2 November 2017

Statistical release: OTC derivatives statistics at end-June 2017

The latest BIS over-the-counter (OTC) derivatives statistics refer to end-June 2017. The statistics can be browsed in the BIS Statistics Explorer or viewed as PDF tables. Technical terms are explained in the online glossary.

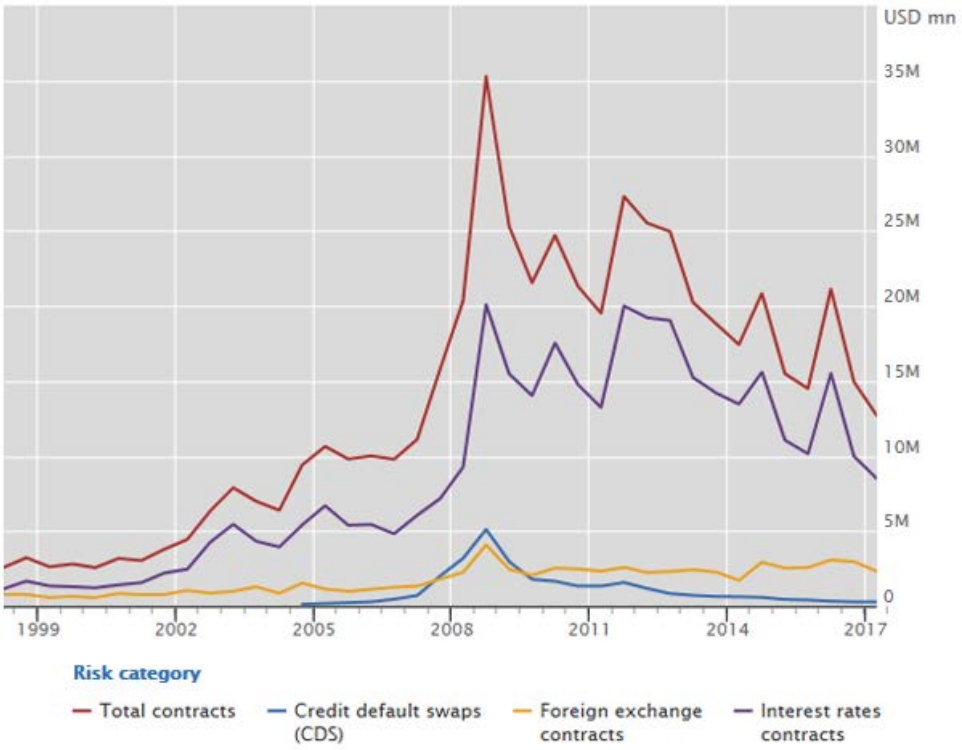
Data are subject to change. Publication dates for revisions and updates are announced in the release calendar. Questions about the BIS OTC derivatives statistics may be addressed to statistics@bis.org.

Contents

1. Highlights from the latest statistics

- The notional amount of outstanding OTC derivatives contracts rebounded to $542 trillion at end-June 2017.
- The gross market value of outstanding OTC derivatives contracts fell below $13 trillion at end-June 2017, its lowest level since 2007.
- The share of centrally cleared credit default swaps (CDS) jumped to 51% at end-June, as central clearing made further inroads.

Market value of OTC derivatives falls to its lowest level since 2007

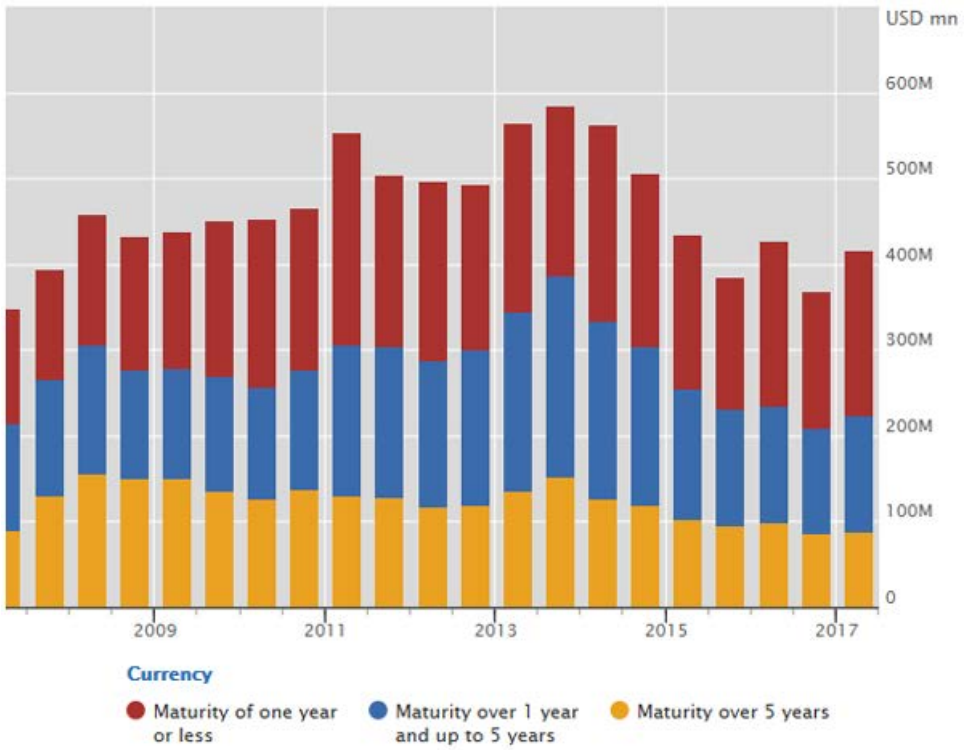


Graph 1: Outstanding gross market value, in trillions (ie in million millions, eg 20M equals 20 million millions, or 20 trillion) of US dollars (interactive graph).
Source: BIS OTC derivatives statistics (Table D5.1).

In the first half of 2017, the notional amount of outstanding OTC derivatives contracts retraced its earlier decline. Notional amounts rose from $482 trillion at end-December 2016 to $542 trillion at end-June 2017, close to their level of a year earlier. In contrast, their gross market value, which provides a more meaningful measure of market and counterparty credit risk, declined further in the first half of 2017, from $15 trillion to less than $13 trillion (Graph 1). The last time the gross market value of all OTC derivatives had been below $13 trillion 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 from $3.3 trillion at end-December 2016 to $2.8 trillion at end-June 2017.

Short-term interest rate contracts drive the rise in notional amounts



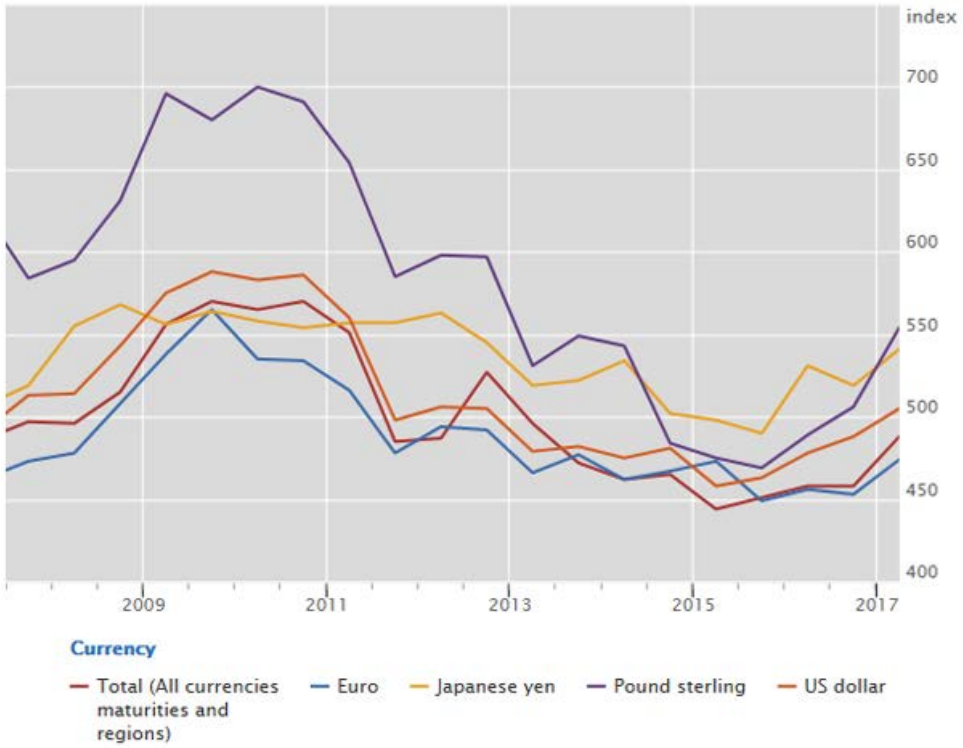
Graph 2: Outstanding notional amount of OTC interest rate derivatives, in trillions (ie in million millions, eg 400M equals 400 million millions, or 400 trillion) of US dollars (interactive graph).
Source: BIS OTC derivatives statistics (Table D9).

In notional terms, interest rate contracts dominate OTC derivatives markets, and consequently activity in this segment drives overall activity. The notional amount of outstanding OTC interest rate derivatives rose from $368 trillion to $416 trillion in the first half of 2017. Contracts denominated in all major currencies except the yen rose. The appreciation of major currencies against the US dollar over this period boosted the US dollar value of contracts denominated in these currencies, yet even after adjusting for exchange rate movements notional amounts were up.

The rise in notional amounts was concentrated in interest rate contracts with a maturity of one year or less, which climbed from $160 trillion at end-December 2016 to $193 trillion at end-June 2017 (Graph 2). This suggests that the rise was driven by increased positioning and hedging at the short end of the yield curve, possibly in response to changing expectations about the outlook for monetary policy.

Even as notional amounts rose, the gross market value of OTC interest rate derivatives fell further, to $8.5 trillion at end-June 2017. This was its lowest level since 2007. The gross market value of contracts denominated in US dollars fell by 22% in the first half on 2017 to $1.8 trillion. During the same period, there were similar falls for contracts denominated in yen (down by 16% to $0.6 trillion) and in euros (down by 14% to $4 trillion). These declines likely reflected increases in long-term yields, which reduced the gap between market interest rates on the reporting date and rates prevailing at contract inception.

Concentration among FX dealers edges higher

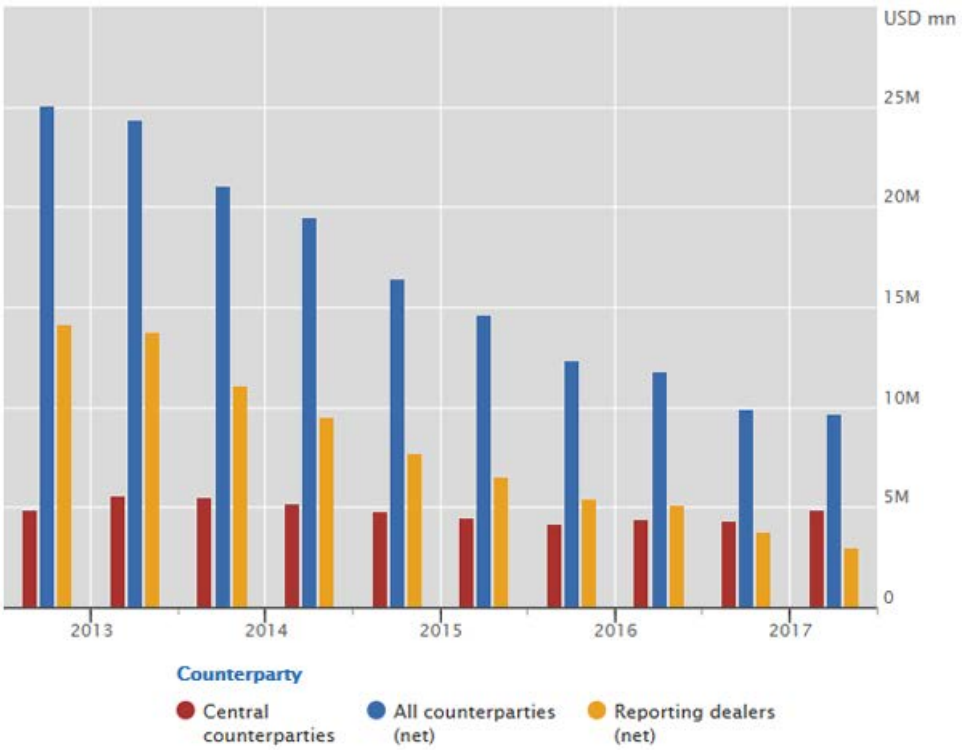


Graph 3: Herfindahl index for FX forwards, FX swaps and currency swaps (interactive graph).
Source: BIS semiannual OTC derivatives statistics (Table D6).

In OTC foreign exchange (FX) derivatives markets, notional amounts rose to a record high of $77 trillion at end-June 2017, up from $69 trillion at end-December 2016. Activity in short-term instruments, in particular FX forwards and swaps, drove the increase. 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.

Concentration among FX dealers edged higher in the first half of 2017. The concentration of reporting dealers' outstanding positions – as measured by the Herfindahl index, where a higher number indicates that the market is dominated by a few dealers – had fallen steadily in the years after the 2007–09 Great Financial Crisis (Graph 3). This trend stopped in 2015. The Herfindahl index for FX forwards, FX swaps and currency swaps subsequently rose from 444 at end-June 2015 to 488 at end-June 2017, indicating that larger dealers gained market share over this period. Concentration increased across all major currencies. While these statistics refer to notional amounts outstanding, data on trading activity from the 2016 Triennial Survey also showed greater concentration in FX markets.

Cleared segment rises to 51% of CDS market



Graph 4: Outstanding notional amount of CDS, in trillions (ie in million millions, eg 10M equals 10 million millions, or 10 trillion) of US dollars (interactive graph).
Source: BIS OTC derivatives statistics (Table D10.1).

Central clearing continued to make inroads in OTC derivatives markets. As regards CDS markets, the cleared segment (red bars in Graph 4) rose from $4.3 trillion to $4.9 trillion in the first half of 2017, even as the total notional amount of outstanding CDS declined slightly. Consequently, the share of outstanding CDS cleared through central counterparties (CCPs) jumped from 44% at end-December 2016 to 51% at end-June 2017. Bilateral contracts between reporting dealers declined further in the first half of 2017, to $2.9 trillion. These shifts are consistent with the novation of contracts between dealers to CCPs.

Turning to OTC interest rate derivatives markets, the share of central clearing was little changed in the first half of 2017. Reporting dealers' positions booked against CCPs rose in parallel with the rise in notional amounts, to $320 trillion at end-June 2017. This left the share of cleared positions at 77%, similar to the share a year earlier.

2. About the statistics

Reporting basis

The semiannual OTC derivatives statistics capture outstanding positions at end-June and end-December. They are reported on a consolidated basis: data from branches and (majority-owned) subsidiaries worldwide of a given institution 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.

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.

Authorities in the following 12 countries participated in the latest semiannual survey of 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		

Australia and Spain participated in the survey starting from end-2011, and Belgium participated in the survey from end-June 1998 to end-December 2016.

Every three years, dealers from more than 30 additional countries participate in the outstanding positions part of the Triennial Central Bank Survey of foreign exchange and OTC derivatives markets. The market share of dealers that participate in the semiannual survey varies across risk categories. It 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%). Overall, the combined results of the semiannual and Triennial surveys indicate that the former captured about 94% of global OTC derivatives positions at end-June 2016. The next Triennial Survey of turnover will be conducted in April 2019 and outstanding positions 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-December 2016 and end-June 2017, the overall increase in notional amounts was smaller after adjusting for exchange rate movements: 9%, compared with 12% on an unadjusted basis. The appreciation of the euro, the yen and other currencies against the US dollar over this period increased the reported US dollar value of positions denominated in these currencies.

Revisions and breaks

Data are subject to revision and are impacted by breaks – or changes in compilation – over time. Breaks may arise from: changes in the population of reporting institutions, including the addition of new reporting countries; changes in reporting practices; or methodological improvements.

The statistics at end-June 2017 are not impacted by any significant revisions or breaks.

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.

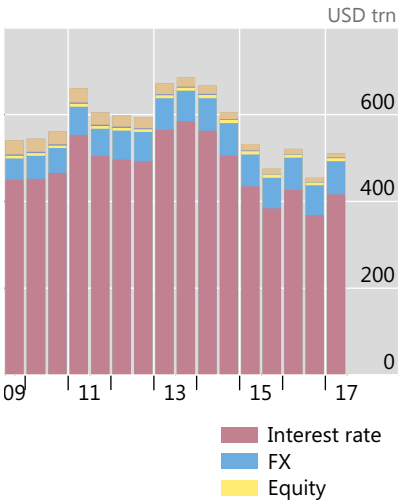
Under the extreme assumption that all positions with CCPs are initially inter-dealer contracts, positions with CCPs could be adjusted by dividing by two. For OTC interest rate derivatives, this would reduce the notional amount outstanding by $160 trillion (half of the $320 trillion reported against CCPs), which in turn would reduce the share of CCPs in outstanding positions to 62% ($160 / ($416 – $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 BIS OTC derivatives statistics are not double-counted when novated to CCPs.

Annex: Charts

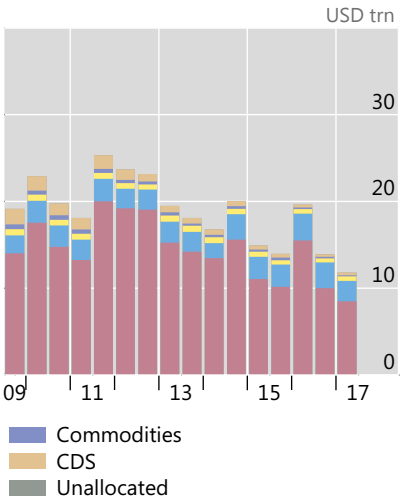
Global OTC derivatives markets

Graph A1

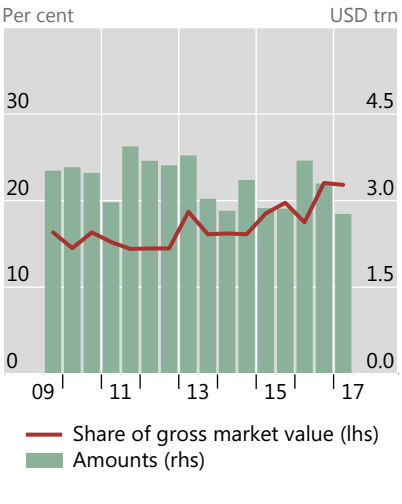
Notional principal[1]



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.

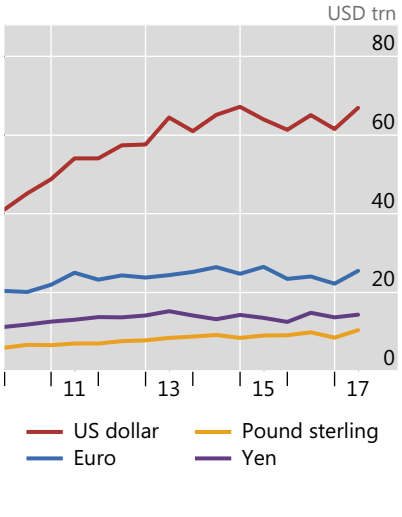
Source: BIS semiannual OTC derivatives statistics (available at www.bis.org/statistics/derstats.htm).

OTC foreign exchange derivatives

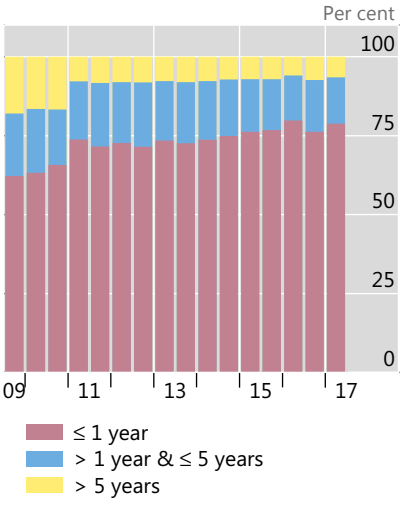
Notional principal[1]

Graph A2

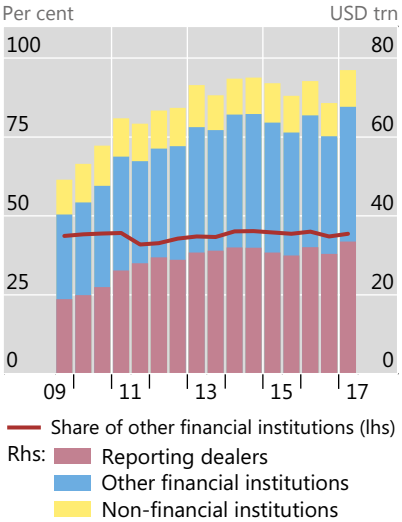
By currency



By maturity



By sector of counterparty

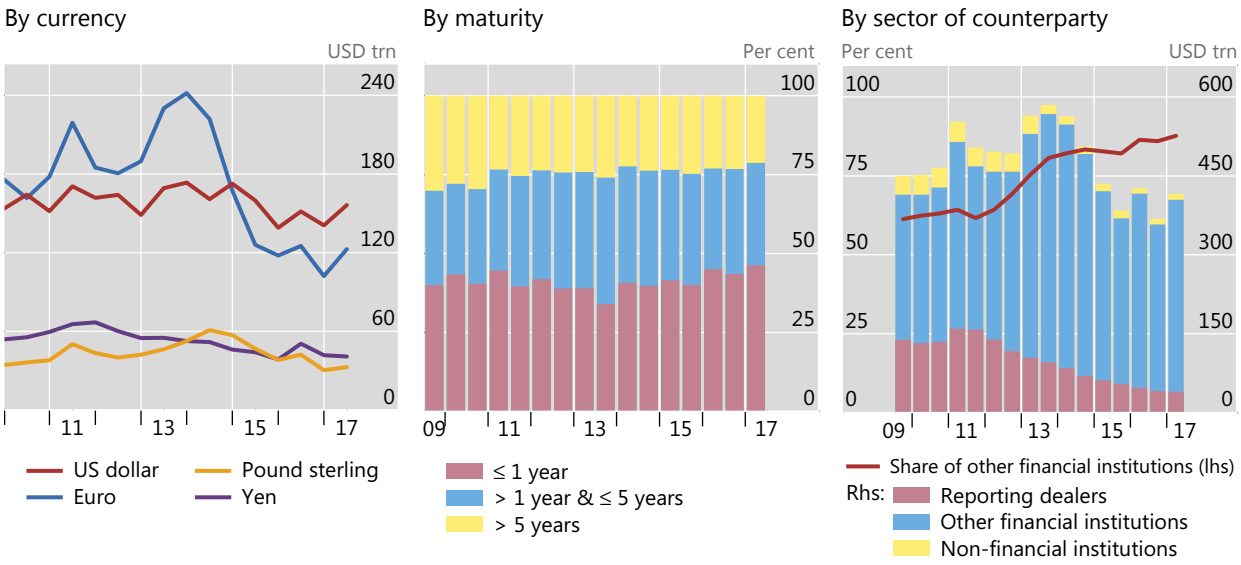


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC interest rate derivatives

Notional principal[1] Graph A3

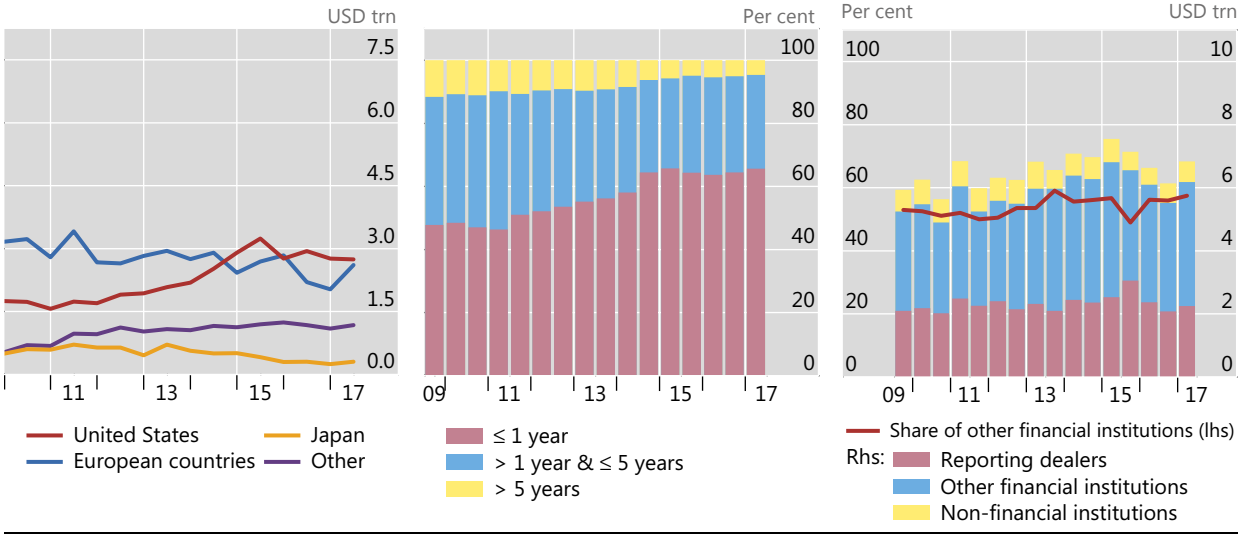


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC equity-linked derivatives

Notional principal[1] Graph A4



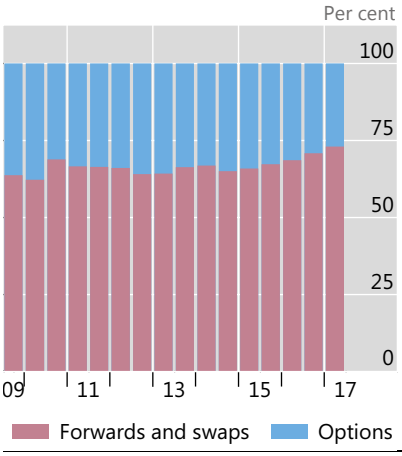
[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

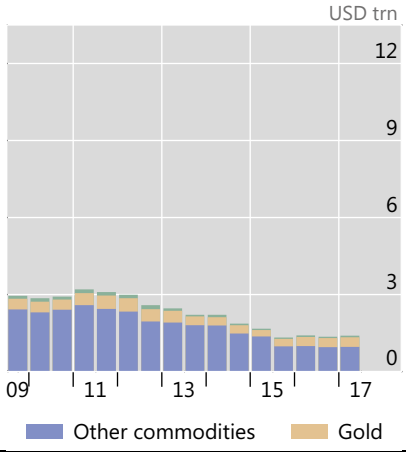
OTC commodity derivatives

Graph A5

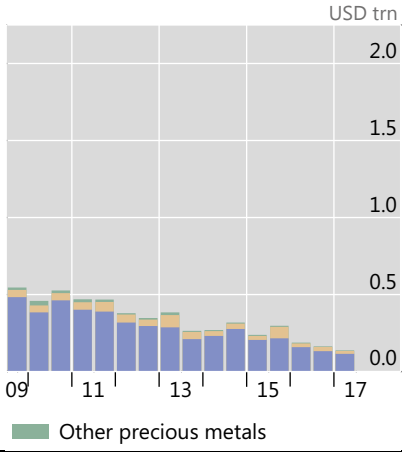
Notional principal, by instrument[1]



Notional principal, by commodity[1]



Gross market value, by commodity[1]



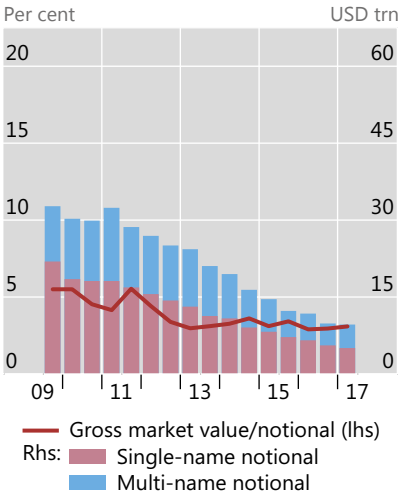
[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

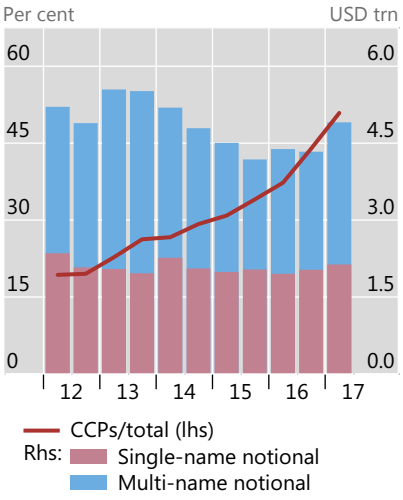
Credit default swaps[1]

Graph A6

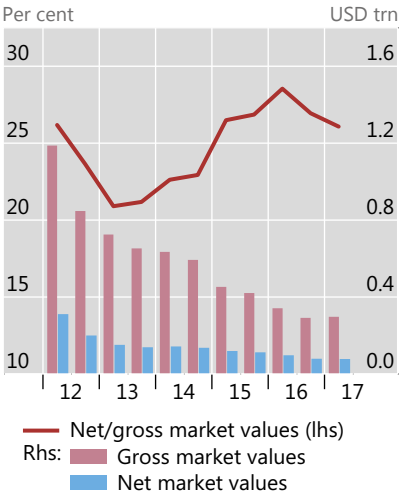
Notional principal



Notional principal with central counterparties (CCPs)



Impact of netting

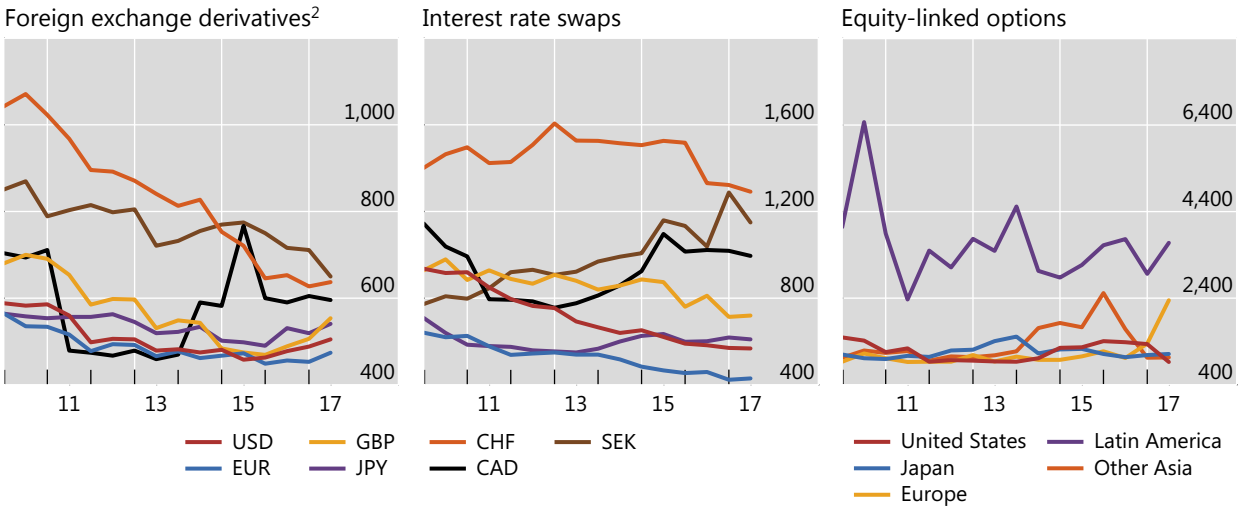


[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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