

KEY TRENDS IN THE SIZE AND COMPOSITION OF OTC DERIVATIVES MARKETS

This paper analyzes recent trends in the size and composition of over-the-counter (OTC) derivatives markets, using the latest data from the Bank for International Settlements (BIS) and ISDA.

According to the BIS, OTC derivatives notional outstanding decreased during the second half of 2018 compared with the first half of 2018, driven by a decline in both US dollar- and euro- denominated interest rate derivatives (IRD) contracts. However, notional outstanding at year-end 2018 was higher compared with year-end 2017.

This trend in notional outstanding can also be seen in swap trading volumes in the US, as trading in US dollar- and euro-denominated IRD products declined during the second half of 2018 compared with the first half, but increased year-over-year.

BIS data shows that the gross market value of OTC derivatives contracts continued to decline in 2018. Gross credit exposure – gross market value after netting – also declined to its lowest level since 2007. Following the implementation of the margin rules for non-cleared derivatives, more and more of that gross credit exposure is collateralized.

KEY HIGHLIGHTS

- OTC derivatives notional outstanding was \$544.4 trillion at the end of 2018, 8.5% lower compared with mid-year 2018 and 2.3% higher compared with year-end 2017¹.
- IRD notional outstanding was \$436.8 trillion at year-end 2018. Changes in the size of this market segment mirrored that of the overall market, with a decline of 9.2% compared to mid-year 2018 and an increase of 2.4% compared to year-end 2017. IRD accounted for 80.2% of total notional outstanding at the end of 2018 (Chart 1).
- The changes in IRD notional outstanding at year-end 2018 versus mid-year 2018 and year-end 2017 were driven by US dollar- and euro-denominated contracts. US dollar IRD notional outstanding totaled \$169.2 trillion at the end of 2018, down 12.1% versus mid-year 2018, and up by 8.1% compared to year-end 2017. Euro-denominated IRD notional outstanding was \$114.0 trillion at the end of 2018, and declined compared to both prior periods. It was down by 11.9% compared to mid-year 2018 and by 6.5% from year-end 2017. US dollar- and euro-denominated contracts represented 38.7% and 26.1%, respectively, of total IRD notional outstanding at year-end 2018 (Chart 2).
- The change in IRD notional outstanding during the second half of 2018 was driven by the decline in short-term contracts. IRD contracts with a remaining maturity up to and including one year totaled \$200.7 trillion at year-end 2018, down 13.2% compared to mid-year 2018 and up 4.8% versus year-end 2017. IRD notional outstanding with a remaining maturity over one year and up to five years was \$147.4 trillion, down 5.1% compared to mid-year 2018 and up by 5.2% versus year-end 2017. IRD contracts with a maturity over five years totaled \$88.5 trillion at year-end 2018, down by 6.0% compared to mid-year 2018 and down by 6.7% from year-end 2017 (Chart 3).

¹ BIS OTC Derivatives Statistics <https://www.bis.org/statistics/derstats.htm>

- The change in US dollar- and euro- denominated notional outstanding can also be seen in swap trading volumes in the US during the second half of 2018². Trading in US dollar-denominated IRD products – particularly shorter-term forward rate agreements (FRAs) and overnight index swaps (OIS), but also fixed-for-floating swaps – declined in the second half of 2018, but increased year-over-year (Charts 4 and 5).
- US dollar-denominated IRD trading volume in the US totaled \$75.1 trillion during the second half of 2018, down 13.8% compared to the first half of 2018 (\$87.1 trillion) and up 27.4% compared to the second half of 2017 (\$59.0 trillion). In the second half of 2018, 70.7% of trading volume was concentrated in contracts with a term of one year or less³. More specifically:
 - US dollar-denominated FRA traded notional totaled \$29.3 trillion in the second half of 2018, down 16.1% from \$35.0 trillion in the first half of 2018 and up 25.4% from \$23.4 trillion in the second half of 2017.
 - US dollar-denominated fixed-for-floating IRS traded notional totaled \$18.3 trillion in the second half of 2018, down 6.7% from \$19.7 trillion in the first half of 2018 and up 25.1% from \$14.7 trillion in the second half of 2017.
 - US dollar-denominated OIS traded notional totaled \$14.7 trillion in the second half of 2018, down 19.5% from \$18.3 trillion in the first half of 2018 and up 25.5% from \$11.7 trillion in the second half of 2017.
- Euro-denominated IRD trading volume in the US totaled \$13.8 trillion during the second half of 2018, down 16.3% compared to the first half of 2018 (\$16.5 trillion) and up 6.8% compared to the second half of 2017 (\$12.9 trillion). In the second half of 2018, contracts with a term of one year or less comprised 54.3% of trading volume.

² Based on the data from the Depository Trust & Clearing Corporation (DTCC) and Bloomberg swap data repositories (SDRs). See ISDA SwapsInfo website www.swapsinfo.org/

³ Term is calculated as the difference between the effective date and the end date

- Credit default swaps (CDS) notional outstanding (including single-name and index CDS) declined to \$8.1 trillion at year-end 2018, down by 2.4% from \$8.4 trillion at mid-year 2018 and by 13.0% from \$9.4 trillion at year-end 2017. Single-name CDS notional declined by 13.5% to \$4 trillion at year-end 2018 from \$4.6 trillion at year-end 2017, while multiple-name CDS notional declined by 12.4% to \$4.2 trillion from \$4.8 trillion over the same period (Chart 6).
- The gross market value of OTC derivatives continued to decline in the second half of 2018 and totaled \$9.7 trillion at year-end 2018, compared to \$10.3 trillion at mid-year 2018 and \$11.0 trillion at year-end 2017⁴. Gross market value totaled 1.8% of notional outstanding at year-end 2018, compared with 1.7% at mid-year 2018 and 2.1% at year-end 2017 (Chart 7).
- While the share of IRD notional outstanding has remained relatively unchanged over the past two years and totaled about 80%, the share of IRD gross market value declined from 71.2% at year-end 2016 to 69.2% at year-end 2017 and 66.2% at year-end 2018. The BIS research points to the rise of central clearing, greater possibilities for trade compression and a greater number of banks that have been using the settled-to-market (STM) approach⁵ as the main reasons for the decline in the share of IRD gross market value relative to other derivatives⁶.
- The gross credit exposure of OTC derivatives, which is a more accurate measure of counterparty credit risk, continued to decline and totaled \$2.3 trillion, accounting for 0.4% of notional outstanding at year-end 2018⁷ (Chart 8). As a result of close-out netting, market participants reduced their mark-to-market exposure by about 76.5% at year-end 2018 (Chart 9).

⁴ Gross market value is the sum of the absolute values of all outstanding derivatives contracts with either positive or negative replacement values evaluated at market prices prevailing on the reporting date. See [BIS Glossary](#)

⁵ Under the STM approach, 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. This results in lower market values for derivatives

⁶ BIS OTC Derivatives Statistics at End-December 2018 https://www.bis.org/publ/otc_hy1905.htm

⁷ Gross credit exposure adjusts gross market value for legally enforceable netting agreements, but not for collateral. See [BIS Glossary](#)

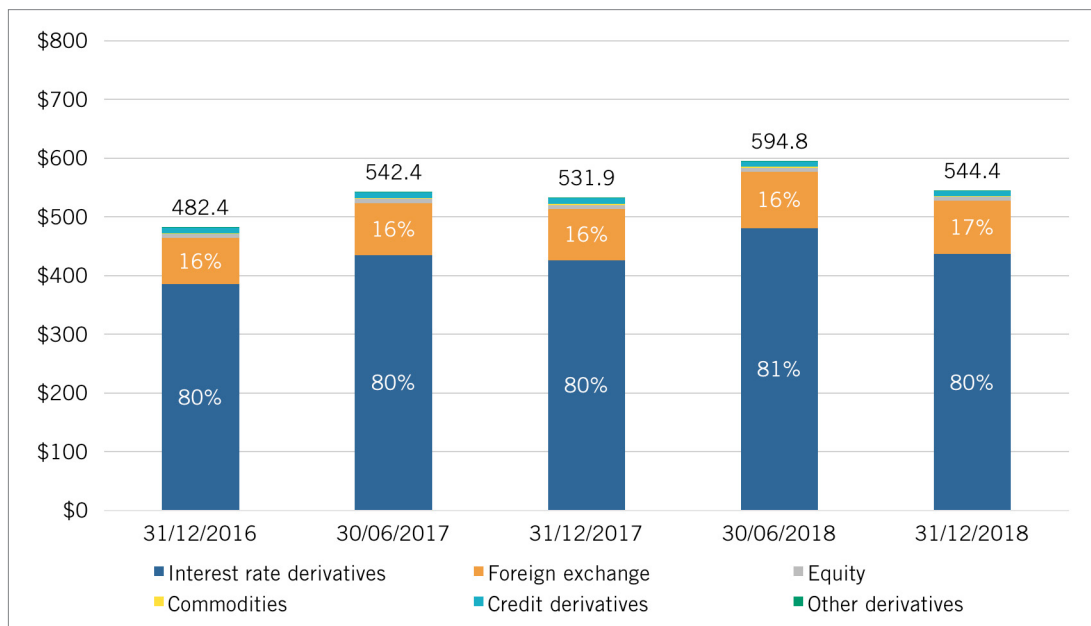
- Following the implementation of the margin rules for non-cleared derivatives from September 2016, the amount of collateral received and posted by market participants has been increasing. The ISDA margin survey for the full year 2018 found that the 20 largest market participants (phase-one firms) collected approximately \$1.1 trillion of initial margin (IM) and variation margin (VM) for their non-cleared derivatives transactions at year-end 2018. This amount included \$157.9 billion of regulatory and discretionary IM, \$39.4 billion of IM set aside for inter-affiliate derivatives transactions and \$858.6 billion of VM (Table 1)⁸.
- Additionally, \$217.9 billion in IM had been posted by all market participants to major central counterparties for their cleared IRD and CDS transactions at the end of 2018 (Chart 10).
- As more firms and transactions become subject to the margin requirements, ISDA expects IM and VM to continue to grow, and net credit exposure of OTC derivatives, which adjusts gross credit exposure for collateral, to continue to decline⁹.

⁸ ISDA Margin Survey Year-End 2018 <https://www.isda.org/a/nleME/ISDA-Margin-Survey-Year-End-2018.pdf>

⁹ Net credit exposure adjusts gross credit exposure for collateral posted and received by counterparties

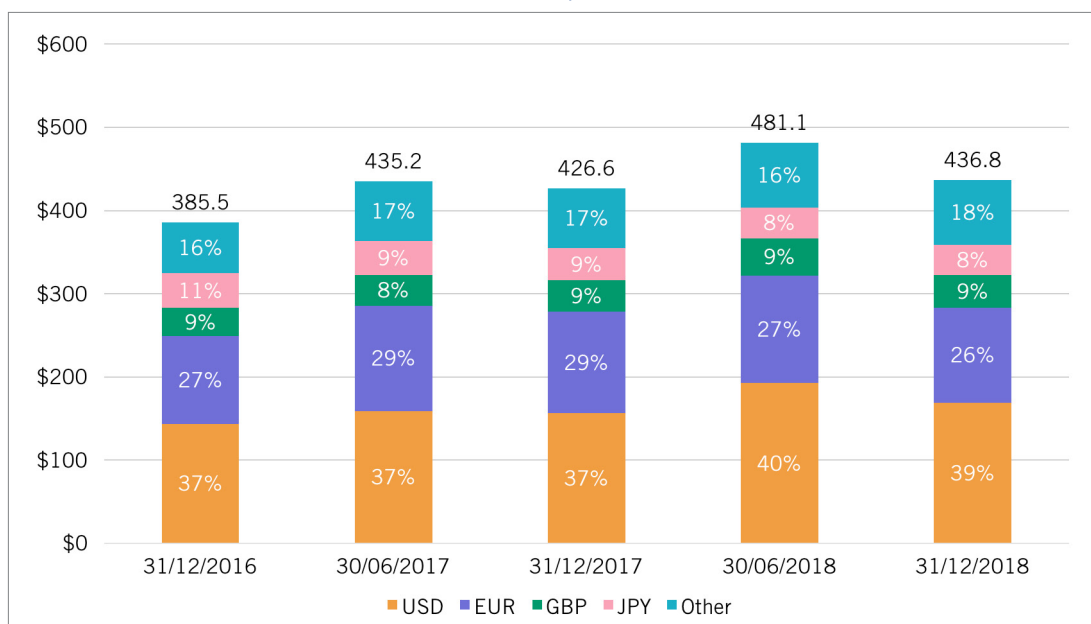
KEY TRENDS

Chart 1: Global OTC derivatives notional outstanding declined by 8.5% in the second half of 2018 (US\$ trillions)



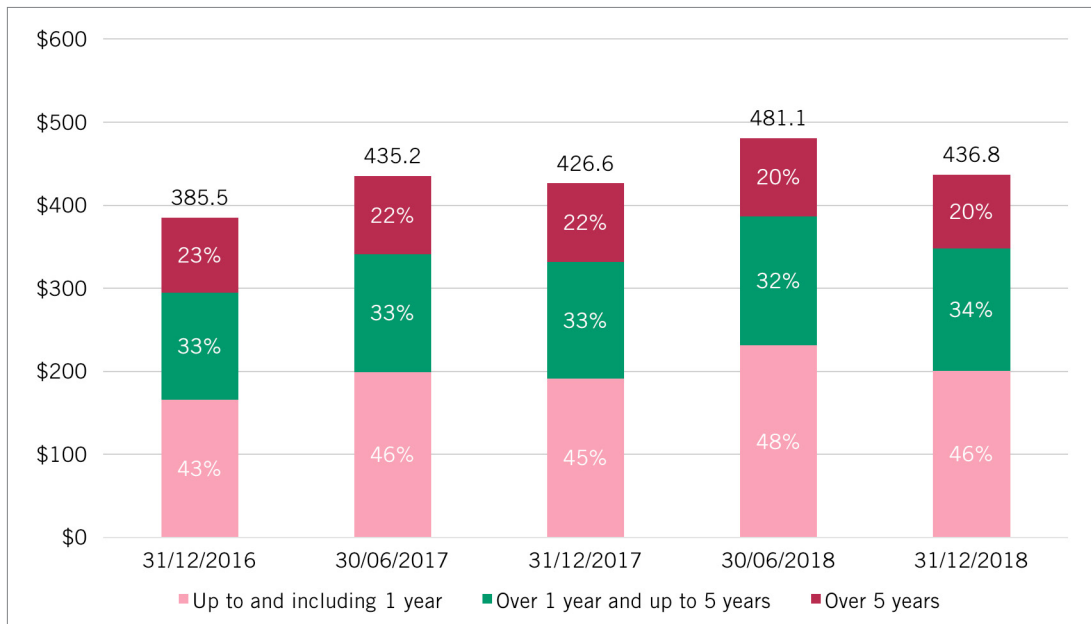
Source: BIS OTC Derivatives Statistics

Chart 2: The decline in IRD notional outstanding in the second half of 2018 was driven by US dollar- and euro-denominated contracts (US\$ trillions)



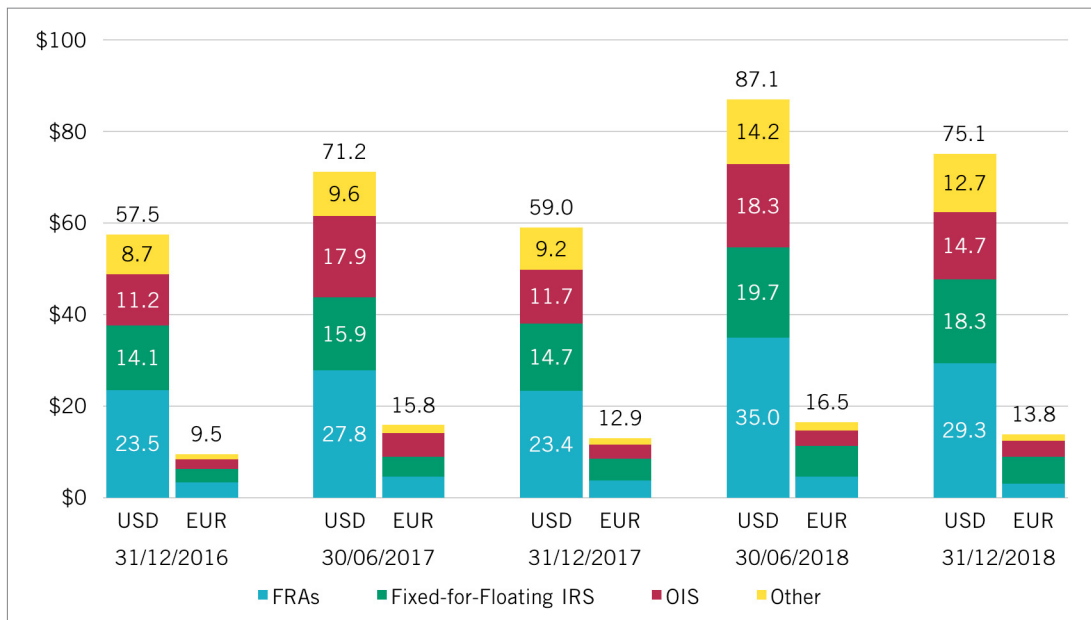
Source: BIS OTC Derivatives Statistics

Chart 3: The share of IRD contracts with short-term maturity declined to 45.9% in the second half of 2018 (US\$ trillions)



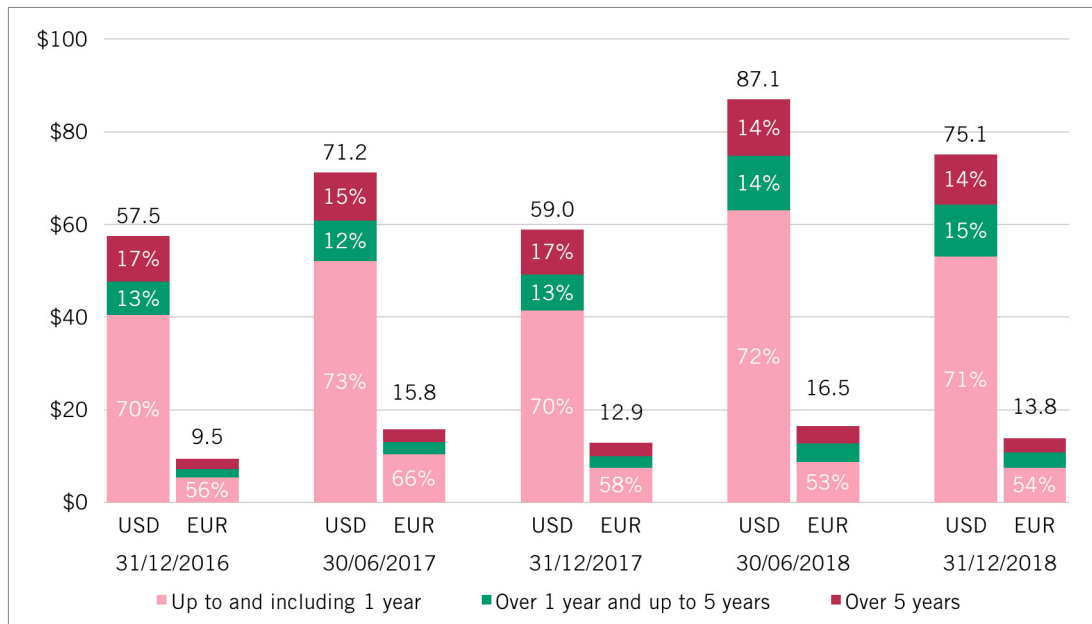
Source: BIS OTC Derivatives Statistics

Chart 4: US dollar- and euro-denominated IRD traded notional in the US declined during the second half of 2018 (US\$ trillions)



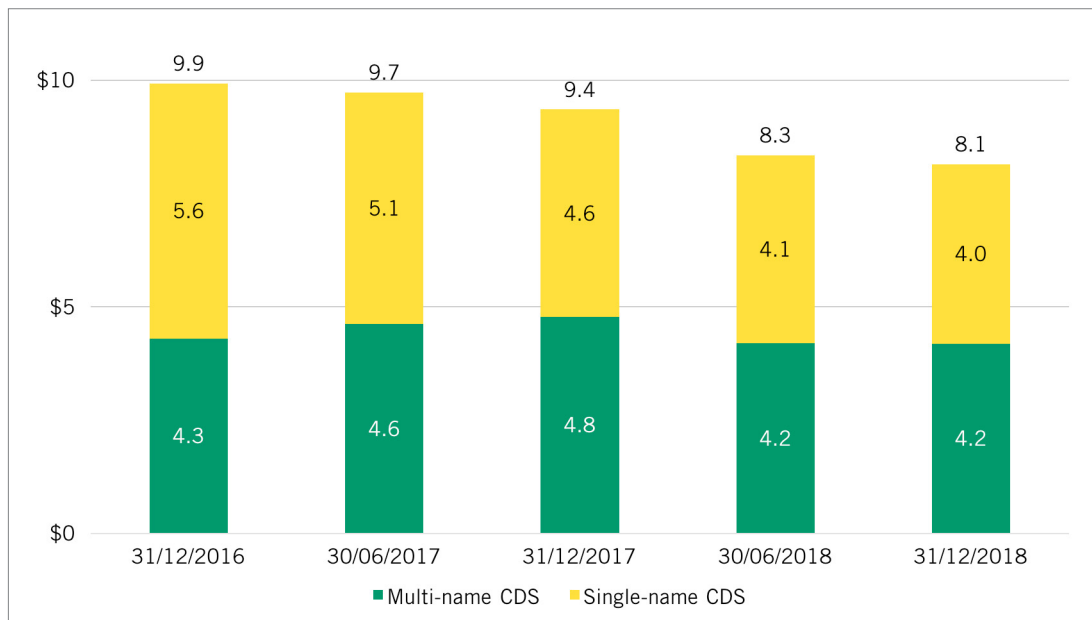
Source: DTCC and Bloomberg SDRs

Chart 5: Short-term contracts accounted for the majority of IRD traded notional in the US (US\$ trillions)



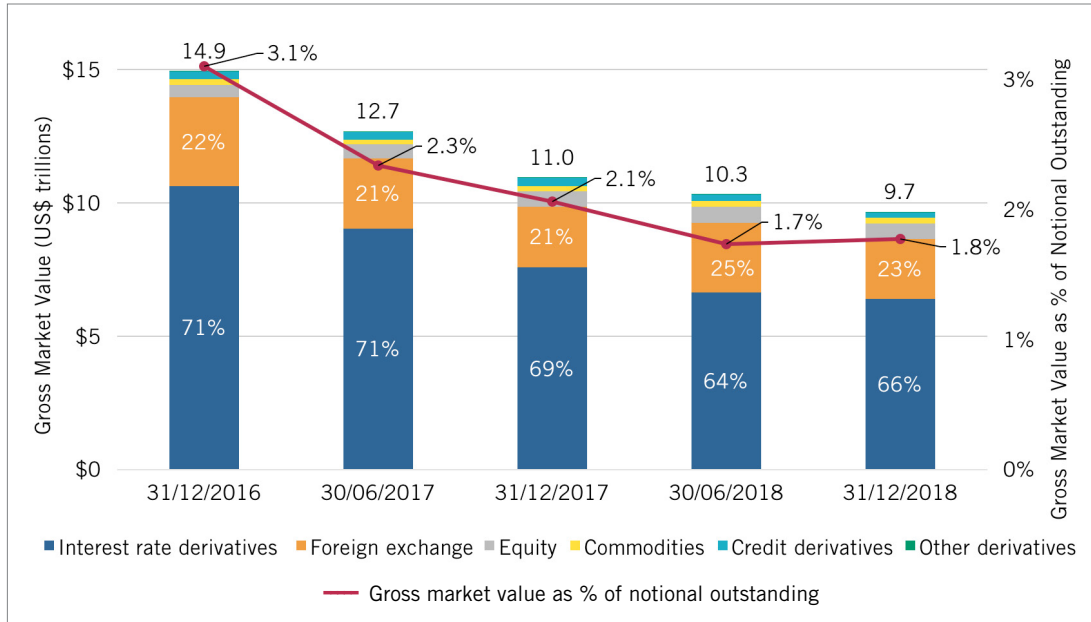
Source: DTCC and Bloomberg SDRs

Chart 6: CDS notional outstanding continued to decline (US\$ trillions)



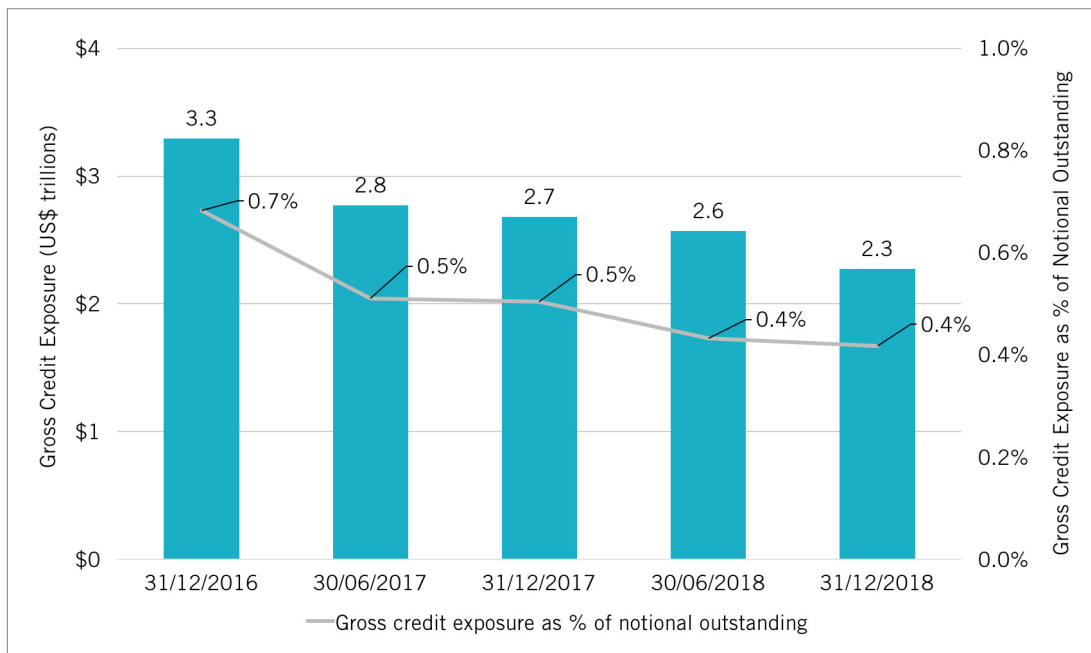
Source: DTCC and Bloomberg SDRs

Chart 7: Gross market value of global OTC derivatives continued to decline (US\$ trillions)



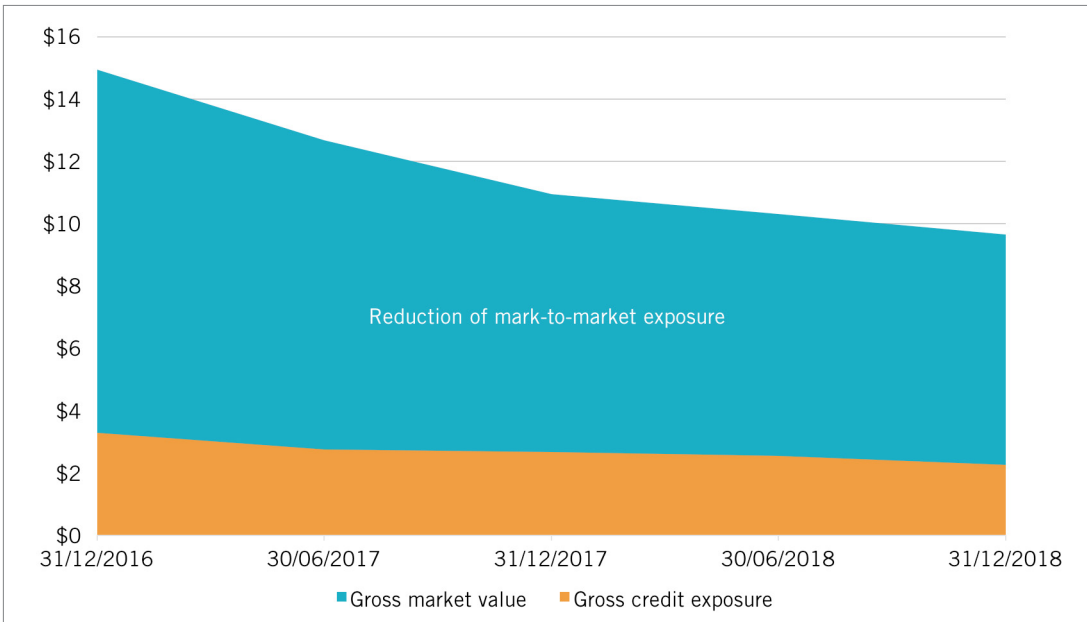
Source: BIS OTC Derivatives Statistics

Chart 8: Gross credit exposure of global OTC derivatives dropped to \$2.3 trillion and accounted for 0.4% of notional outstanding at year-end 2018 (US\$ trillions)



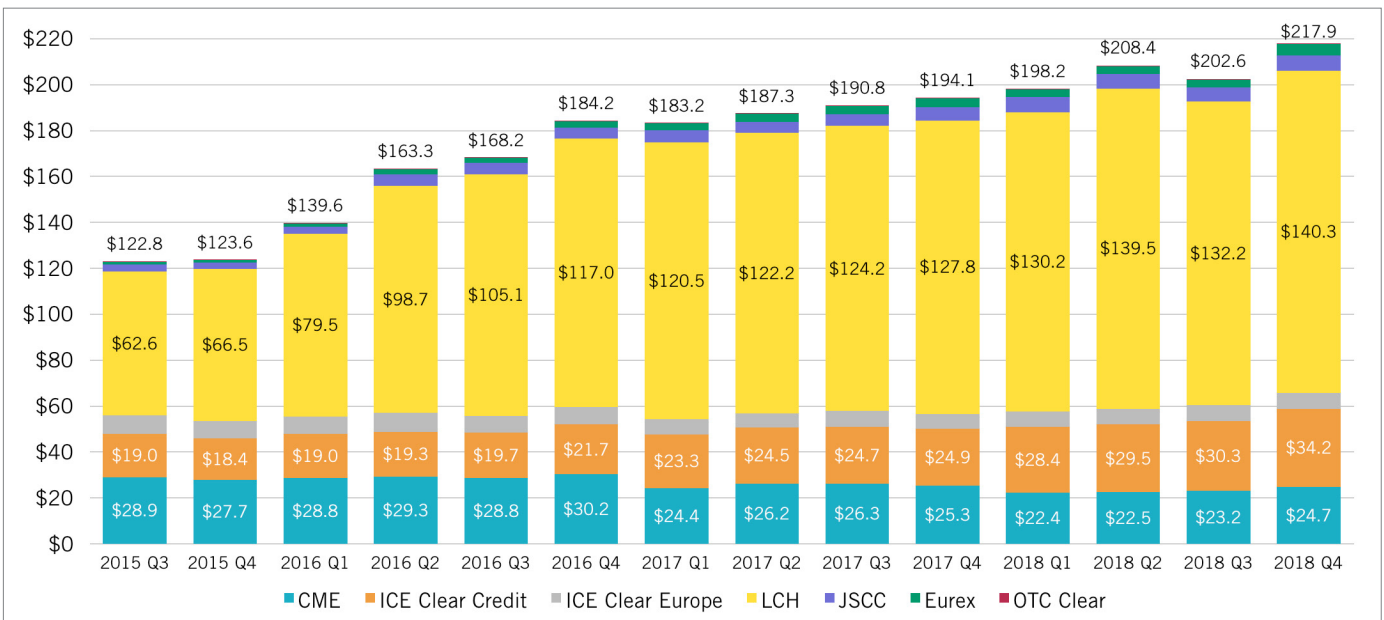
Source: BIS OTC Derivatives Statistics

Chart 9: As a result of close-out netting, market participants reduced their mark-to-market exposure by about 76.5% at year-end 2018 (US\$ trillions)



Source: BIS OTC Derivatives Statistics

Chart 10: Market participants posted \$217.9 billion of IM for cleared IRD and both single-name and index CDS at all major CCPs at year-end 2018 (US\$ billions)



Source: BIS OTC Derivatives Statistics

Table 1: Phase-one firms collected about \$1.1 trillion of IM and VM and for their non-cleared derivatives at year-end 2018

	Year-end 2018 (US\$ billions)
IM received	157.9
IM posted	93.3
Inter-affiliate IM received	39.4
VM received	858.6
VM posted	583.9
Total margin received	1055.9

Source: ISDA Margin Survey



ISDA has published other recent research papers:

- ***SwapsInfo First Quarter of 2019 Review, April 2019***

<https://www.isda.org/category/research/swapsinfo/>

- ***Interest Rate Benchmarks Review: First Quarter of 2019, April 2019***

<https://www.isda.org/a/eoUME/Interest-Rates-Benchmarks-Review-Q1-2019.pdf>

- ***ISDA Margin Survey Year-End 2018, April 2019***

<https://www.isda.org/2019/04/09/top-20-firms-collected-nearly-160-billion-in-initial-margin-at-year-end-2018-survey-finds/>

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ABOUT ISDA

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has more than 900 member institutions from 71 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and

international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, intermediaries, clearing houses and repositories, as well as law firms, accounting firms and other service providers. Information about ISDA and its activities is available on the Association's web site: www.isda.org. Follow us on Twitter @ISDA.