

In OTC foreign exchange (FX) derivatives markets, only 2% of notional amounts were centrally cleared at end-2017. While the BIS does not collect a decomposition of FX derivatives into FX swaps and forwards, the cleared amounts were probably concentrated in non-deliverable forwards because they are one of the few FX instruments that CCPs offer for clearing.

Revisions to historical data

Together with this release, the BIS is revising the full history of the OTC derivatives statistics to incorporate more data from the Triennial Central Bank Survey of foreign exchange and OTC derivatives markets. Since 1998, the BIS has collected two sets of statistics on positions in OTC derivatives markets: semiannual data from large derivatives dealers in 12 jurisdictions, and triennial data from smaller dealers in more than 30 additional jurisdictions (Section 2). As a share of notional amounts outstanding, the data collected in the Triennial Survey fell from a high of 13% of the combined data in 1998 to a low of 4% in 2013 and 6% in 2016. Between Triennial Surveys, the BIS uses the triennial data to scale up the semiannual data, thereby providing a more accurate estimate of the global size of OTC derivatives markets.

Previously, the BIS added the triennial data to the semiannual total for all contracts but did not allocate the triennial data across risk categories, ie the scaled-up estimates were published as unallocated amounts. Starting with this release and backdated to 1998, the BIS now allocates the scaled-up amounts across risk categories, instruments, counterparties, currencies and maturities. The total for all contracts remains unchanged, but amounts for all breakdowns are higher because of the redistribution of previously unallocated amounts.

Table 1 shows the impact of the revisions on the OTC derivatives statistics at end-June 2017. The size of the revisions is proportionately larger for foreign exchange and commodity derivatives because these account for a larger share of the risk on the balance sheets of dealers from emerging market economies, who participate in the Triennial Survey, than on the balance sheets of dealers from the advanced economies that report semiannually.

Revisions to BIS OTC derivatives statistics

Outstanding positions at end-June 2017, in billions of US dollars — Table 1

	Notional amounts outstanding			Gross market value		
	Published in Nov 2017	Published in May 2018	Difference compared with Nov 2017	Published in Nov 2017	Published in May 2018	Difference compared with Nov 2017
All contracts	542,435	542,439	0%	12,690	12,683	0%
Foreign exchange	76,980	88,429	15%	2,329	2,626	13%
Interest rate	415,914	435,206	5%	8,499	9,045	6%
Equity-linked	6,836	6,964	2%	527	524	–1%
Commodity	1401	1,762	26%	136	171	26%
Credit	9,868	9,966	1%	304	307	1%
Other	107	112	5%	9	9	0%
Unallocated	31,330	0	–100%	885	0	–100%

2. About the statistics

Reporting basis

The BIS OTC derivatives statistics capture the outstanding positions of banks and other major derivatives dealers at end-June and end-December. They are reported on a consolidated basis: data from branches and (majority-owned) subsidiaries worldwide of a given dealer are aggregated and reported by the parent institution to the authority in the country where the parent institution is headquartered. Intragroup positions, between affiliates of the same institution, are excluded. The reporting guidelines provide more information about how the OTC derivatives statistics are compiled.

The OTC derivatives statistics combine two sources: data reported every six months by derivatives dealers in 12 jurisdictions, and data reported every three years by dealers in more than 30 additional jurisdictions. The BIS uses the triennial data to supplement the semiannual data in arriving at a more accurate estimate of the global size of OTC derivatives markets. The combined results indicate that the semiannual data captured about 94% of global OTC derivatives positions at end-June 2016. The market share of dealers that report semiannually is highest in the credit, equity and interest rate segments (99%, 98% and 96%, respectively, at end-June 2016) and lowest in the commodity and foreign exchange segments (79% and 86%).

Reporting countries

The OTC derivatives statistics are reported to the BIS at an aggregate (country) level rather than individual institution level. A central bank or another national authority collects data from banks and other major derivatives dealers in its jurisdiction, compiles national aggregates and then sends them to the BIS to calculate global aggregates.

About 70 dealers in the following 12 countries report semiannual data on outstanding positions in OTC derivatives markets.

Country	Reporting authority	Country	Reporting authority
Australia	Reserve Bank of Australia	**Spain**	Bank of Spain
Canada	Bank of Canada	**Sweden**	Sveriges Riksbank
France	Bank of France		Statistics Sweden
Germany	Deutsche Bundesbank	**Switzerland**	Swiss National Bank
Italy	Bank of Italy	**United Kingdom**	Bank of England
Japan	Bank of Japan	**United States**	Board of Governors of the Federal Reserve System
Netherlands	Netherlands Bank		

Authorities in Australia and Spain started to submit semiannual data from end-2011, and Belgium submitted semiannual data from end-June 1998 to end-December 2016.

More than 330 dealers from an additional 33 jurisdictions participated in the outstanding positions part of the latest Triennial Central Bank Survey of foreign exchange and OTC derivatives markets, in 2016. The next Triennial Survey of outstanding positions will be conducted in June 2019.

Valuation effects of changes in exchange rates

Data are reported to the BIS in US dollars, with positions in other currencies being converted into US dollars at the exchange rate prevailing at the end of the reference period. Comparisons of amounts outstanding between periods are affected by movements in exchange rates.

Between end-June 2017 and end-December 2017, the overall decline in notional amounts was larger after adjusting for exchange rate movements: –4%, compared with –2% on an unadjusted basis. The appreciation of the euro and pound sterling against the US dollar over this period increased the reported US dollar value of positions denominated in these currencies.

Revisions and breaks

The BIS revised the full history of the OTC derivatives statistics to incorporate more data from the Triennial Central Bank Survey (Section 1). The grand total for all contracts remains unchanged, but amounts for all breakdowns are higher due to the allocation of previously undistributed amounts.

Estimated clearing rate

Comprehensive data on CCPs are available only from end-June 2016. They are reported as an "of which" item within the counterparty sector comprising all financial institutions except reporting dealers; therefore, the latest data for other financial institutions are comparable with historical data. Prior to end-June 2016, CCPs were identified separately only for CDS.

The proportion of outstanding positions against CCPs is typically larger than the proportion of trades cleared through CCPs – known as the clearing rate – because the former counts trades between dealers twice. When a derivatives trade is cleared by a CCP, the initial contract between counterparties A and B is replaced, in an operation called novation, by two new contracts: one between counterparty A and the CCP, and a second between the CCP and counterparty B. In the BIS OTC derivatives statistics, dealers report all outstanding contracts and separately identify contracts between reporting dealers. The BIS then adjusts such inter-dealer positions to eliminate double-counting. However, inter-dealer trades that are subsequently novated to a CCP are not adjusted; each dealer's position with the CCP is included in the global aggregates published by the BIS.

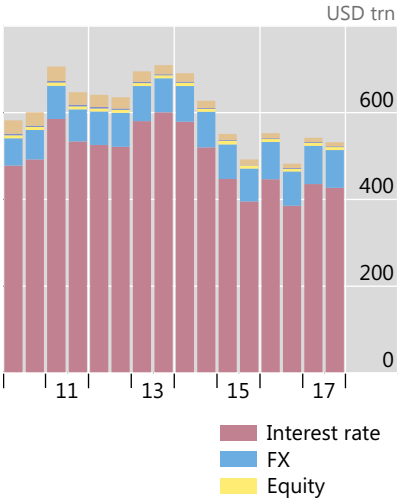
Under the extreme assumption that all positions with CCPs are initially inter-dealer contracts, positions with CCPs could be adjusted by dividing by two. For OTC interest rate derivatives, this would reduce the notional amount outstanding by $160 trillion (half of the $320 trillion reported against CCPs), which in turn would reduce the share of CCPs in outstanding positions to 60% ($160 / ($427 – $160)). The actual clearing rate is likely to be higher than this estimate because some positions with CCPs may initially be trades with institutional investors and other financial customers, which in the OTC derivatives statistics are not double-counted when novated to CCPs.

Annex: Charts

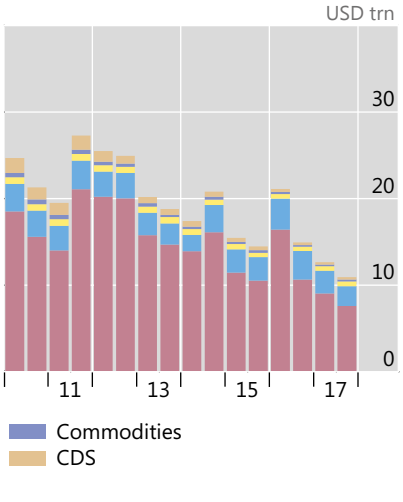
Global OTC derivatives markets

Graph A1

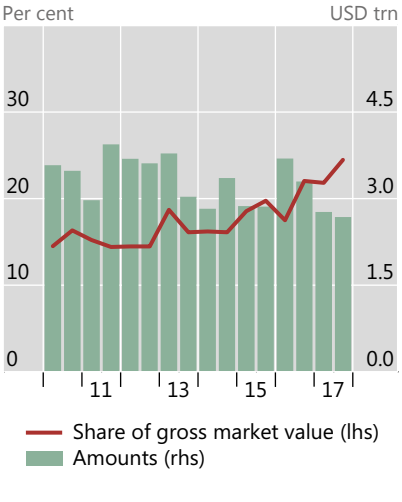
Notional principal[1]



Gross market value[1]



Gross credit exposure[1]



[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

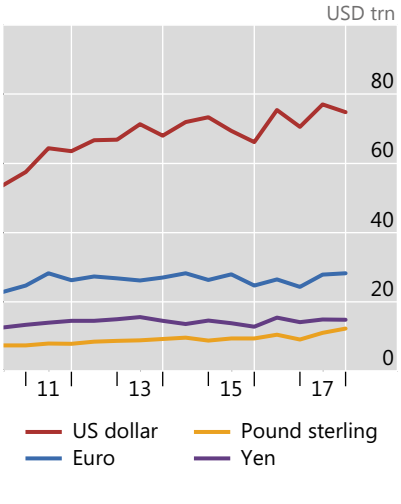
Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

OTC foreign exchange derivatives

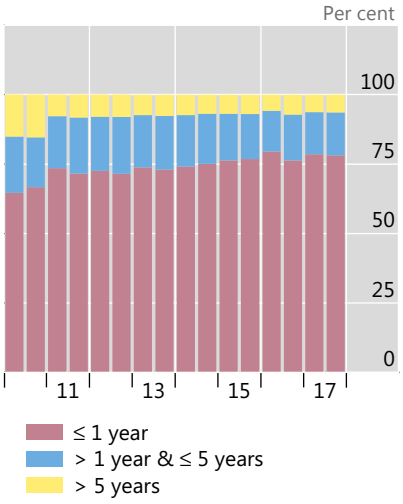
Notional principal[1]

Graph A2

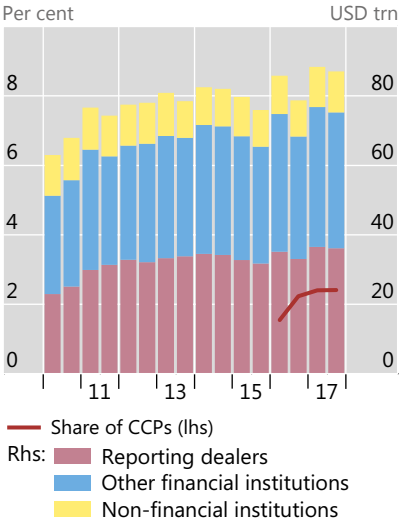
By currency



By maturity



By sector of counterparty

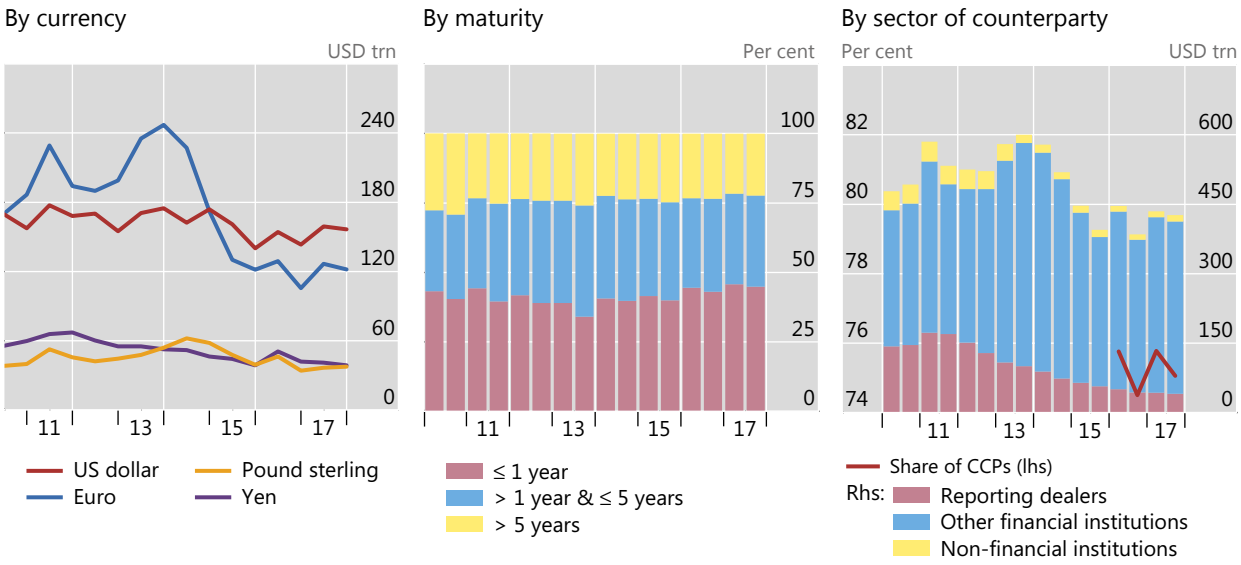


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

OTC interest rate derivatives

Notional principal[1] Graph A3

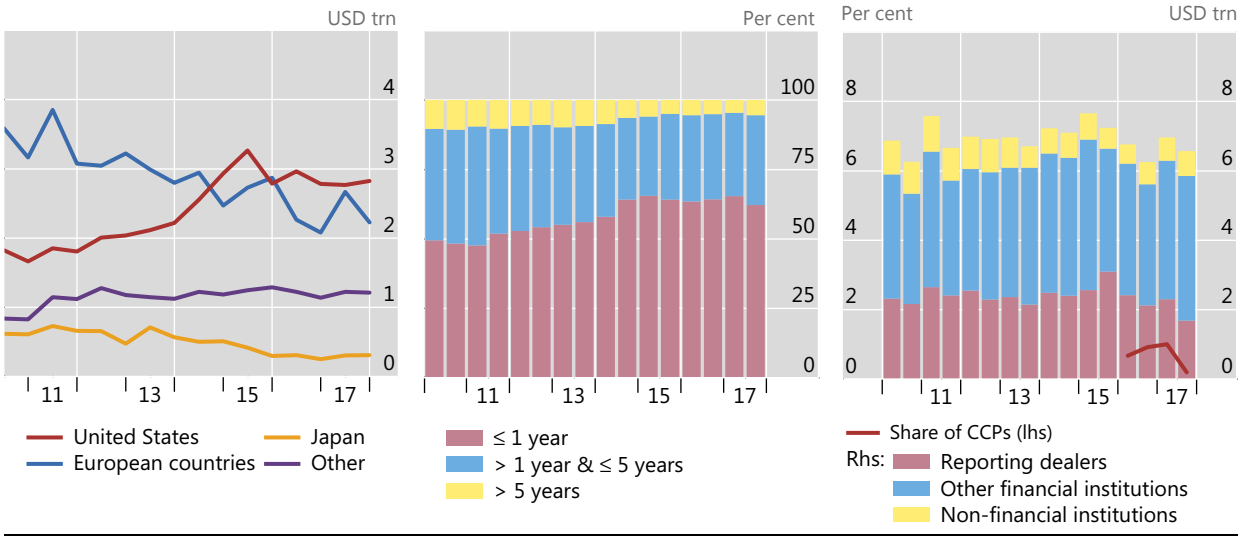


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

OTC equity-linked derivatives

Notional principal[1] Graph A4

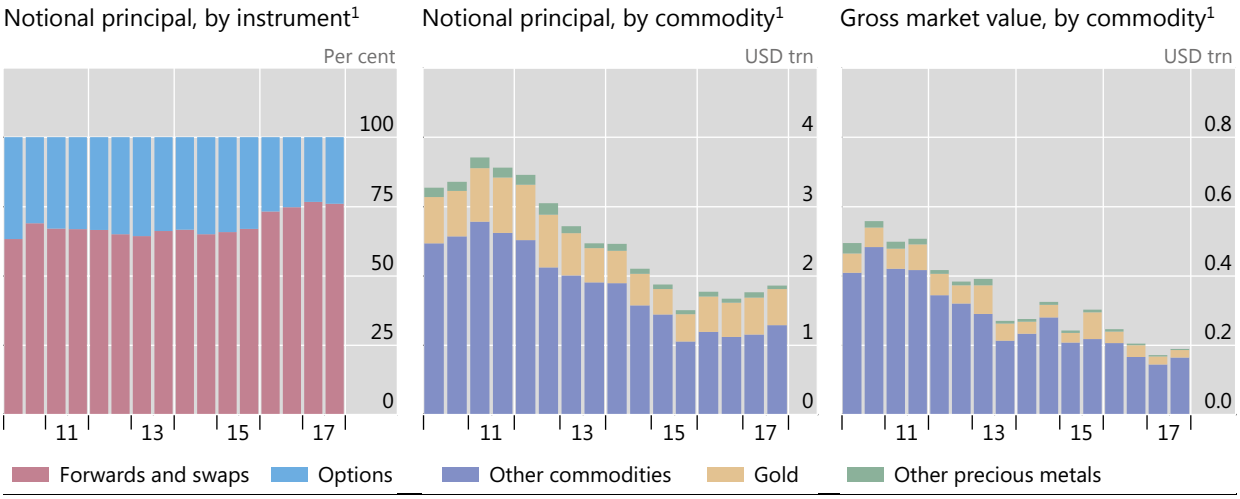


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

OTC commodity derivatives

Graph A5

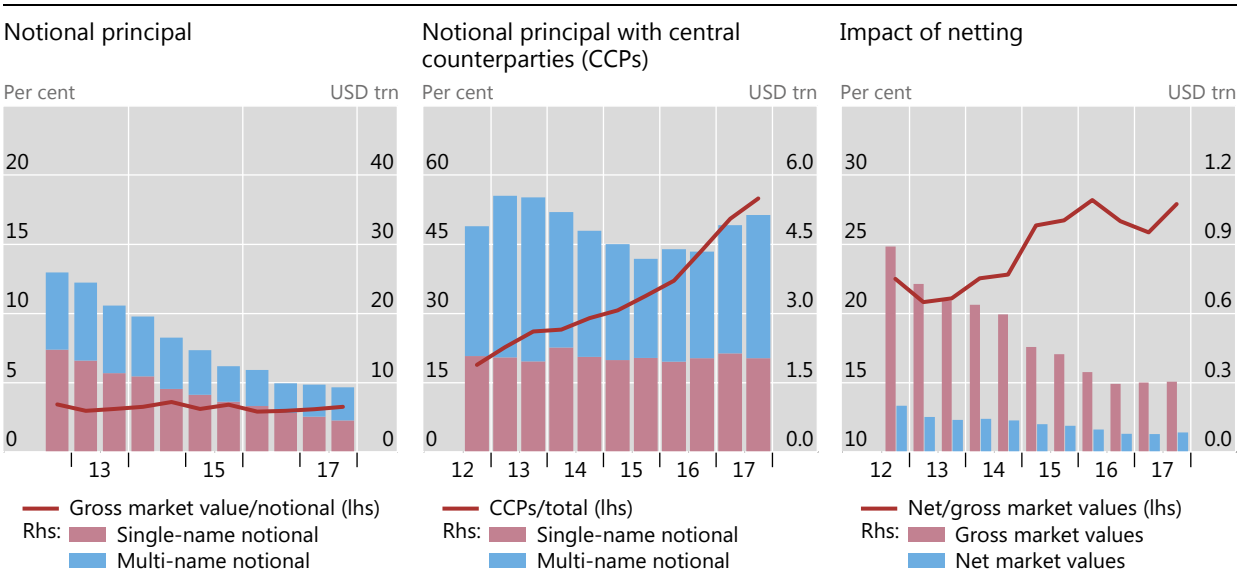


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

Credit default swaps[1]

Graph A6

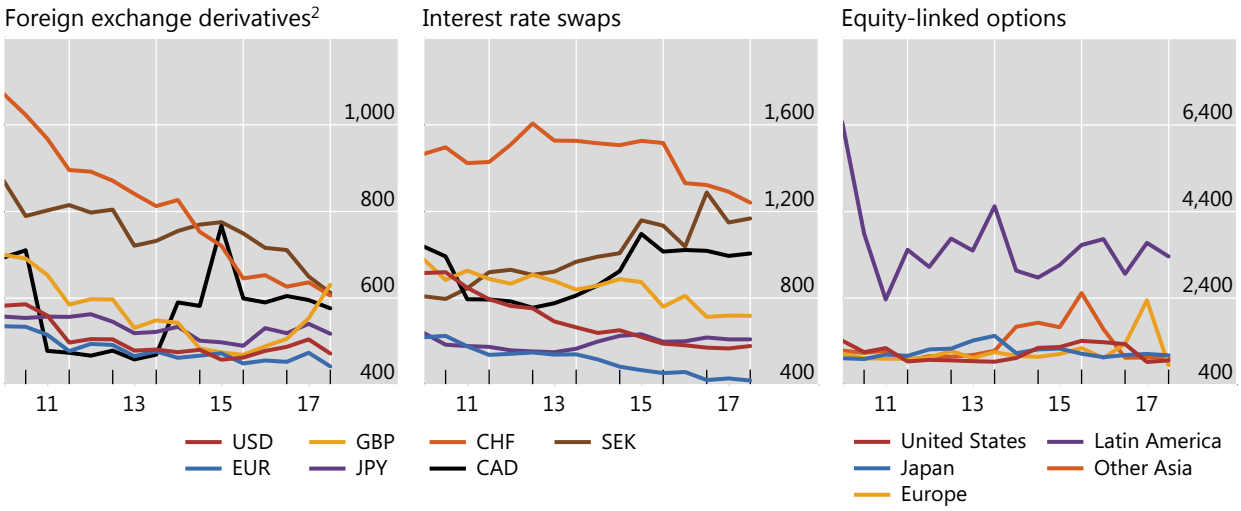


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

Concentration in global OTC derivatives markets

Herfindahl index[1] Graph A7



CAD = Canadian dollar; CHF = Swiss franc; EUR = euro; GBP = pound sterling; JPY = Japanese yen; SEK = Swedish krona; USD = US dollar.

[1] The index ranges from 0 to 10,000, where a lower number indicates that there are many dealers with similar market shares (as measured by notional principal) and a higher number indicates that the market is dominated by a few reporting dealers. [2] Foreign exchange forwards, foreign exchange swaps and currency swaps.

Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).