31 October 2018

Statistical release: OTC derivatives statistics at end-June 2018

The latest BIS over-the-counter (OTC) derivatives statistics refer to end-June 2018. 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.

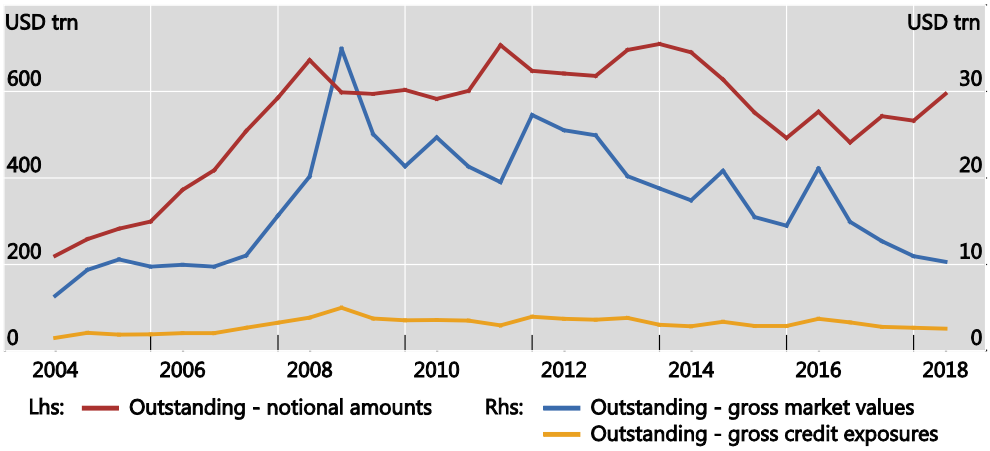
Data are subject to change. Publication dates for revisions and updates are announced in the release calendar. Questions about the BIS OTC derivatives statistics may be addressed to statistics@bis.org.

Contents

1. Highlights from the latest statistics

- The notional value of outstanding OTC derivatives increased from $532 trillion at end-2017 to $595 trillion at end-June 2018. This increase in activity was driven largely by US dollar interest rate contracts, especially short-term contracts.
- The gross market value of OTC derivatives continued to decline, nearing $10 trillion at end-June 2018 from $11 trillion at end-2017 – compared with the peak of $35 trillion observed in 2008. This decline reflected in part ongoing structural changes in OTC derivatives markets.
- The proportion of outstanding OTC derivatives that dealers cleared through central counterparties (CCPs) held steady, at around 76% for interest rate derivatives and 54% for credit default swaps (CDS).

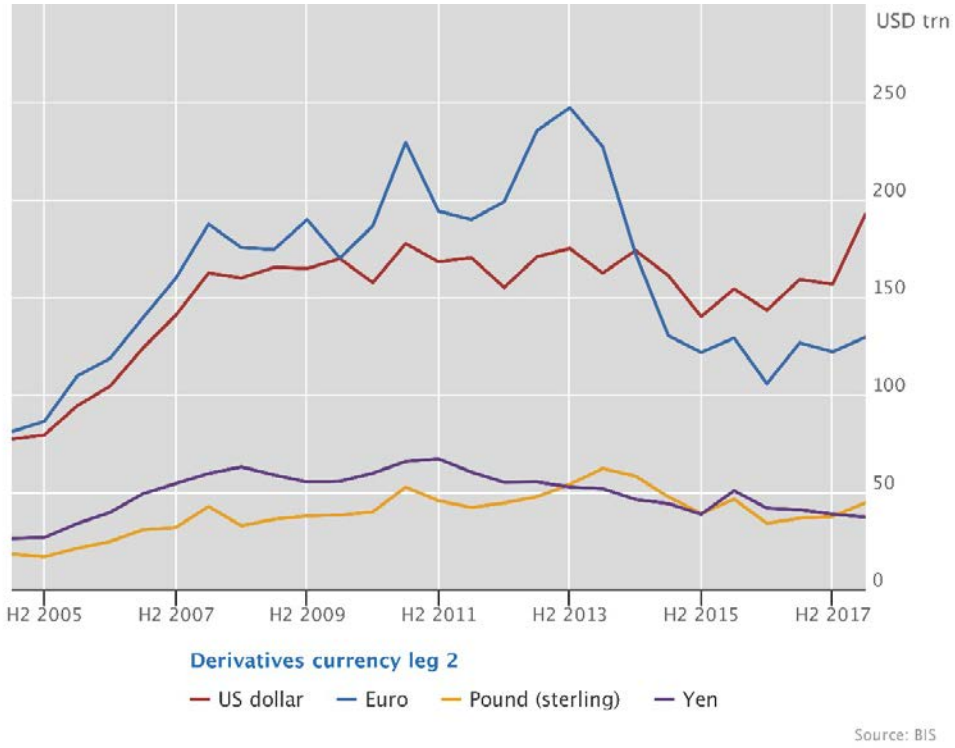
Gross market values declined despite an increase in notional amounts



Graph 1: Outstanding OTC derivatives, USD trillions (interactive graph).
Source: BIS OTC derivatives statistics (Table D5.1).

Activity in OTC derivatives markets increased in the first half of 2018, driven mainly by short-term interest rate contracts. The notional amount of outstanding OTC derivatives contracts – which determines contractual payments – increased to $595 trillion at end-June 2018, its highest level since 2015 (Graph 1, red line). Nevertheless, the gross market value of outstanding derivatives contracts – which provides a more meaningful measure of amounts at risk – continued to decline, to $10 trillion, its lowest level since 2007 (blue line). Gross credit exposures, which adjust gross market values for legally enforceable bilateral netting agreements, remained stable at $2.6 trillion at end-June 2018 (yellow line).

US dollar contracts drove the increase in notionals



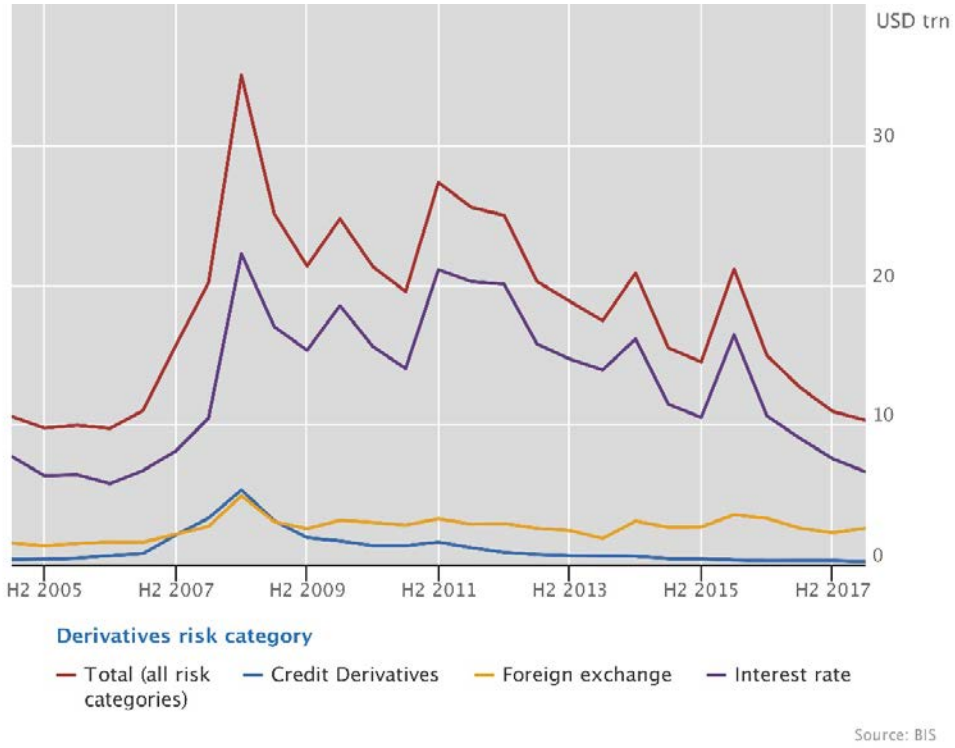
Graph 2: Outstanding notional amounts of OTC interest rate derivatives, USD trillions (interactive graph).
Source: BIS OTC derivatives statistics (Table D7).

The increase in notional amounts outstanding was driven mainly by OTC interest rate derivatives, in particular for US dollar-denominated contracts, which rose from $157 trillion at end-2017 to $193 trillion at end-June 2018 (Graph 2, red line). An increase in US dollar activity was also seen in exchange-traded derivatives markets, where the average daily turnover of futures and options on dollar interest rates climbed to a record high of $9.6 trillion in the month of February. This increased activity may reflect changing expectations about the path of future US dollar interest rates during the period. The notional amounts outstanding of euro-denominated interest rate derivatives also went up over this period, but more modestly, from $122 trillion to $129 trillion (blue line).

The increase in OTC interest rate derivatives activity was concentrated in the short-term segment. The notional amount of outstanding contracts with a remaining maturity up to and including one year rose from $191 trillion to $231 trillion between end-2017 and end-June 2018. The increase for contracts with a remaining maturity between one and five years was less pronounced, from $140 trillion to $155 trillion, and longer-term contracts (with a remaining maturity over five years) held roughly constant, at around $94 trillion.

Turning to OTC foreign exchange (FX) derivatives markets, notional amounts rose to a record high of $96 trillion at end-June 2018, up from $87 trillion at end-December 2017. This was also driven by activity in short-term instruments. In contrast to other OTC derivatives, most FX derivatives require counterparties to repay the notional amount at maturity and thus can be viewed as a form of collateralised borrowing, with the associated foreign currency repayment and liquidity risks.

Market value of interest rate and credit derivatives declined further

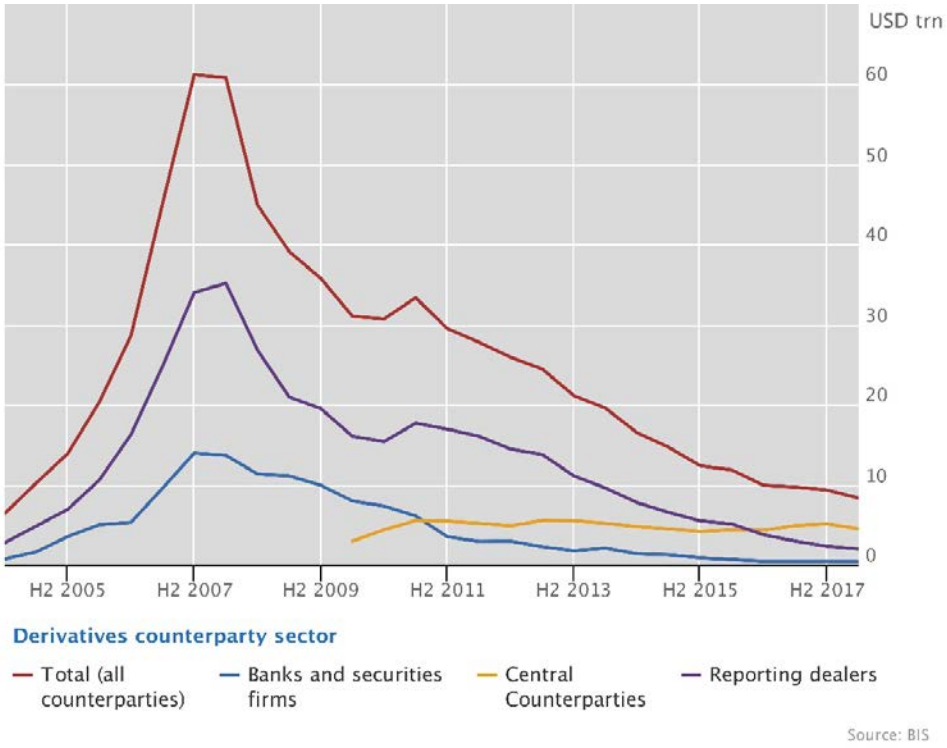


Graph 3: Outstanding gross market values, trillions USD (interactive graph).
Source: BIS OTC derivatives statistics (Table D5.1).

Despite the increase in notional amounts in the first half of 2018, the gross market values of outstanding OTC derivatives continued to decline. Gross market values for all OTC derivatives stood at $10.3 trillion at end-June 2018, down from $11.0 trillion at end-2017 (Graph 3, red line). Over that same period, the gross market value of interest rate derivatives declined by $1 trillion, ending at $6.6 trillion (purple line). Other segments of OTC derivatives markets saw smaller movements, with FX derivatives increasing from $2.3 trillion to $2.6 trillion (yellow line) and credit derivatives decreasing from $0.3 trillion to $0.2 trillion (blue line).

The continuing decline in gross market values reflected in part ongoing structural changes in OTC derivatives markets. These changes include central clearing and greater possibilities for trade compression – that is, the elimination of economically redundant derivatives positions. In addition, in recent periods an increasing number of banks have been recording variation margin on cleared derivatives as settlement payments rather than as transfers of collateral. The practice of so-called settled-to-market (STM) allows counterparties to take ownership of the collateral that they receive. Consequently, daily payments of variation margin are recorded as settlements of the derivatives transactions rather than as transfers of collateral and the market value of the derivatives is reset daily to zero. STM, which is increasingly adopted for cleared swaps in particular, thus results in lower market values for a given derivative.

Clearing in credit default swap markets was steady at 54%



Graph 4: Outstanding notional amounts of CDS, USD trillions (interactive graph).
Source: BIS OTC derivatives statistics (Table D10.1).

Notional amounts of CDS continued to decline, owing to decreased activity between reporting dealers. From end-June 2016 to end-June 2018, total notional amounts dropped from $12 trillion to $8 trillion, amounts vis-à-vis reporting dealers declined from $5 trillion to $2 trillion, and amounts vis-à-vis CCPs remained steady around $4.5 trillion (Graph 4). In the first half of 2018, the share of notional amounts cleared with CCPs was stable at 54%, in contrast to the upward trend over the past few years.

In OTC interest rate derivatives markets, the proportion of contracts cleared was also steady in the first half of 2018, at around 76% overall. Across currencies, the proportion ranged from 73% for euro interest rate contracts to 77% for US dollar contracts and 89% for Canadian dollar contracts. In OTC FX derivatives markets, clearing accounted for only 3.0% of dealers' outstanding contracts at end-June 2018. While low, this was up from 2.4% at end-December 2017.

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 of each year. 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, and intragroup positions (ie 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 can be significantly affected by movements in exchange rates.

Between end-December 2017 and end-June 2018, the overall increase in notional amounts was larger after adjusting for exchange rate movements: 14%, compared with 12% on an unadjusted basis. The reason was the depreciation of the euro and pound sterling against the US dollar over this period, which lowered the reported US dollar value of positions denominated in these currencies.

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 "other financial institutions"; 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.

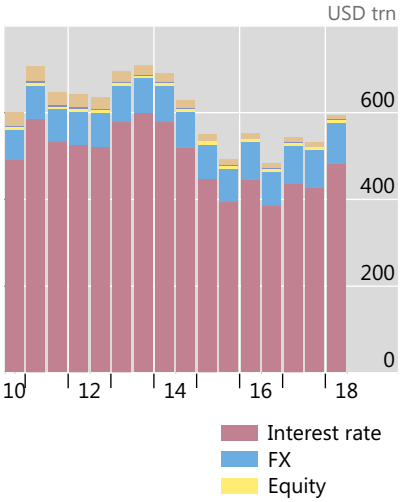
Under the extreme assumption that all positions with CCPs were initially inter-dealer contracts, positions with CCPs could be adjusted by dividing by two (see Graph A8). For OTC interest rate derivatives, this would reduce the notional amount outstanding by $183 trillion (half of the $367 trillion reported against CCPs), which in turn would reduce the share of CCPs in outstanding positions to 62% ($183 / ($481 – $183)). The actual clearing rate is likely to be higher than this estimate because some positions with CCPs may initially be reporting dealers' trades with non-dealers such as institutional investors and other financial customers, which in the OTC derivatives statistics are not double-counted when novated to CCPs.

Annex: Charts

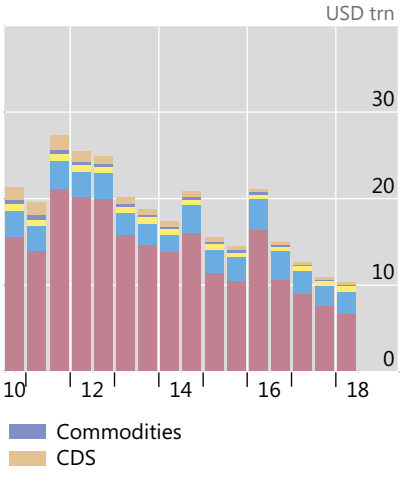
Global OTC derivatives markets

Graph A1

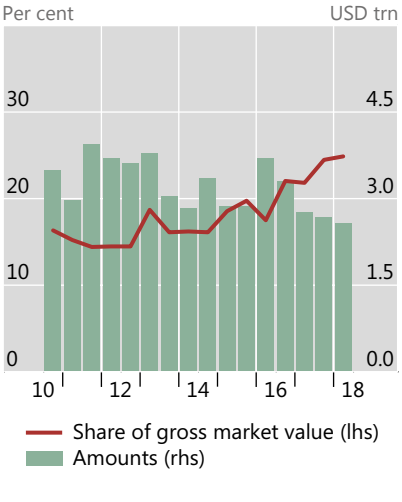
Notional principal[1]



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.

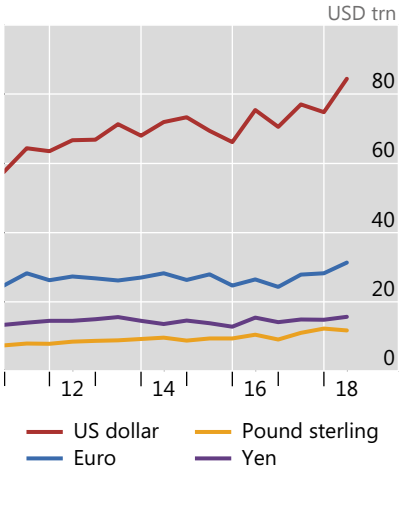
Source: BIS OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

OTC foreign exchange derivatives

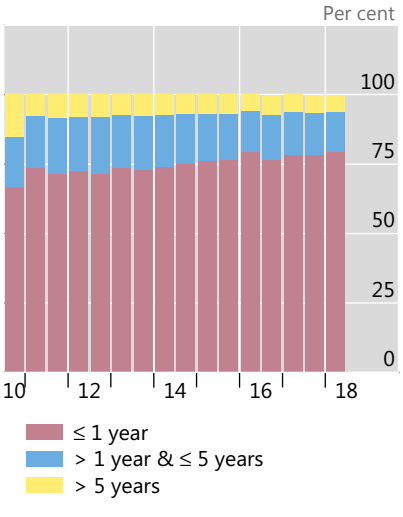
Notional principal[1]

Graph A2

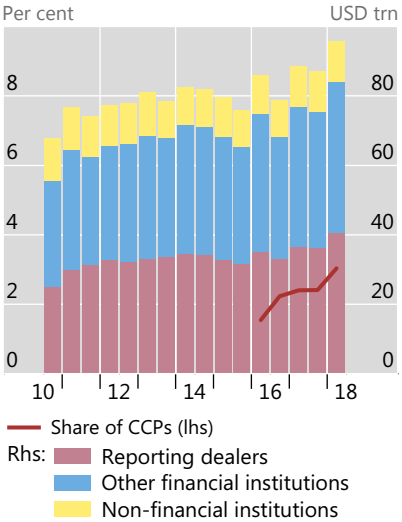
By currency



By maturity



By sector of counterparty

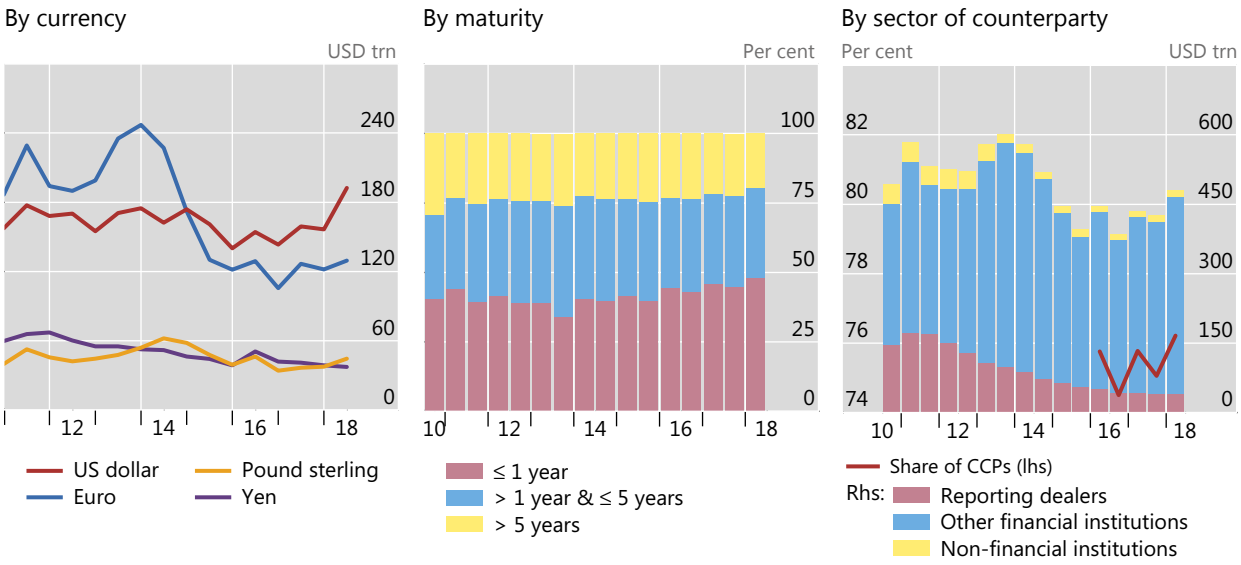


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC interest rate derivatives

Notional principal[1] Graph A3

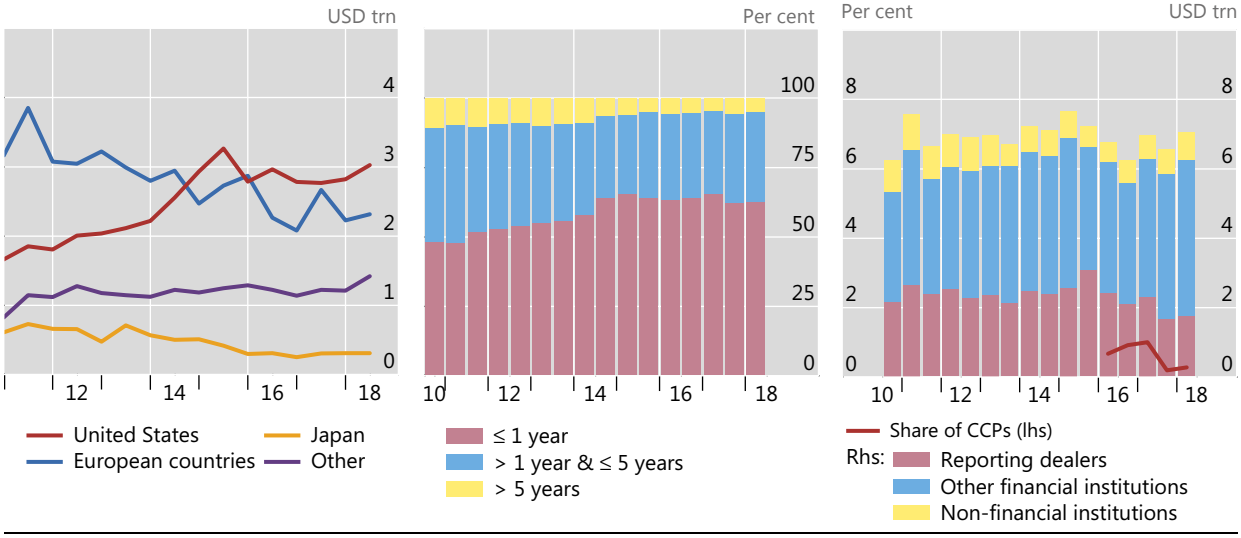


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC equity-linked derivatives

Notional principal[1] Graph A4

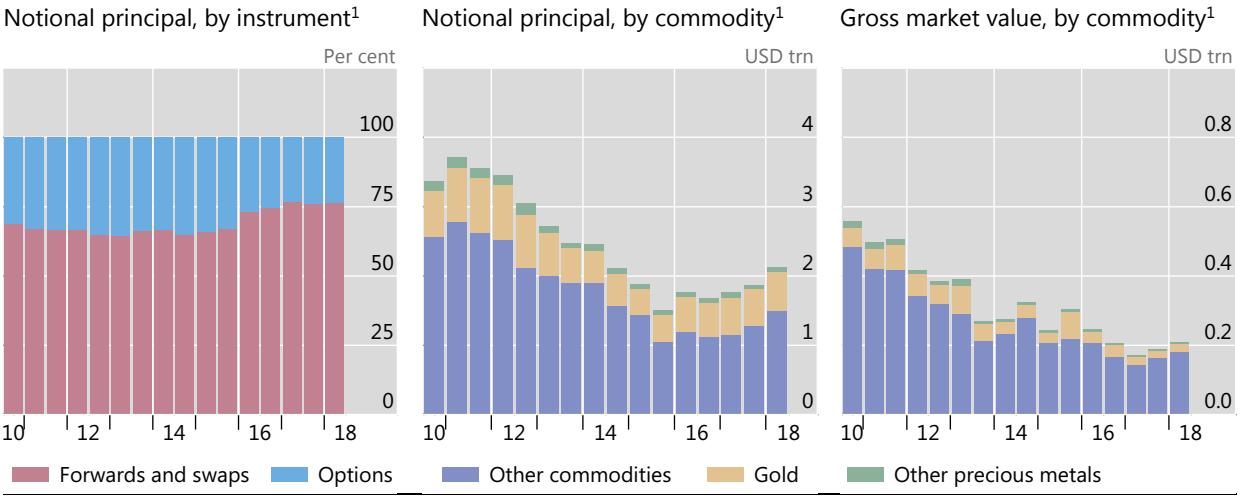


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC commodity derivatives

Graph A5

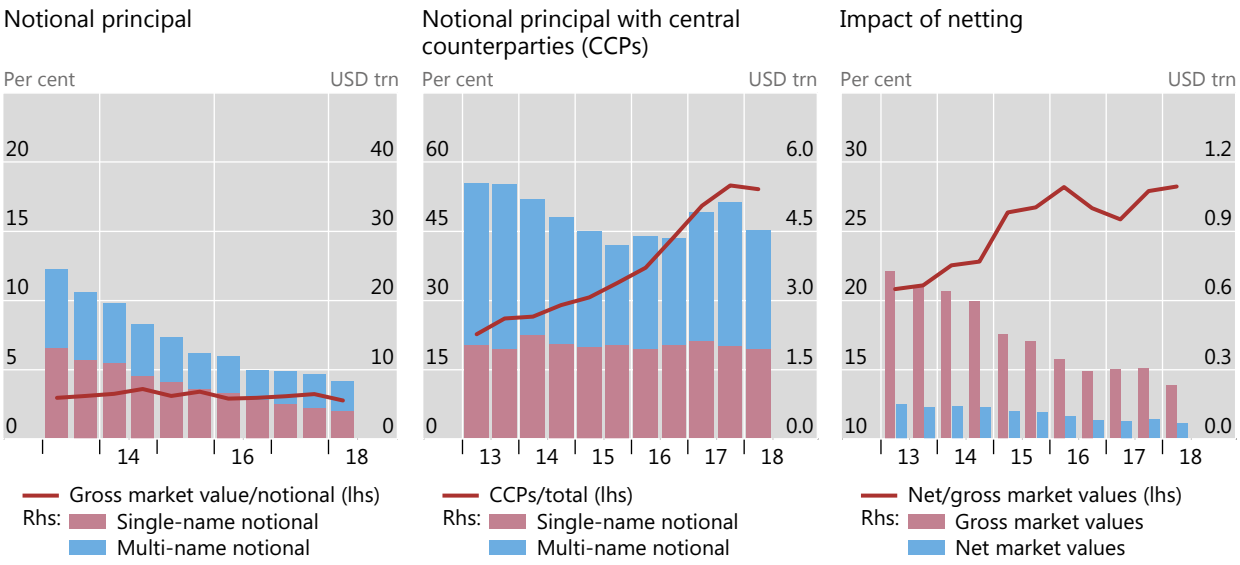


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

Credit default swaps[1]

Graph A6

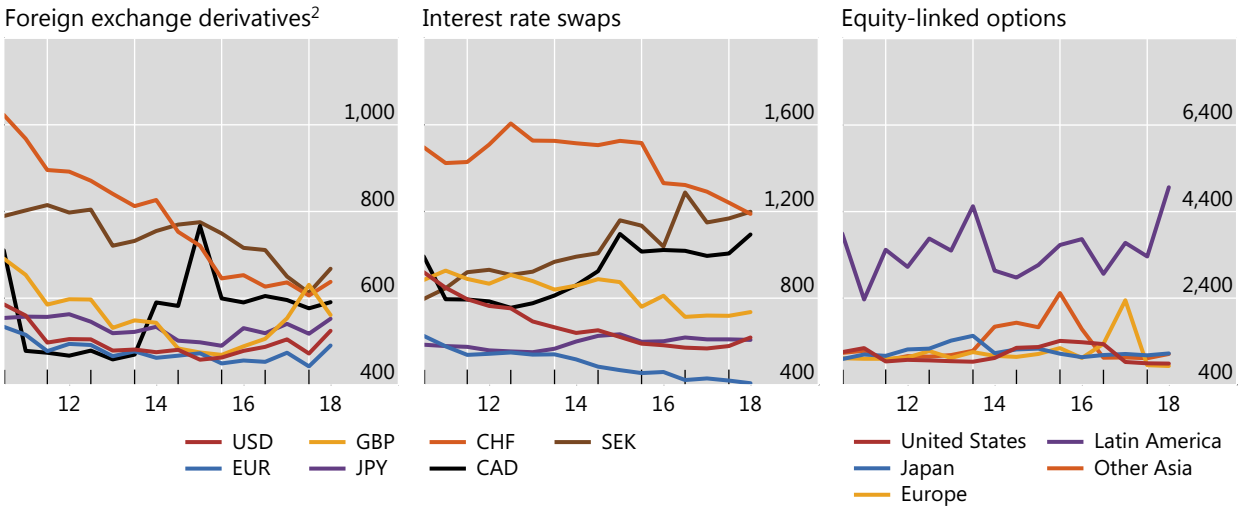


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

Concentration in global OTC derivatives markets

Herfindahl index[1] Graph A7



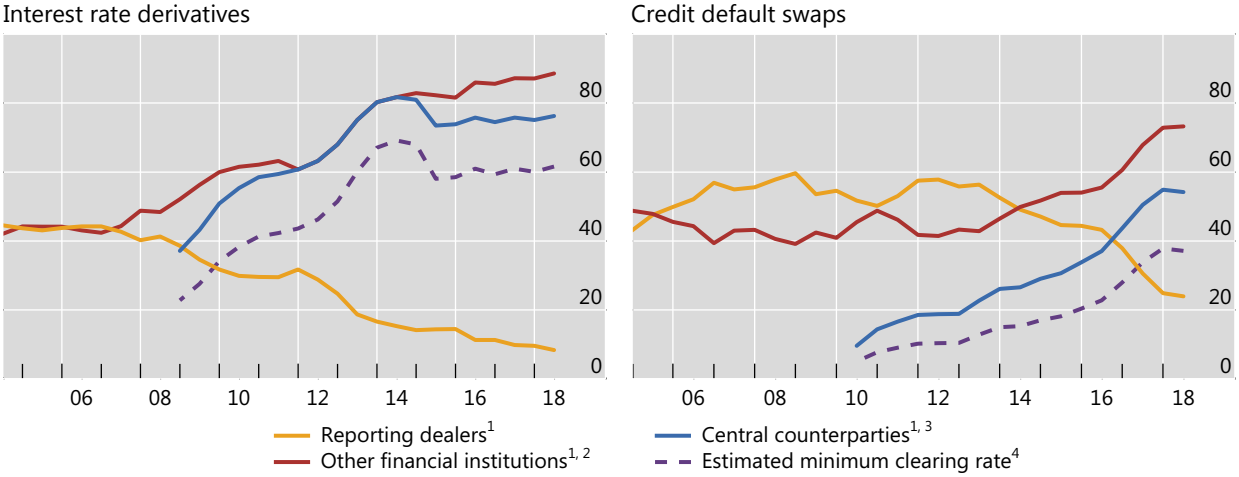
CAD = Canadian dollar; CHF = Swiss franc; EUR = euro; GBP = pound sterling; JPY = Japanese yen; SEK = Swedish krona; USD = US dollar.

[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).

Growth of central clearing

Notional amounts outstanding by counterparty, in per cent Graph A8



[1] As a percentage of notional amounts outstanding against all counterparties. [2] Including central counterparties but excluding reporting dealers. [3] For interest rate derivatives, data for CCPs prior to end-June 2016 are estimated by indexing the amounts reported at end-June 2016 to the growth since 2008 of notional amounts outstanding cleared through LCH's SwapClear service. [4] Proportion of trades that are cleared, estimated as (CCP / 2) / (1 – (CCP / 2)), where CCP represents the share of notional amounts outstanding that dealers report against CCPs. CCPs' share is halved to adjust for the potential double-counting of inter-dealer trades novated to CCPs.

Sources: LCH.Clearnet Group Ltd; BIS OTC derivatives statistics (Table D7 and Table D10.1); BIS calculations.