



OTC derivatives statistics at end-June 2023

- Outstanding interest rate and FX derivatives (notional amounts) increased by 17% and 12% during the first half of 2023 to reach [\\$574 trillion](#) and [\\$120 trillion](#), respectively.
- The phasing-out of Libor rates has continued to transform the product mix in interest rate derivatives, with declines in forward rate agreements in key currencies (except the euro).
- The share of credit default swaps cleared by central clearing counterparties reached [70%](#) for the first time at end-June 2023. The similar share for interest rate derivatives has hovered close to 80% since 2019.

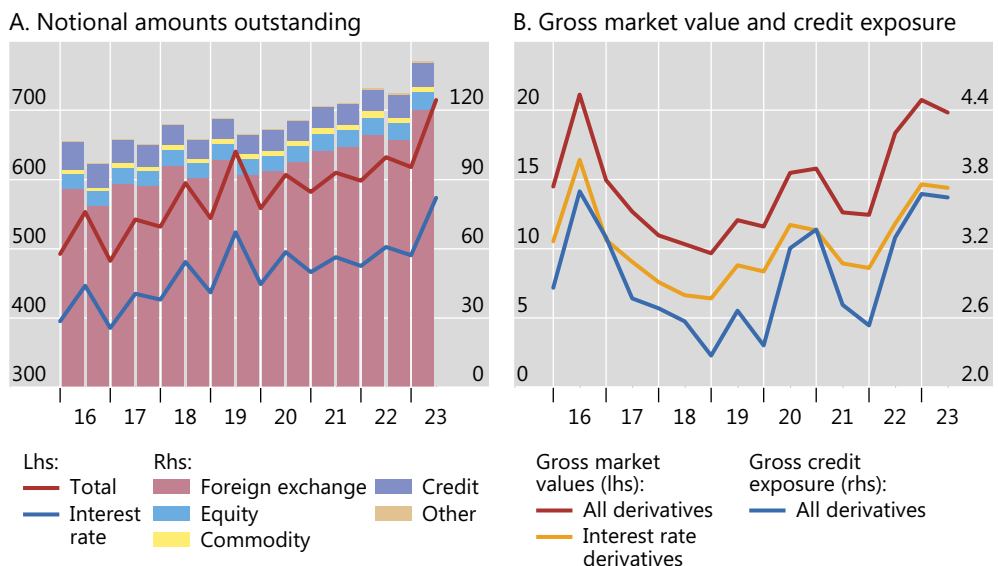
Rising interest rates boost outstanding interest rate derivatives

The notional value of outstanding OTC derivatives reached [\\$715 trillion at end-June 2023](#), up 16% (or \$97 trillion) since end-December 2022 (Graph 1.A). This rise was in part a result of seasonal factors, particularly evident since 2016, whereby decreases

Outstanding OTC derivatives

In trillions of US dollars

Graph 1



Source: BIS OTC derivatives statistics (Tables [D5.1](#) and [D5.2](#)).

in notional outstanding amounts before the end of each calendar year are followed by a subsequent rebound. Such end-of-year contractions can occur if reporting

dealers shrink their outstanding notional derivative positions for regulatory and financial reporting purposes.¹

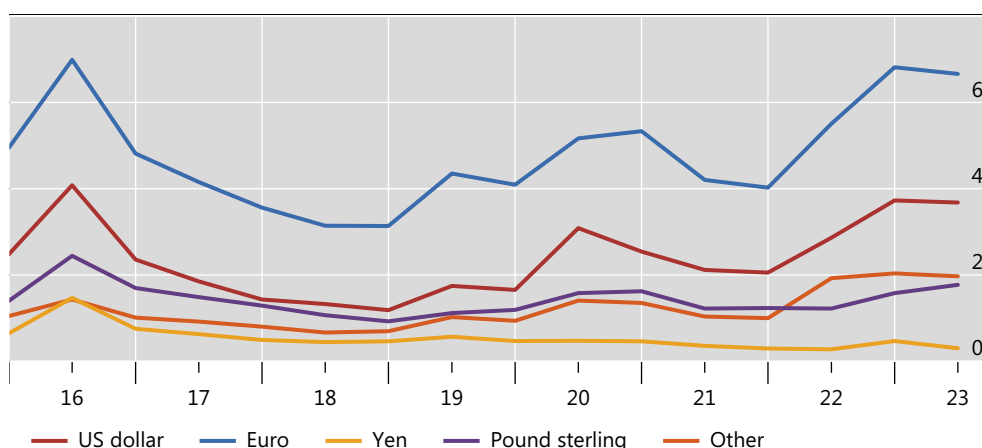
Growth in outstanding interest rate derivatives (IRDs) (+[\\$83 trillion, or 17%](#)) and FX derivatives (+[\\$13 trillion, or 12%](#)) drove the overall increase. The rise in outstanding IRDs was large even after taking seasonal factors into account and occurred against a backdrop of rising dollar and euro interest rates.

The market value of outstanding OTC derivatives (summing positive and negative market values) remained elevated at end-June 2023, down only slightly from end-December 2022 (Graph 1.B, red line). This probably reflects the rapid tightening of interest rates that began in 2022, which has boosted the gross market value of IRDs in particular. An outside increase of 70% during the course of 2022 had pushed the gross market value of IRDs to [\\$14.6 trillion](#) by the end of that year, a level not seen in the preceding six years (Graph 1.B, yellow line). It remained slightly below this elevated level at end-June 2023.² Both euro- and US dollar-denominated IRDs contributed to this pattern (Graph 2, blue and red lines).

Outstanding interest rate derivatives, gross market values

In trillions of US dollars

Graph 2



Source: BIS OTC derivatives statistics (Tables D5.1 and D5.2).

The reform of benchmark Libor rates has transformed the product mix of IRDs. In particular, it has led to significant reductions in the notional value of outstanding forward rate agreements (FRAs) denominated in several key currencies.³ Following the phase-out of Libor rates for GBP, JPY and CHF at end-2021, outstanding notional FRAs denominated in these currencies collapsed (Graph 3.A). For the US dollar, overnight and 12-month Libor settings were phased out at end-June 2023, while the one-, three- and six-month settings will cease only in September 2024.⁴ Reflecting

¹ For further information on possible factors behind such intra-year effects, see [OTC derivatives statistics at end-December 2019 \(bis.org\)](#).

² The gross credit exposure measure – which adjusts gross market values for legally enforceable bilateral netting agreements (but not for collateral) – decreased slightly, by 1%, to [\\$3.6 trillion](#).

³ See W Huang and K Todorov, “[The post-Libor world: a global view from the BIS derivatives statistics](#)”, *BIS Quarterly Review*, December 2022.

⁴ They are currently calculated using a synthetic methodology based on the relevant CME Term SOFR plus the respective International Swaps and Derivatives Association fixed spread adjustment. See [ICE LIBOR](#) for details.

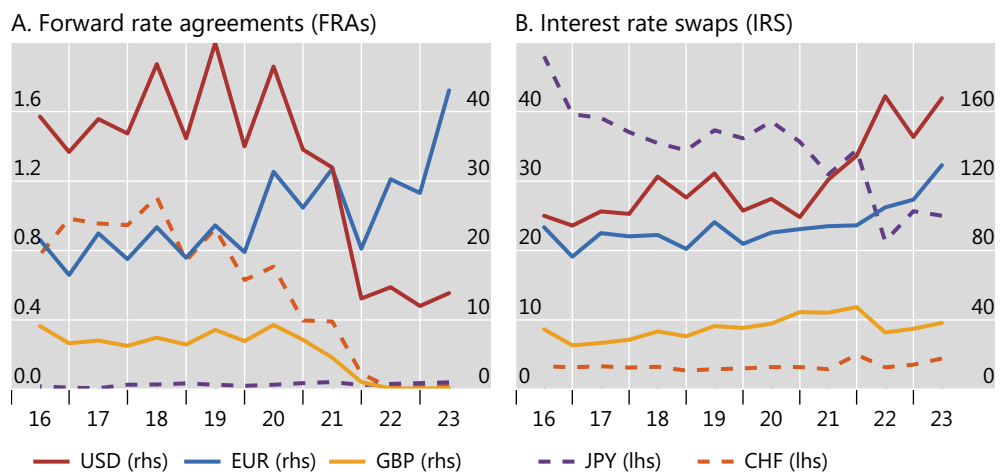
this transition, dollar-denominated FRAs stood at [\\$14 trillion](#) at end-June 2023, much lower than before the reform (Graph 3.A, red line). By contrast, euro-denominated FRAs, which typically reference Euribor (which has not been phased out), have trended upwards throughout the Libor transition period to reach [\\$43 trillion](#) at end-June 2023 (Graph 3.A, blue line), the highest level on record.

Turning to interest rate swaps (IRS), their notional outstanding amounts diverged across currencies in the first half of 2023.⁵ Dollar-denominated IRS returned to the elevated level of [\\$168 trillion](#) evident a year earlier, while euro-denominated IRS continued to trend upwards, reaching almost [\\$130 trillion](#). By contrast, JPY-denominated IRS resumed the downward trend evident since at least 2016, while GBP- and CHF-denominated IRS were relatively unchanged.

Interest rate derivatives, notional amounts outstanding

By instrument and currency, in trillions of US dollars

Graph 3



Source: BIS OTC derivatives statistics (Table D7).

Central clearing

The rate of central clearing of credit default swaps (CDS) has continued to trend upwards. It reached [70%](#) at end-June 2023, the highest level on record and up more than 4 percentage points from a year earlier (Graph 4, blue line).⁶ That said, the clearing rate for CDS remains below that for IRD, which has been broadly stable above the 75% mark in recent years ([78%](#) at end-June 2023). The rate of central clearing of FX derivatives has remained below 5% despite a continuous rise over the past decade (Graph 4, yellow line).

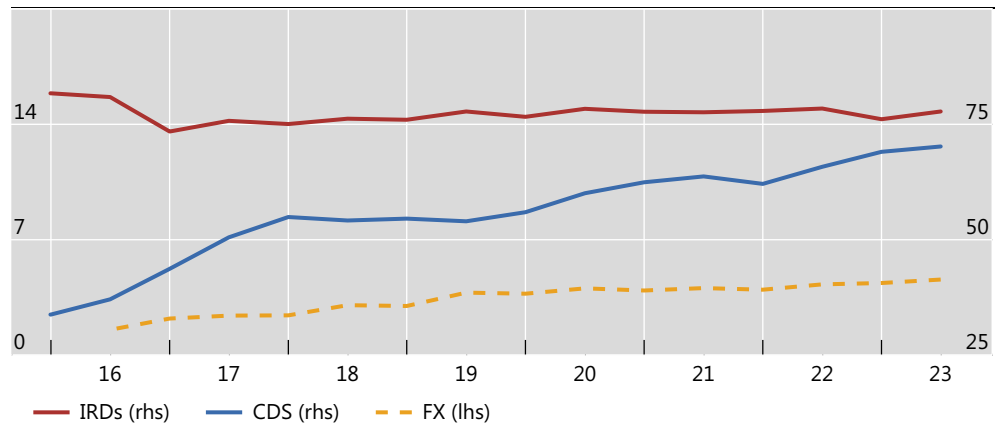
⁵ FRAs reference forward-looking term rates and pay out at the start of an interest period, to mitigate credit risk. Single-period IRS reference backward-looking rates and pay out at the end of a period.

⁶ This was mainly driven by multi-name contracts (Annex Graph A.6).

Central clearing of derivatives

Shares, in per cent¹

Graph 4



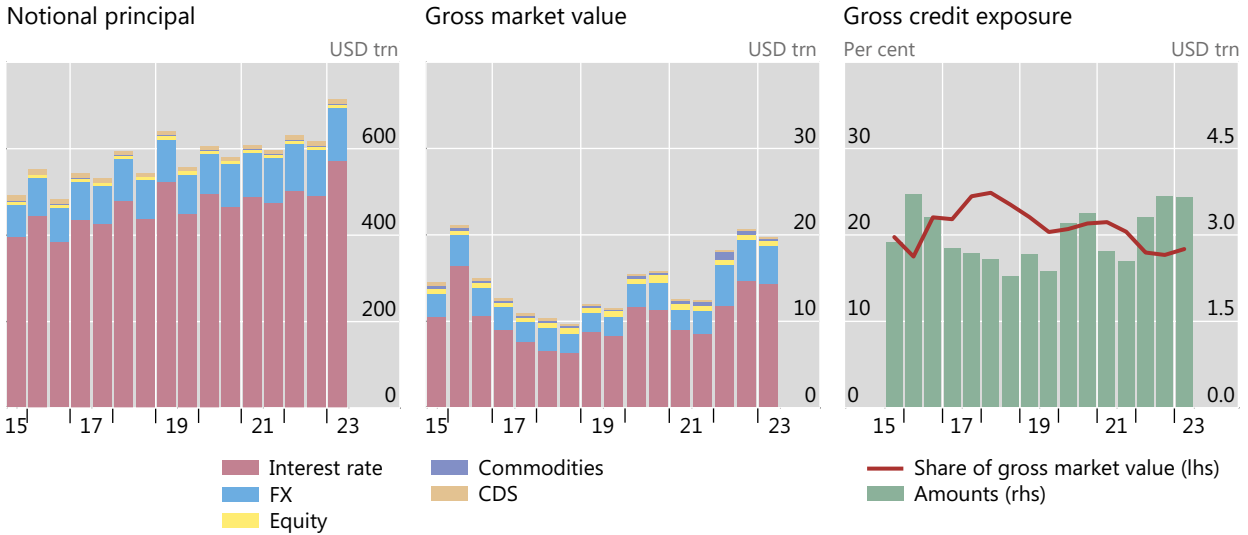
¹ Percentage of notional amounts outstanding of OTC interest rate derivatives (IRDs) and credit default swaps (CDS) cleared by central counterparties (CCP).

Source: BIS OTC derivatives statistics (Tables [D5.1](#) and [D10.1](#)).

Annex

Global OTC derivatives markets¹

Graph A.1



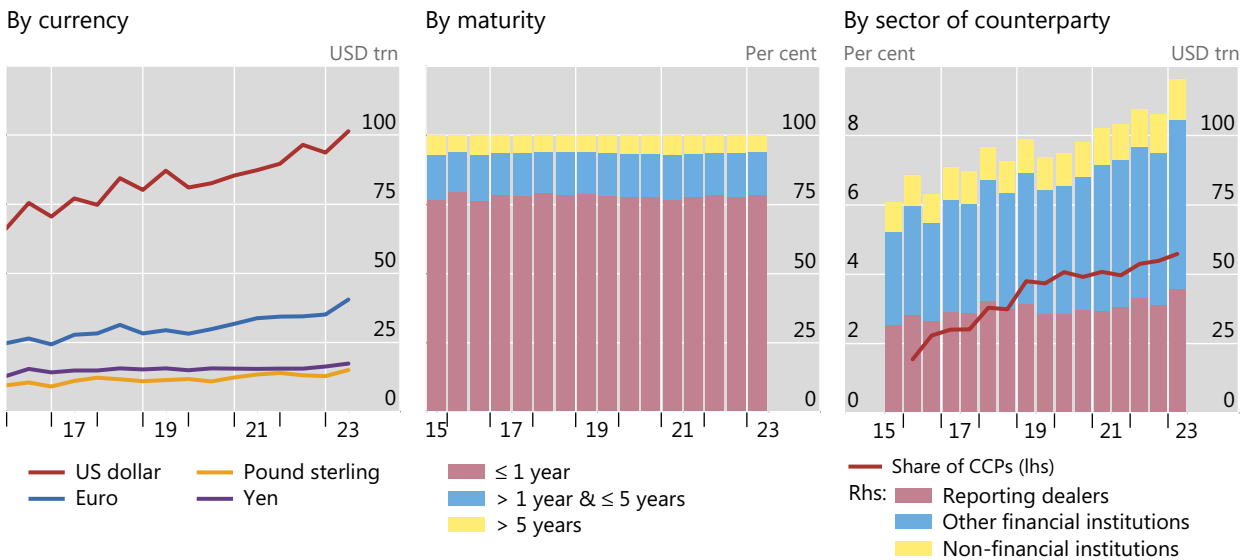
¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC foreign exchange derivatives¹

Graph A.2

Notional principal



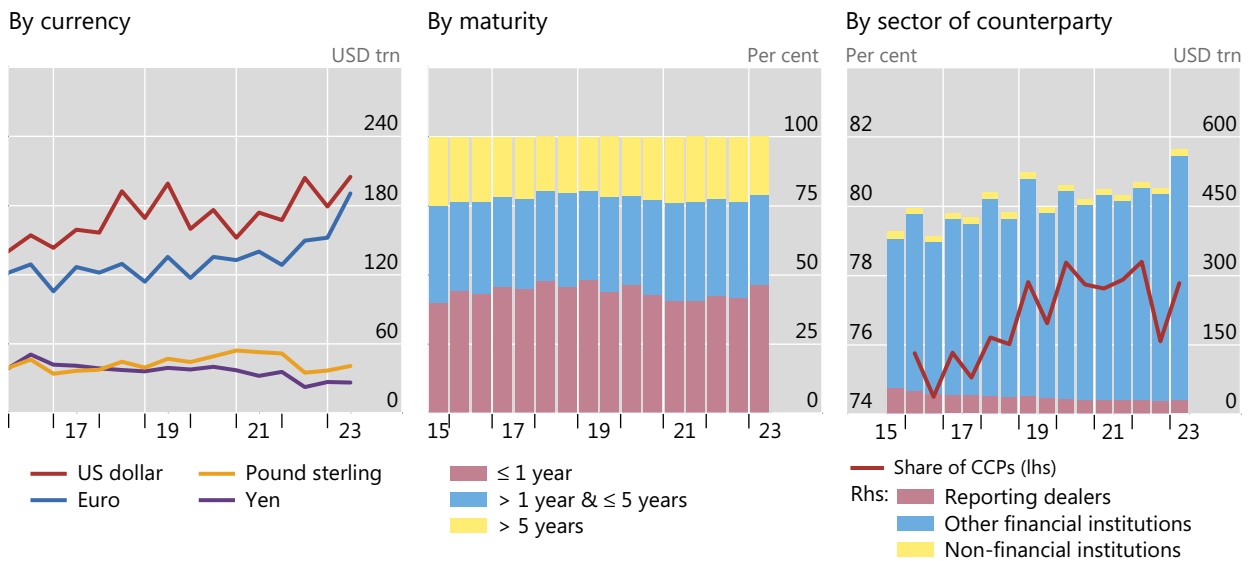
¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC interest rate derivatives¹

Notional principal

Graph A.3



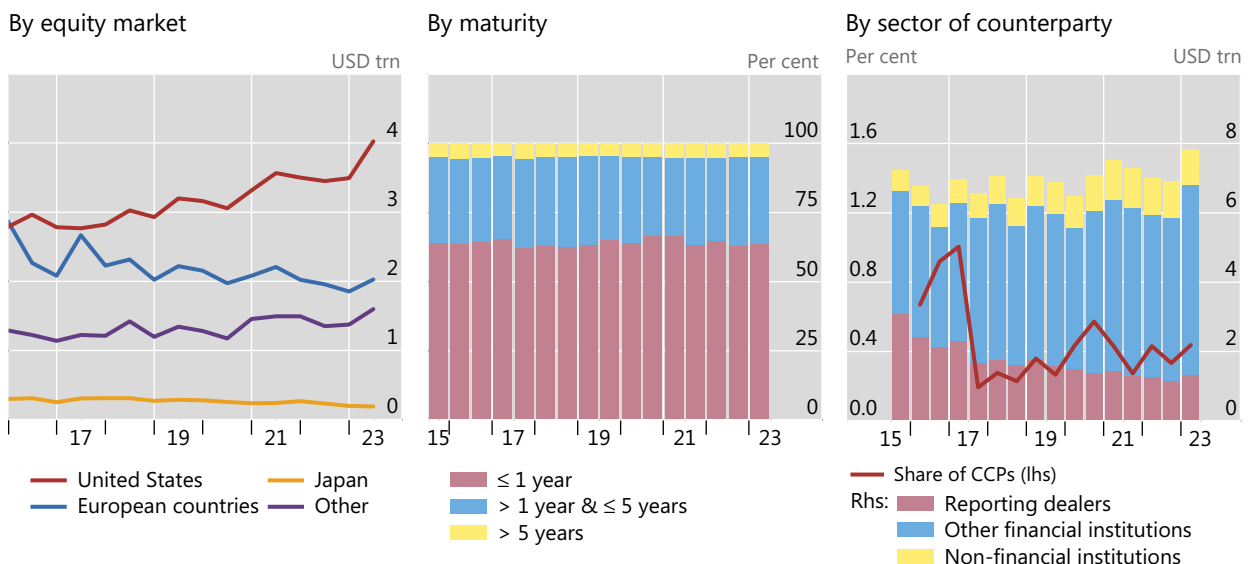
¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC equity-linked derivatives¹

Notional principal

Graph A.4

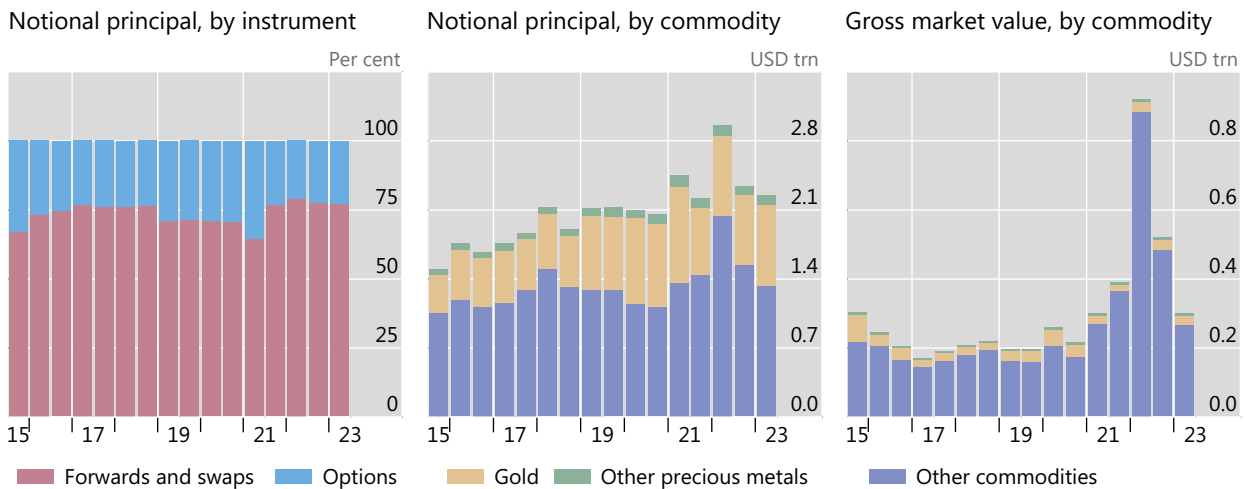


¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

OTC commodity derivatives¹

Graph A.5

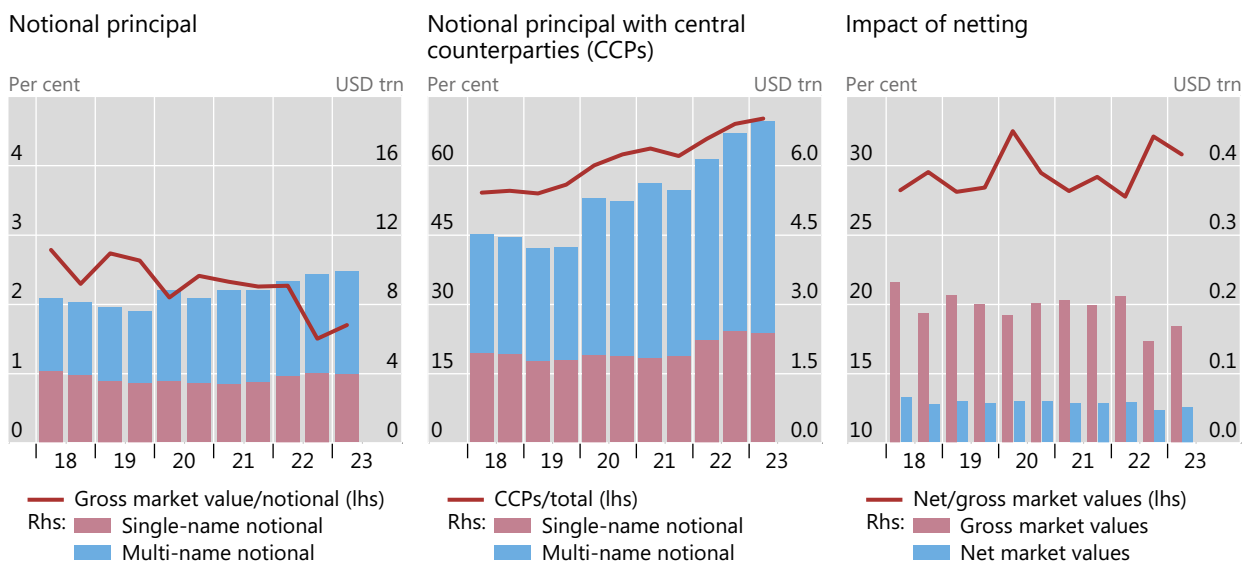


¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

Credit default swaps¹

Graph A.6



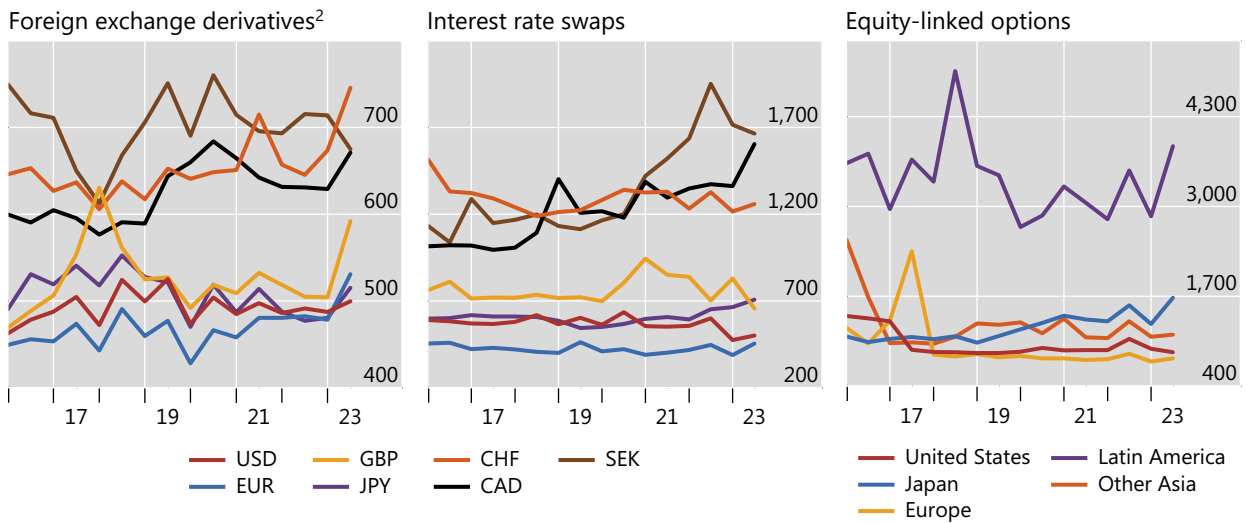
¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

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

Concentration in global OTC derivatives markets

Herfindahl index¹

Graph A.7



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

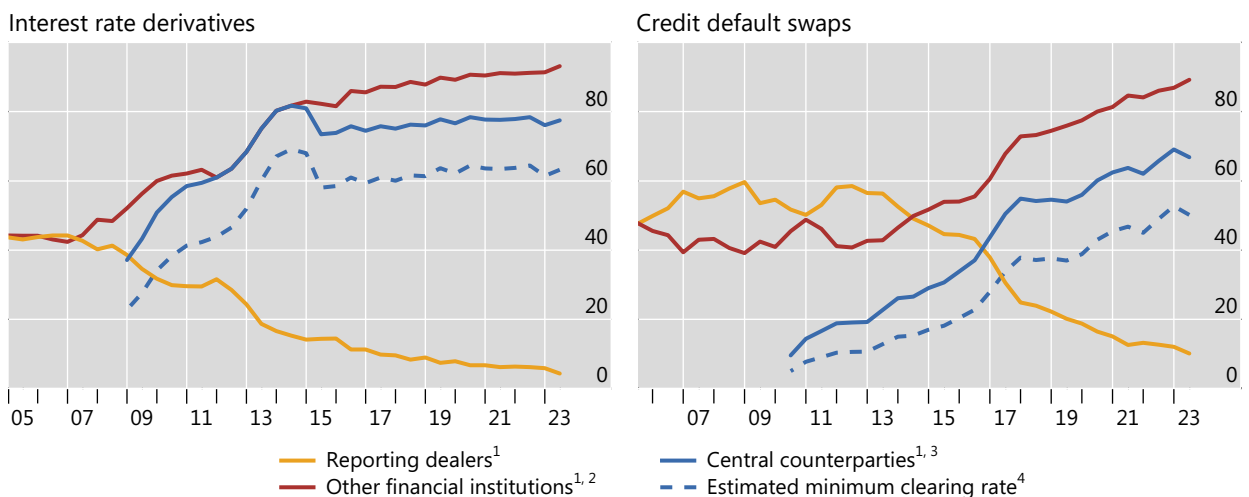
¹ The index ranges from 0 to 10,000, where a lower number indicates that there are many dealers with similar market shares (as measured by notional principal) and a higher number indicates that the market is dominated by a few reporting dealers. ² Foreign exchange forwards, foreign exchange swaps and 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 A.8



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. The CCP 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.