

KEY TRENDS IN THE SIZE AND COMPOSITION OF OTC DERIVATIVES MARKETS IN THE SECOND HALF OF 2023

The latest data from the Bank for International Settlements (BIS) over-the-counter (OTC) derivatives statistics shows a rise in the notional outstanding of OTC derivatives during the second half of 2023 versus the second half of 2022, driven by growth in interest rate and foreign exchange (FX) derivatives. The gross market value of outstanding OTC derivatives fell during the period, attributed to a slower pace of US dollar rate tightening. Gross credit exposure also declined.

Global OTC derivatives notional outstanding grew by 7.9% at the end of 2023 compared to the previous year. The gross market value of OTC derivatives contracts dropped by 12.7% and gross credit exposure – gross market value after netting – fell by 12.3% over the same period.

Total mark-to-market exposure was reduced by 82.8% as a result of close-out netting. Credit exposure was further lowered by the collateral that market participants posted for cleared and non-cleared transactions.

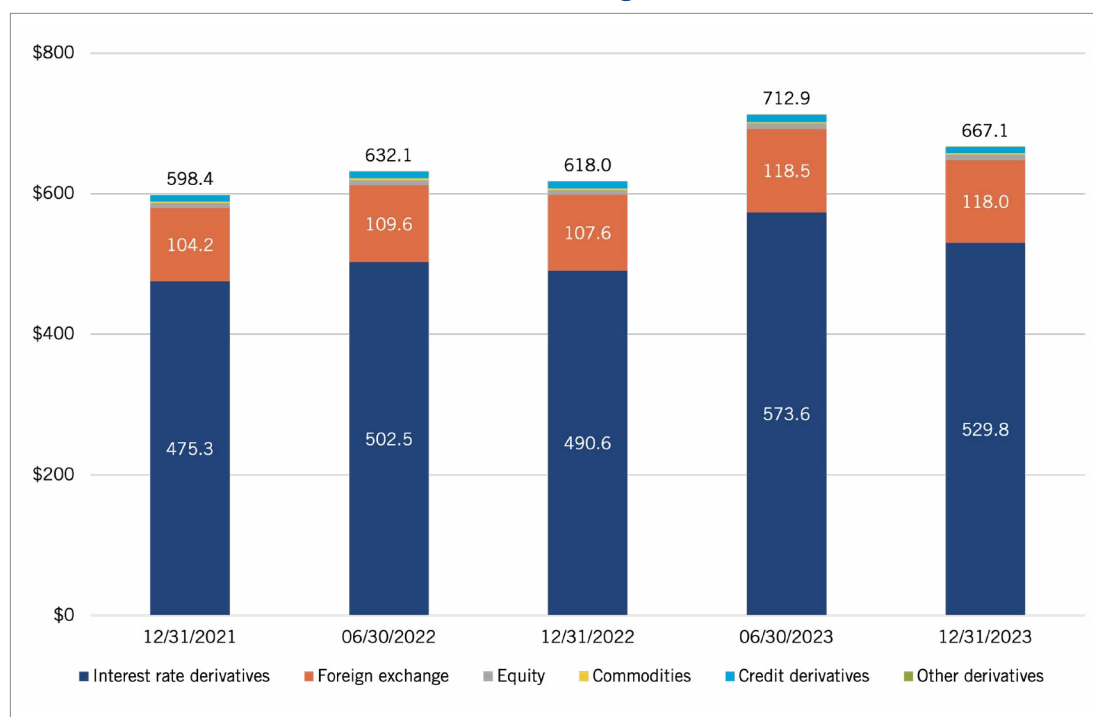
Clearing rates for both interest rate derivatives (IRD) and credit default swaps (CDS) remained high over the period. Firms posted \$392.2 billion of initial margin (IM) for cleared IRD and CDS transactions at all major central counterparties (CCPs) at year-end 2023 compared to \$384.4 billion at year-end 2022. The leading derivatives market participants also collected \$1.4 trillion of IM and variation margin (VM) for non-cleared derivatives exposures at the end of 2023, flat compared to the year before.

KEY TRENDS

Global OTC derivatives notional outstanding grew to \$667.1 trillion at the end of December 2023, 7.9% higher than the end of 2022 and 6.4% lower than mid-year 2023¹ (see Chart 1). Some of this reflects a seasonal pattern, whereby notional outstanding tends to increase in the first half of the year and drop in the second half.

IRD notional outstanding rose by 8.0% to \$529.8 trillion at year-end 2023 versus \$490.6 trillion at the end of 2022. FX derivatives notional outstanding grew by 9.7% to \$118.0 trillion from \$107.6 trillion over the same period. Credit, equity and commodity derivatives notional outstanding totaled \$8.7 trillion, \$7.8 trillion and \$2.2 trillion, respectively, at year-end 2023.

Chart 1: Global OTC Derivatives Notional Outstanding (US\$ trillions)



Source: BIS OTC Derivatives Statistics

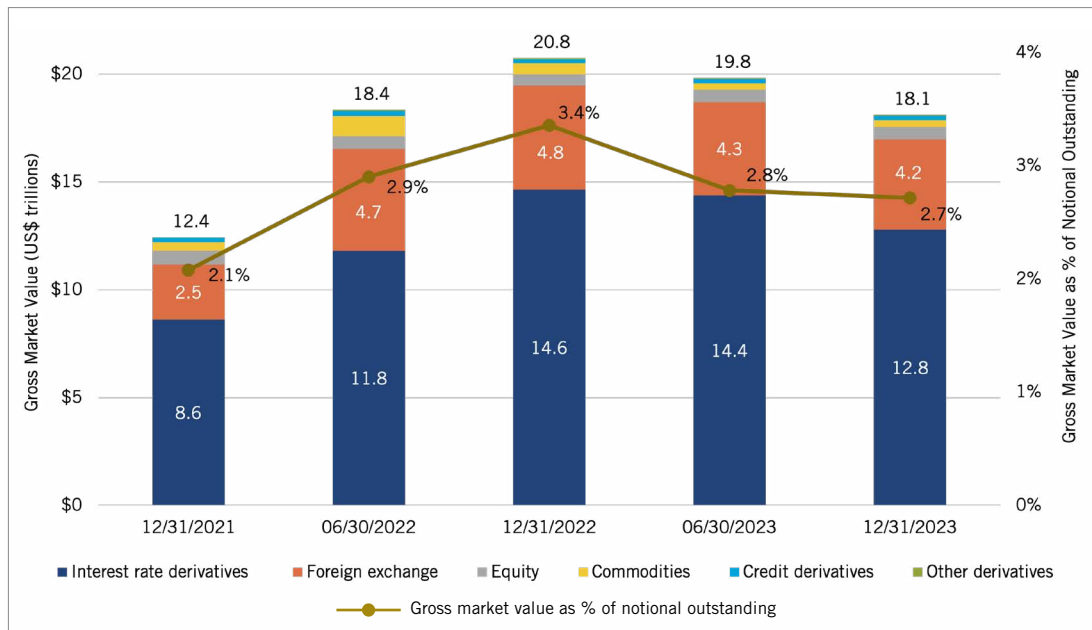
The gross market value² of OTC derivatives fell by 12.7% to \$18.1 trillion, driven by slowing US dollar rate tightening in 2023, which reduced IRD market value. Gross market value totaled 2.7% of notional outstanding at year-end 2023 versus 3.4% the previous year (see Chart 2).

IRD gross market value fell by 12.7% to \$12.8 trillion from \$14.6 trillion and FX derivatives gross market value dropped by 13.4% to \$4.2 trillion from \$4.8 trillion.

¹ BIS OTC Derivatives Statistics https://data.bis.org/topics/OTC_DER/tables-and-dashboards

² 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 www.bis.org/statistics/glossary.htm?&selection=312&scope=Statistics&c=a&base=term

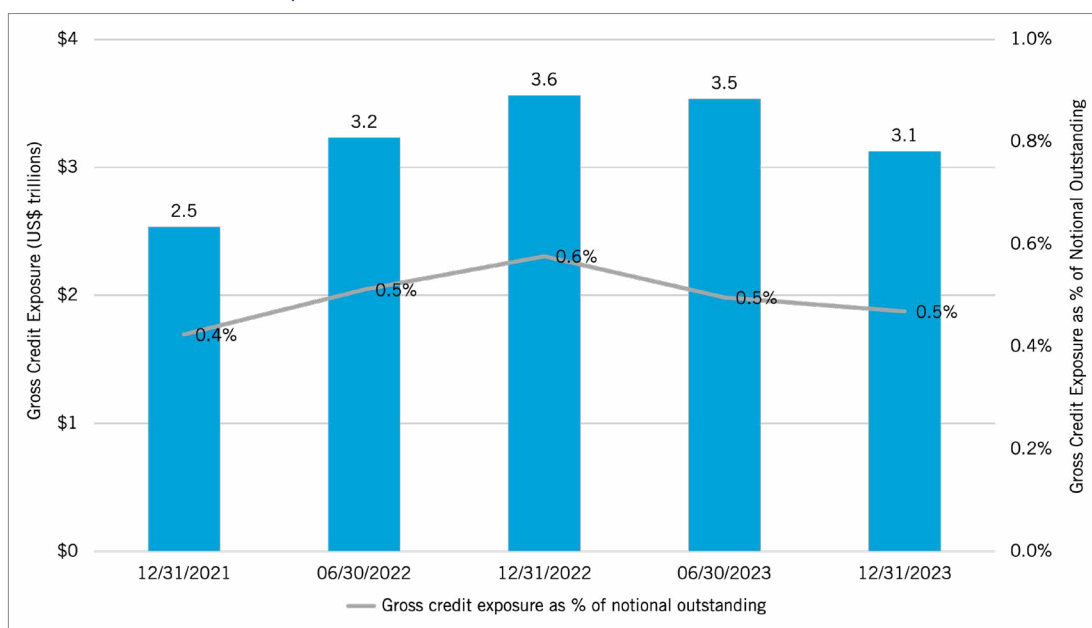
Chart 2: Gross Market Value of Global OTC Derivatives



Source: BIS OTC Derivatives Statistics

Gross credit exposure of OTC derivatives, which is a more accurate measure of counterparty credit risk, declined by 12.3% to \$3.1 trillion at year-end 2023 versus the previous year (see Chart 3), equating to 0.5% of notional outstanding³.

Chart 3: Gross Credit Exposure of Global OTC Derivatives

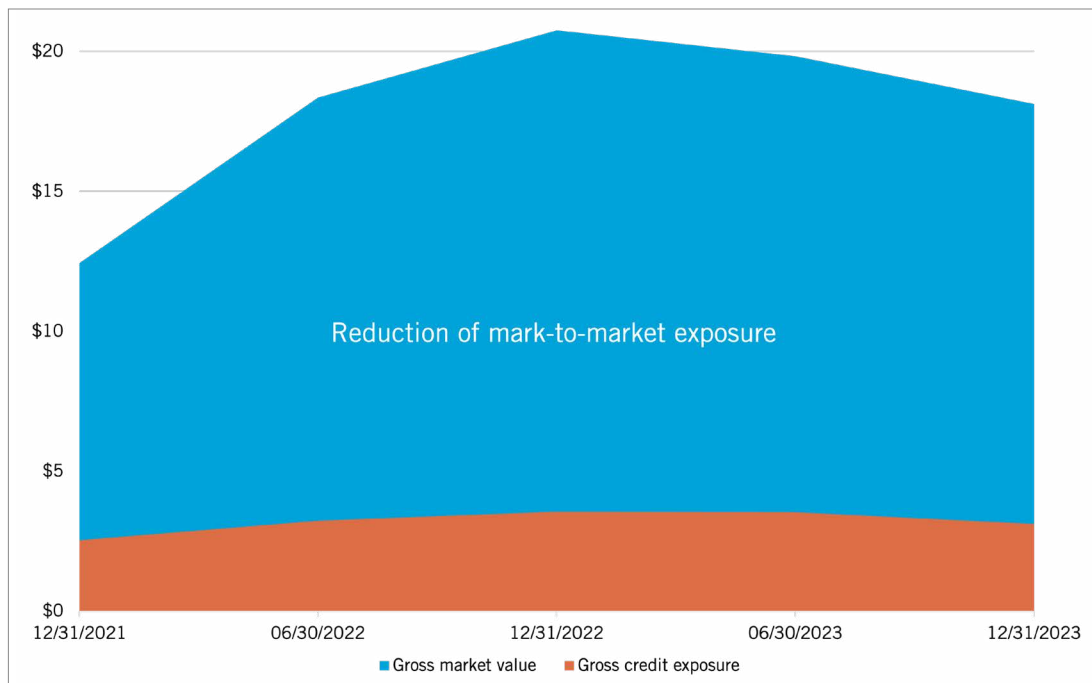


Source: BIS OTC Derivatives Statistics

Market participants reduced their mark-to-market exposure by 82.8% at year-end 2023 as a result of close-out netting (see Chart 4). This credit exposure is further reduced by the collateral posted for cleared and non-cleared transactions.

³ Gross credit exposure adjusts gross market value for legally enforceable netting agreements but not for collateral. See BIS Glossary www.bis.org/statistics/glossary.htm?&selection=312&scope=Statistics&c=a&base=term

Chart 4: Reduction of Mark-to-market Exposure (US\$ trillions)



Source: BIS OTC Derivatives Statistics

IM and VM collected by leading derivatives market participants subject to regulatory margin requirements for non-cleared derivatives totaled \$1.4 trillion at year-end 2023, flat compared to the year before. This included \$462.0 billion of IM and \$944.5 billion of VM. In comparison, IM and VM collected at year-end 2022 totaled \$325.7 billion and \$1.1 trillion, respectively⁴ (see Chart 5).

Chart 5: IM and VM Received by Phase-one, Phase-two and Phase-three Firms⁵ (US\$ trillions)



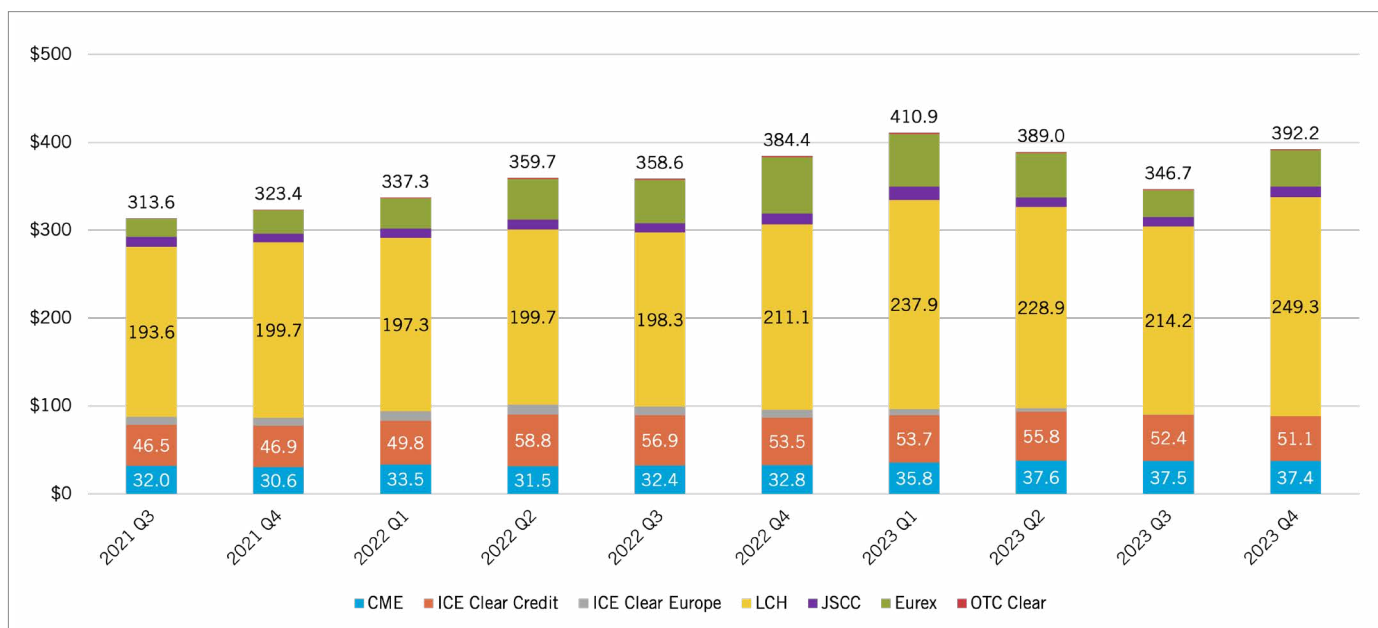
Source: ISDA Margin Survey

⁴ ISDA Margin Survey Year-End 2023 www.isda.org/a/OswgE/ISDA-Margin-Survey-Year-End-2023.pdf

⁵ This includes 32 financial institutions that participated in ISDA Margin Survey in 2023

Market participants also posted \$392.2 billion of IM for cleared IRD and CDS derivatives at all major CCPs in the fourth quarter of 2023^{6,7}. This represents a 2.0% increase compared to \$384.4 billion in the fourth quarter of 2022 (see Chart 6).

Chart 6: IM Posted for Cleared IRD and CDS (US\$ billions)



Source: CCP Disclosures

⁶ All numbers are converted to US dollars based on the exchange rates at the end of each quarter: www.x-rates.com/historical

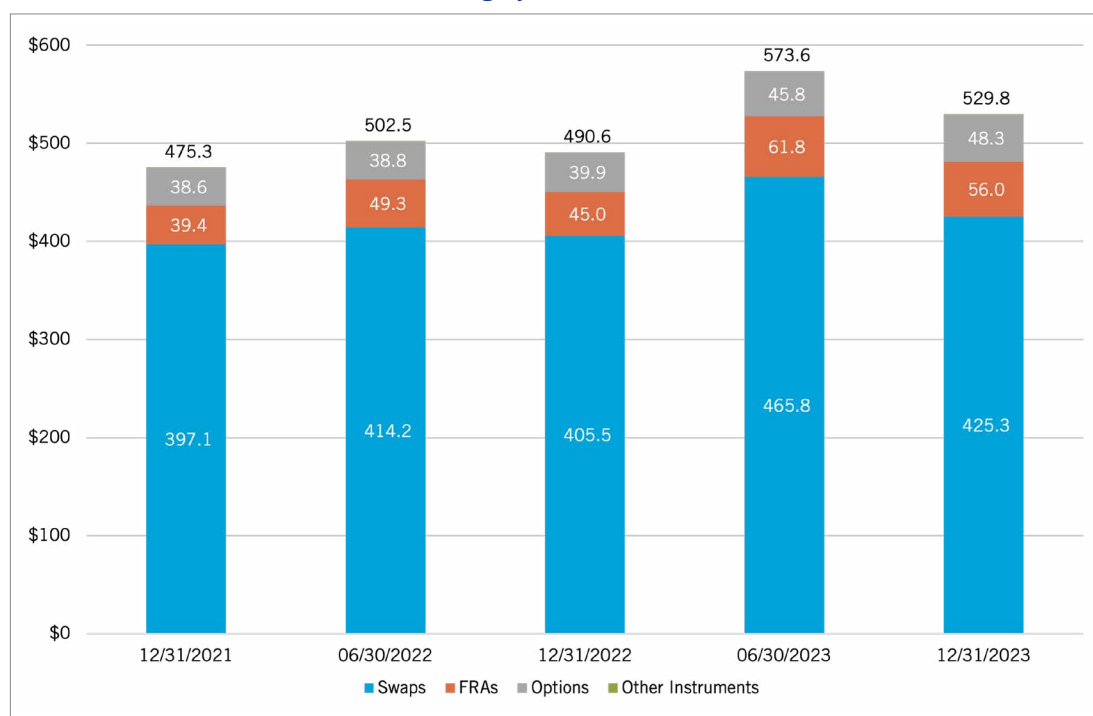
⁷ LCH includes LCH Ltd and LCH SA

INTEREST RATE DERIVATIVES

IRD notional outstanding totaled \$529.8 trillion and accounted for 79.4% of global OTC derivatives notional outstanding at the end of 2023. IRD notional outstanding rose by 8.0% versus the end of 2022 and fell by 7.6% compared to mid-year 2023 (see Chart 1).

Interest rate swaps (IRS) notional outstanding increased by 4.9% to \$425.3 trillion and accounted for 80.3% of total IRD notional outstanding at year-end 2023. Forward rate agreements (FRAs) notional outstanding rose by 24.6% to \$56.0 trillion and options notional outstanding totaled \$48.3 trillion (see Chart 7).

Chart 7: Global IRD Notional Outstanding by Product (US\$ trillions)



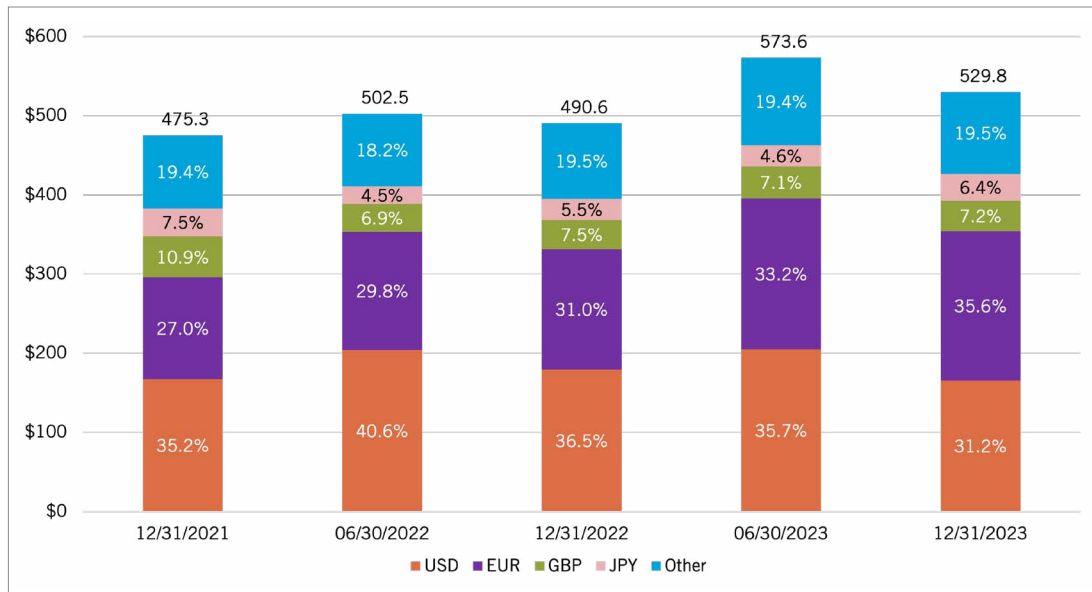
Source: BIS OTC Derivatives Statistics

US-dollar-denominated IRD notional outstanding fell by 7.7% to \$165.4 trillion, accounting for 31.2% of total IRD notional outstanding at year-end 2023 versus 36.5% the previous year (see Chart 8).

Euro-denominated IRD notional outstanding rose by 24.2% to \$188.8 trillion, comprising 35.6% of total IRD notional outstanding compared to 31.0% at the end of 2022.

Sterling-denominated IRD notional outstanding rose by 4.2% to \$38.3 trillion, making up 7.2% of total IRD notional outstanding at year-end 2023 versus 7.5% at year-end 2022.

Chart 8: Global IRD Notional Outstanding by Currencies (US\$ trillions)

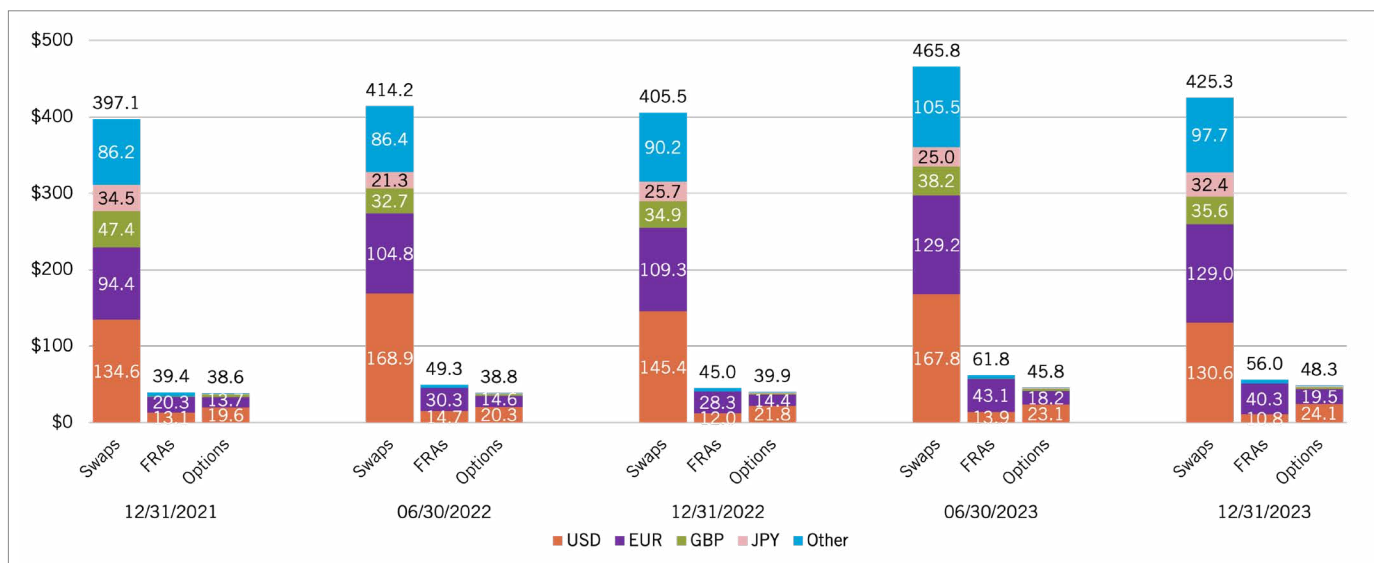


Source: BIS OTC Derivatives Statistics

Euro-denominated IRS notional outstanding increased by 18.0% to \$129.0 trillion and sterling-denominated IRS notional outstanding grew by 2.0% to \$35.6 trillion. US-dollar-denominated IRS notional outstanding fell by 10.2% to \$130.6 trillion at year-end 2023 compared to \$145.4 trillion at the end of 2022 (see Chart 9).

Euro-denominated FRA notional outstanding grew by 42.5% to \$40.3 trillion from \$28.3 trillion, while US-dollar-denominated FRA notional outstanding declined by 10.2%.

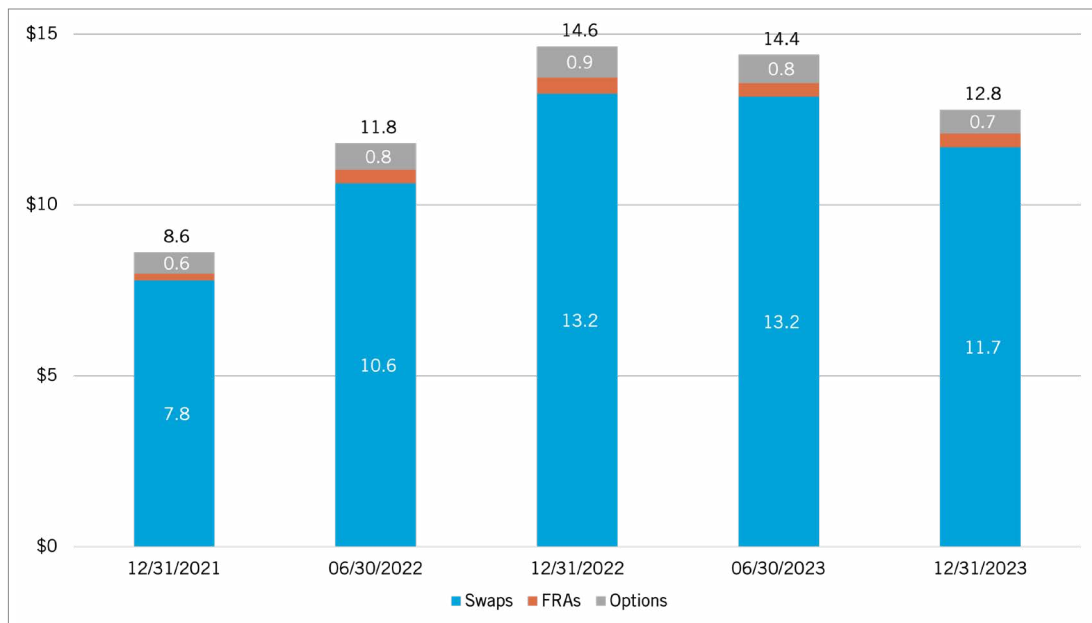
Chart 9: Global IRD Notional Outstanding by Product and Currency (US\$ trillions)



Source: BIS OTC Derivatives Statistics

IRD gross market value fell by 12.7% to \$12.8 trillion at year-end 2023 compared to \$14.6 trillion the year before. IRS gross market value declined by 11.8% to \$11.7 trillion from \$13.2 trillion, and FRAs and options gross market value dropped by 13.3% and 24.2%, respectively (see Chart 10).

Chart 10: Gross Market Value of Global IRD by Product (US\$ trillions)



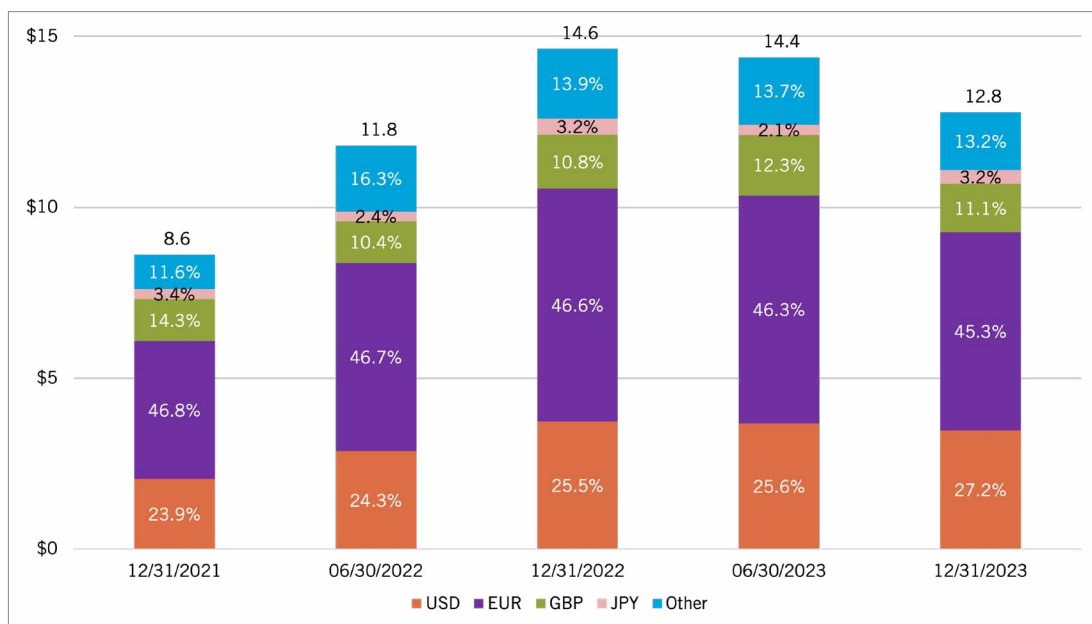
Source: BIS OTC Derivatives Statistics

US-dollar-denominated IRD gross market value declined by 7.0% to \$3.5 trillion from \$3.7 trillion, making up 27.2% of total IRD gross market value compared to 25.5% at the end of 2022 (see Chart 11).

Euro-denominated IRD gross market value fell by 15.0% to \$5.8 trillion from \$6.8 trillion, accounting for 45.3% of total gross market value versus 46.6% at year-end 2022.

Sterling-denominated IRD gross market value fell by 9.9% to \$1.4 trillion, comprising 11.1% of total gross market value at year-end 2023 compared to 10.8% at the end of 2022.

Chart 11: Global IRD Gross Market Value by Currency (US\$ trillions)

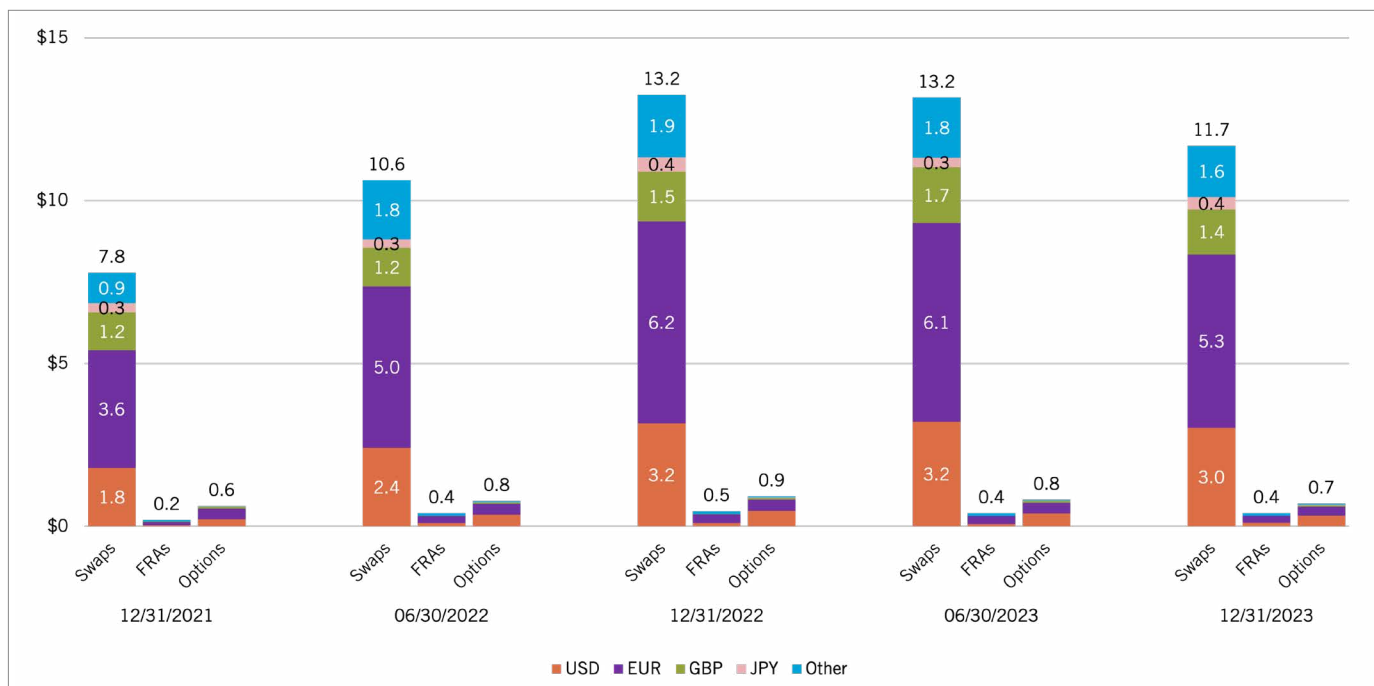


Source: BIS OTC Derivatives Statistics

The gross market value of US-dollar-denominated IRS fell by 4.2% to \$3.0 trillion at year-end 2023 from \$3.2 trillion at year-end 2022. Euro-denominated IRS gross market value declined by 14.2% to \$5.3 trillion and sterling-denominated gross market value dropped by 9.8% to \$1.4 trillion (see Chart 12).

The gross market value of US-dollar-denominated FRAs rose by 13.4% to \$111.3 billion at the end of 2023 versus \$98.2 billion at year-end 2022, while euro-denominated FRA gross market value dropped by 22.8% to \$208.7 billion from \$270.3 billion.

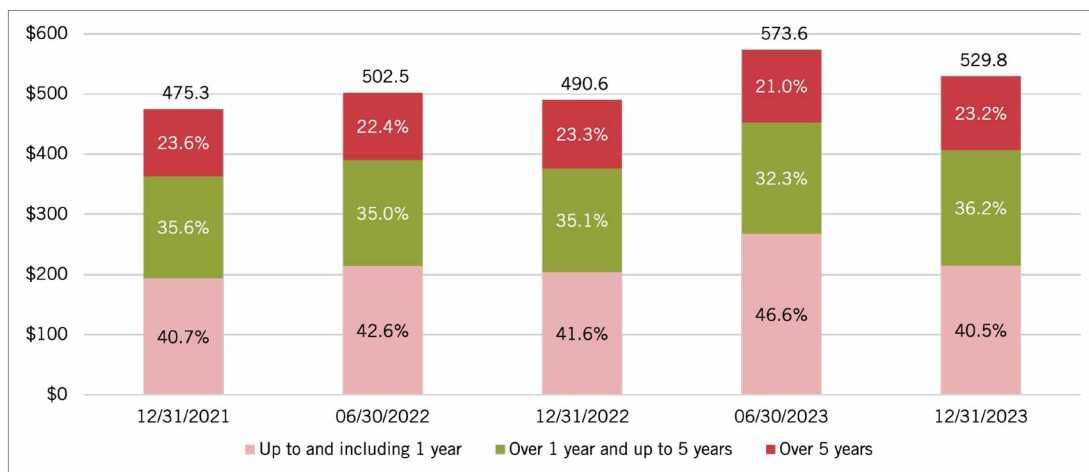
Chart 12: Gross Market Value of Global IRD by Product and Currency (US\$ trillions)



Source: BIS OTC Derivatives Statistics

IRD contracts with a remaining maturity up to and including one year totaled \$214.5 trillion and accounted for 40.5% of global IRD notional outstanding at year-end 2023 (see Chart 13). IRD notional outstanding with a remaining maturity over one year and up to five years was \$192.0 trillion (36.2% of total notional outstanding) and contracts with a remaining maturity over five years totaled \$123.1 trillion (23.2% of total notional outstanding).

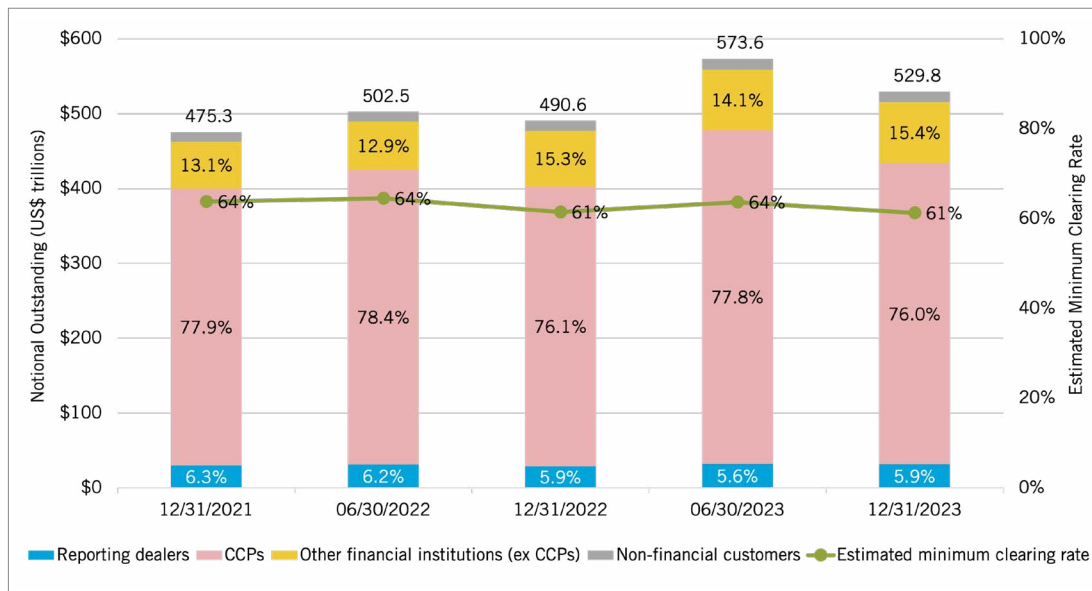
Chart 13: Global IRD Notional Outstanding by Remaining Maturity (US\$ trillions)



Source: BIS OTC Derivatives Statistics

The share of IRD notional cleared by CCPs was 76.0% in the second half of 2023 and totaled \$402.4 trillion. The estimated minimum clearing rate for IRD was 61.2% at year-end 2023⁸ (see Chart 14).

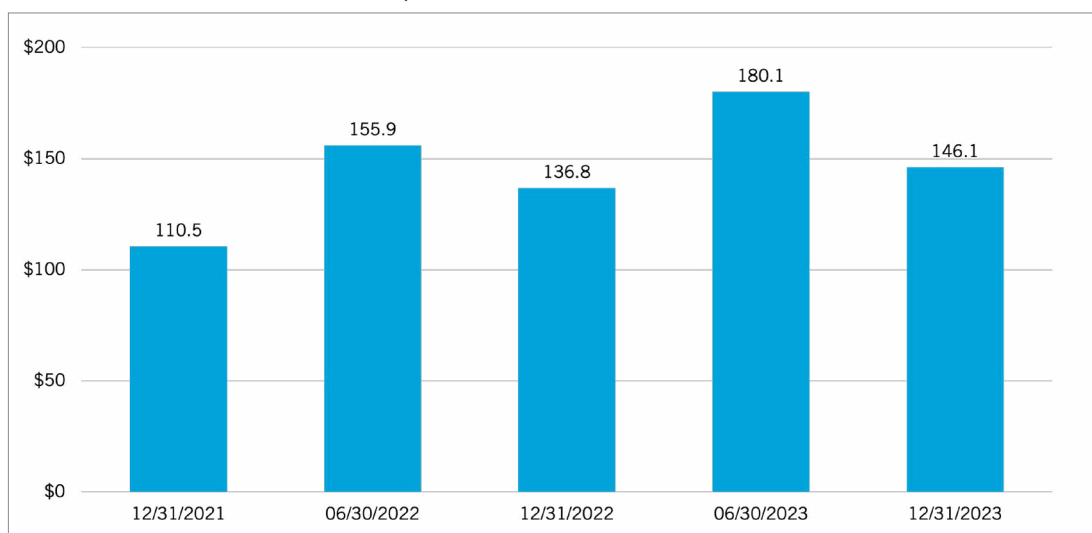
Chart 14: Global IRD Notional Outstanding by Counterparties (US\$ trillions)



Source: BIS OTC Derivatives Statistics

ISDA SwapsInfo data shows that trading in IRD products reported in the US increased by 6.8% to \$146.1 trillion in the second half of 2023 versus \$136.8 trillion in the second half of 2022 (see Chart 15)^{9,10}.

Chart 15: IRD Traded Notional Reported in the US (US\$ trillions)



Source: DTCC SDR

⁸ The estimated minimum clearing rate adjusts for potential double counting of interdealer trades novated to central counterparties (CCPs). It is calculated as $(CCP / 2) / (1 - (CCP / 2))$, where 'CCP' represents the share of notional amounts outstanding that dealers report against CCPs. The true clearing rate is likely to be higher as many trades will be initiated with CCPs

⁹ Based on data from the Depository Trust and Clearing Corporation (DTCC) swap data repository (SDR). This data covers only transactions required to be disclosed under Commodity Futures Trading Commission (CFTC) regulations. See ISDA SwapsInfo website www.swapsinfo.org/

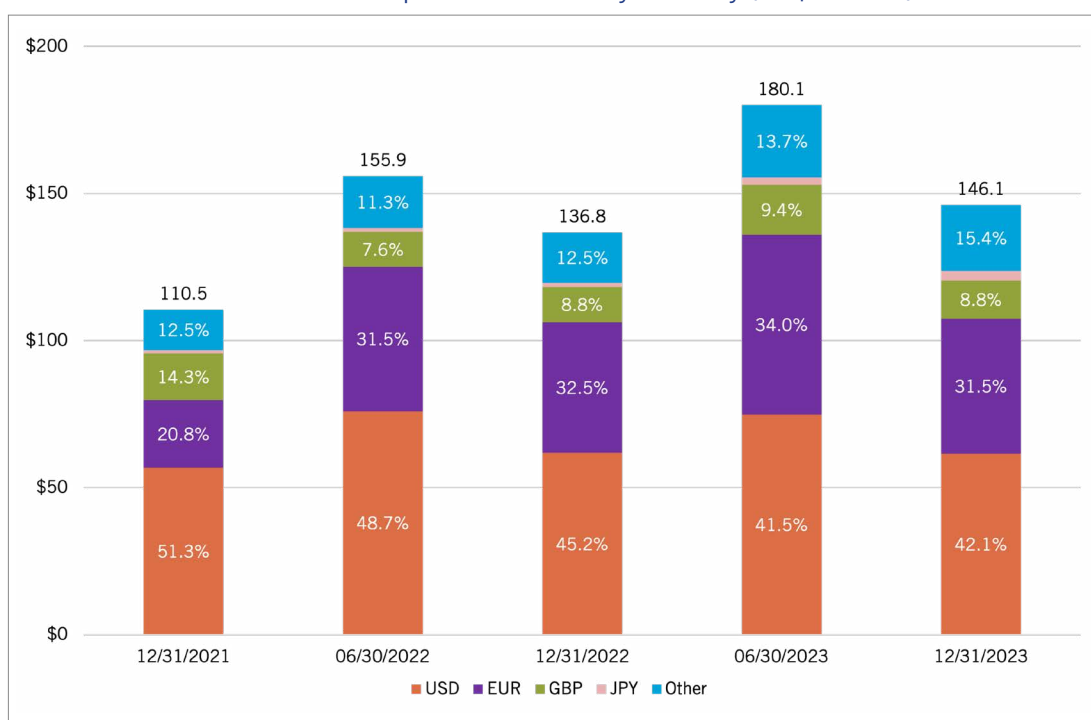
¹⁰ IRD data has been amended following the publication of the SwapsInfo First Half of 2023 and the Second Quarter of 2023 Review www.isda.org/2023/07/31/swapsinfo-first-half-of-2023-and-the-second-quarter-of-2023-review/

US-dollar-denominated IRD traded notional reported in the US fell by 0.5% to \$61.5 trillion in the second half of 2023, accounting for 42.1% of total IRD traded notional versus 45.2% in the second half of 2022 (see Chart 16).

Euro-denominated IRD traded notional rose by 3.4% to \$46.0 trillion, equating to 31.5% of total IRD traded notional compared to 32.5% in the second half of 2022.

Sterling-denominated IRD traded notional grew by 7.7% to \$12.9 trillion, comprising 8.8% of total IRD traded notional, which is unchanged compared to the second half of 2022.

Chart 16: IRD Traded Notional Reported in the US by Currency (US\$ trillions)



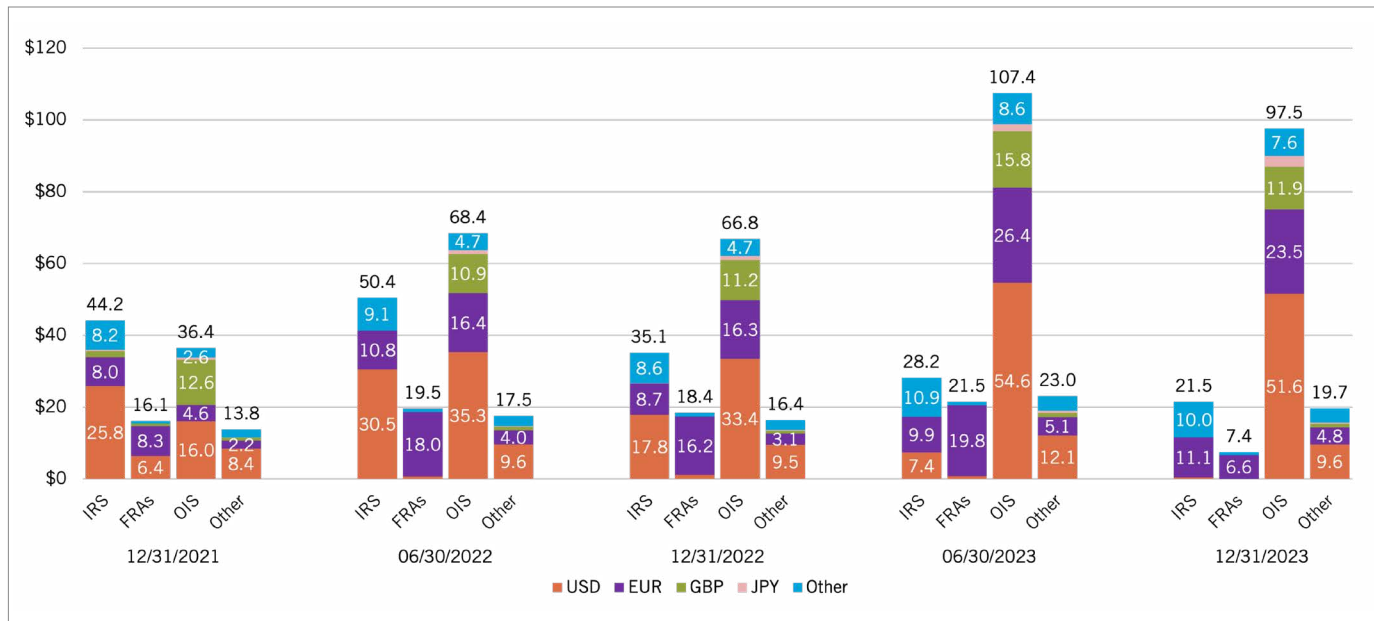
Source: DTCC SDR

US-dollar-denominated overnight index swaps (OIS) traded notional reported in the US increased by 54.3% to \$51.6 trillion in the second half of 2023 from \$33.4 trillion in the second half of 2022. Euro-denominated OIS traded notional rose by 43.5% to \$23.5 trillion from \$16.3 trillion and sterling-denominated OIS traded notional grew by 6.0% to \$11.9 trillion from \$11.2 trillion over the same period (see Chart 17).

US-dollar-denominated fixed-for-floating IRS traded notional fell by 98.0% to \$363.3 billion, euro-denominated fixed-for-floating IRS traded notional grew by 27.4% to \$11.1 trillion from \$8.7 trillion and sterling-denominated IRS traded notional declined by 44.7% to \$2.8 billion from \$5.0 billion.

Euro-denominated FRA traded notional fell by 59.2% to \$6.6 trillion in the second half of 2023 from \$16.2 trillion in the second half of 2022. There were no sterling-denominated FRAs in the second half of 2023, while US-dollar-denominated FRA traded notional totaled \$2.3 billion.

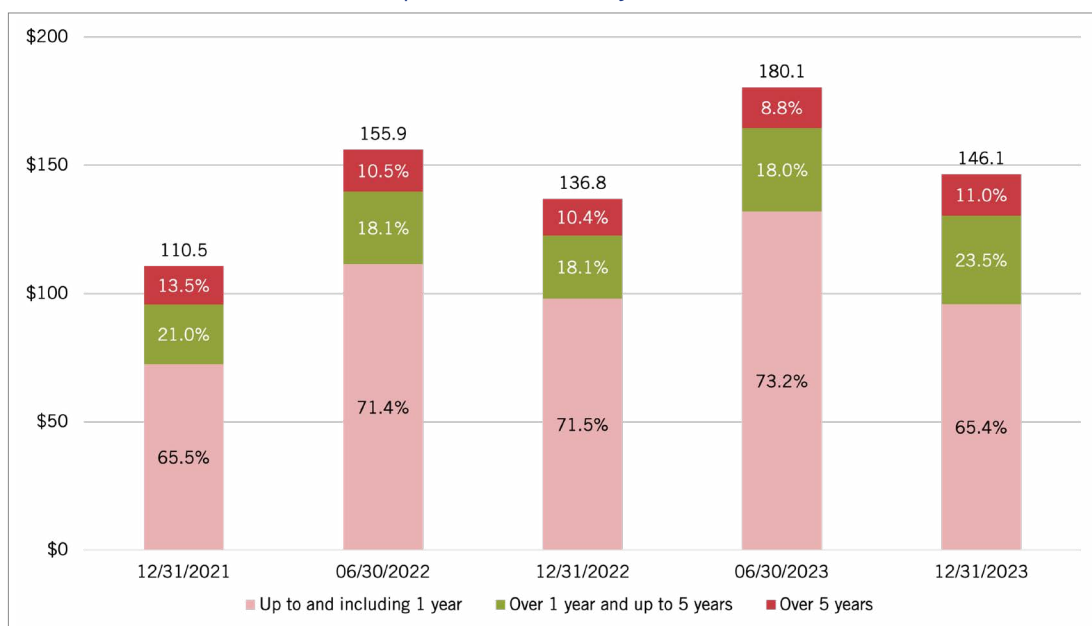
Chart 17: IRD Traded Notional Reported in the US by Product and Currency (US\$ trillions)



Source: DTCC SDR

In the second half of 2023, 65.4% of total IRD trading was in contracts with a tenor up to and including one year compared to 71.5% in the second half of 2022¹¹. Contracts with a tenor over one year and up to five years accounted for 23.5% of total IRD traded notional and contracts with a tenor over five years totaled 11.0% (see Chart 18).

Chart 18: IRD Traded Notional Reported in the US by Tenor (US\$ trillions)

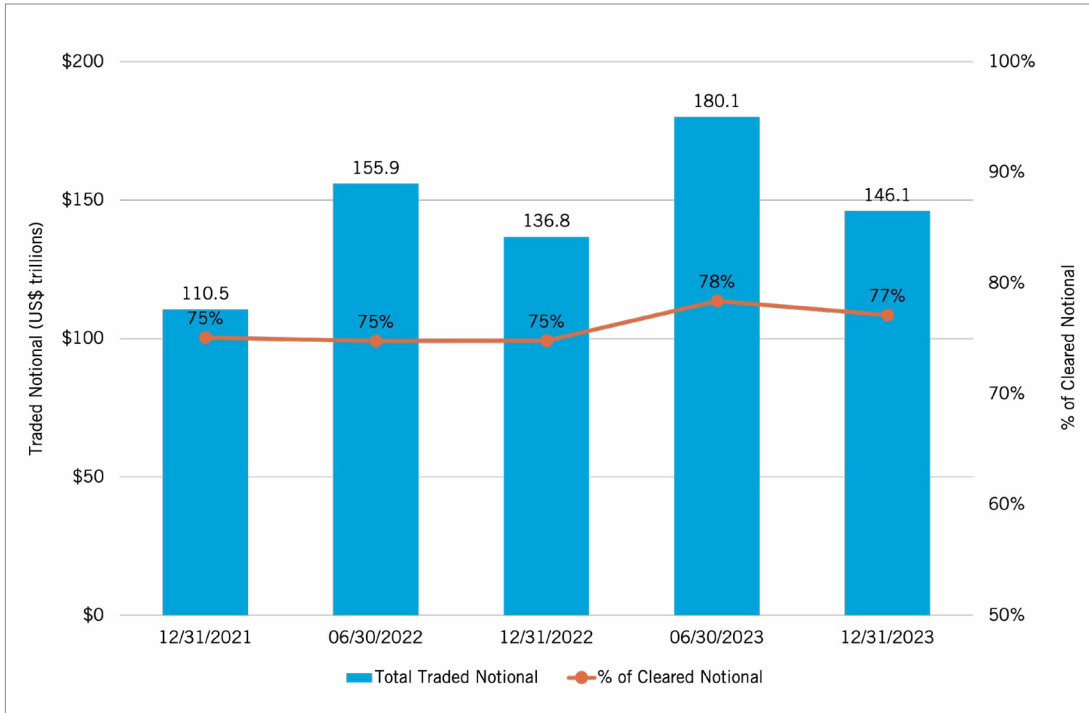


Source: DTCC SDR

Cleared IRD transactions comprised 77.1% of total IRD traded notional in the second half of 2023 (see Chart 19).

⁹ Tenor is calculated as the difference between the effective date and the end date

Chart 19: Percentage of IRD Cleared Notional Reported in the US



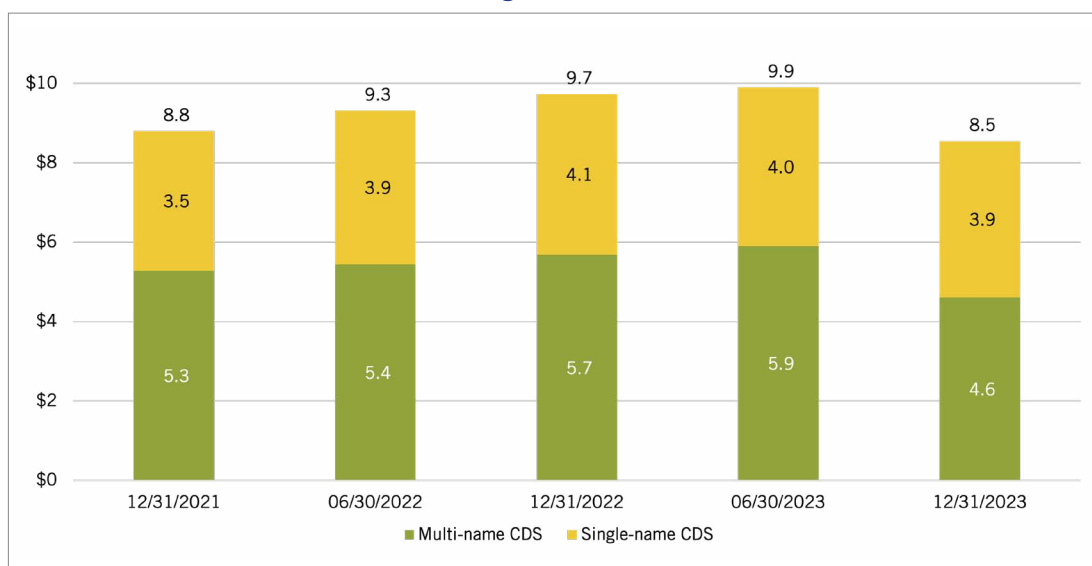
Source: DTCC SDR

CREDIT DERIVATIVES

According to BIS data, CDS notional outstanding (including single name and index CDS) totaled \$8.5 trillion at year-end 2023, a 12.1% decline versus the end of 2022 and a 13.7% drop compared to mid-year 2023 (see Chart 20).

Single-name CDS notional outstanding fell by 2.7% to \$3.9 trillion at the end of 2023 versus \$4.1 trillion at year-end 2022 and multiple-name CDS notional outstanding dropped by 18.9% to \$4.6 trillion.

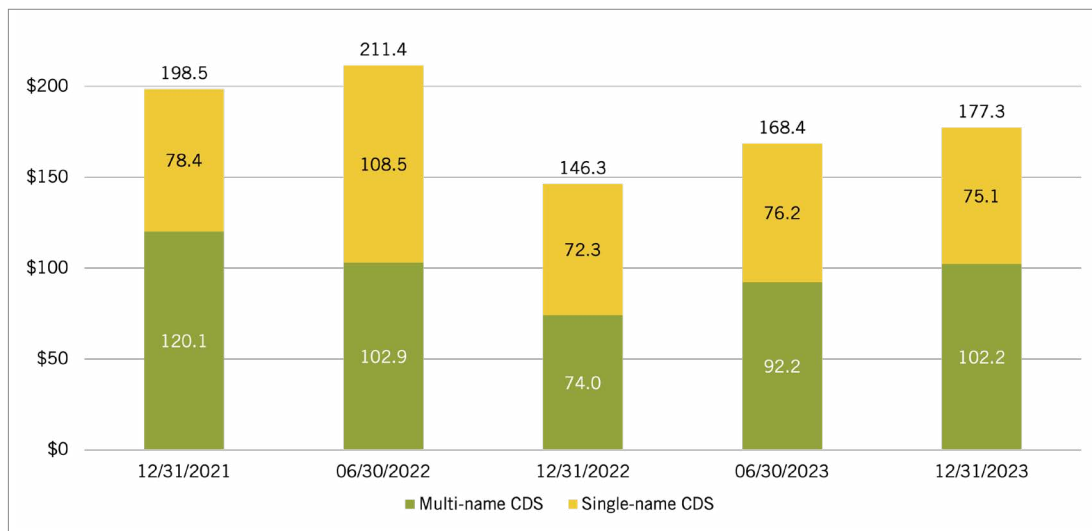
Chart 20: Global CDS Notional Outstanding (US\$ trillions)



Source: BIS OTC Derivatives Statistics

The gross market value of CDS increased by 21.2% to \$177.3 billion at year-end 2023 from \$146.3 billion at year-end 2022 (see Chart 21). Single-name CDS gross market value rose by 4.0% to \$75.1 billion from \$72.3 billion and multiple-name CDS gross market value grew by 38.1% to \$102.2 from \$74.0 billion.

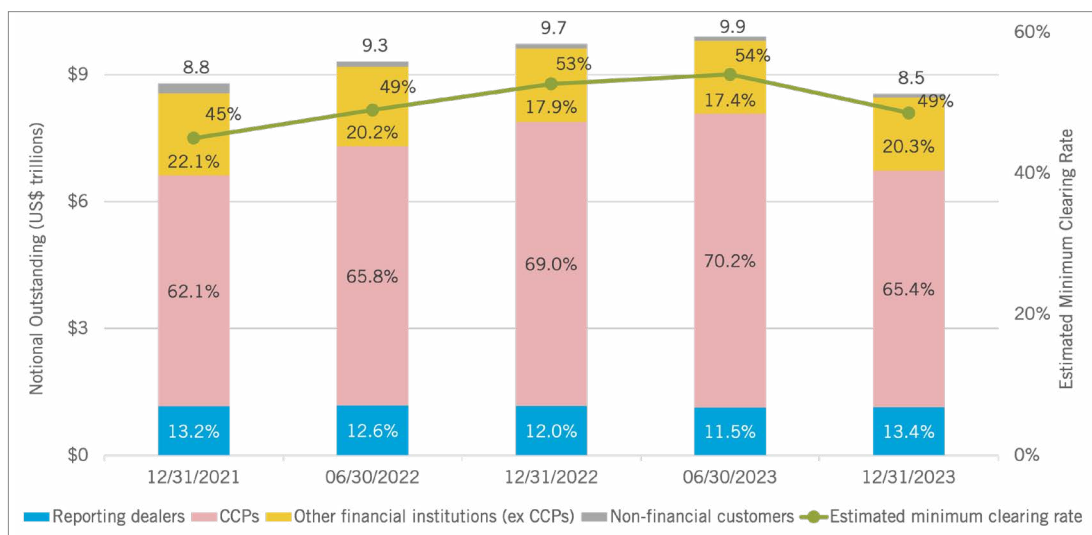
Chart 21: Global CDS Gross Market Value (US\$ billions)



Source: BIS OTC Derivatives Statistics

The share of CDS notional outstanding cleared by CCPs was 65.4% and totaled \$5.6 trillion in the second half of 2023. The estimated minimum clearing rate for CDS contracts fell to 48.6% in the second half of 2023 compared to 52.7% in the second half of 2022¹² (Chart 22).

Chart 22: Global CDS Notional Outstanding by Counterparties (US\$ trillions)

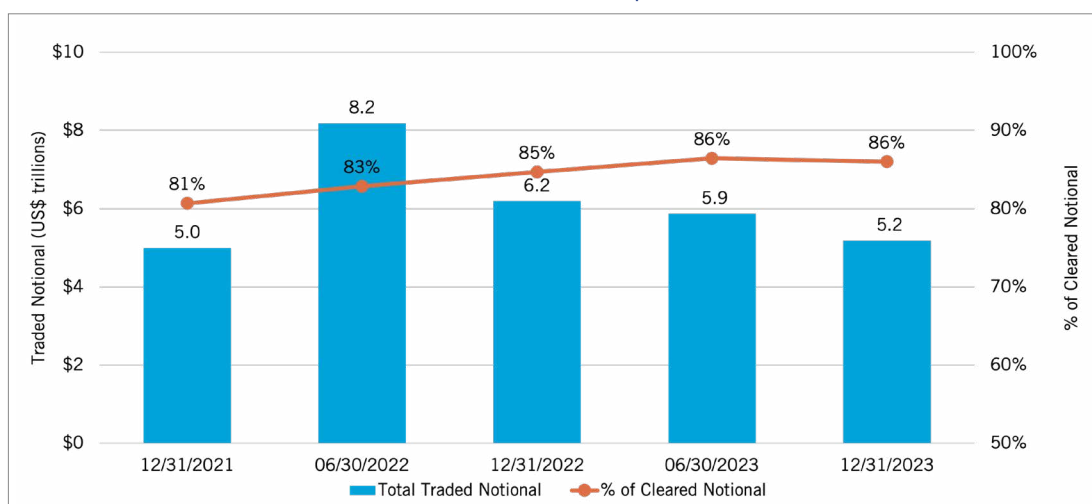


Source: BIS OTC Derivatives Statistics

According to data from ISDA SwapsInfo, US-reported index CDS traded notional dropped by 16.3% to \$5.2 trillion in the second half of 2023 compared to \$6.2 trillion in the second half of 2022 (see Chart 23)¹³.

Cleared index credit derivatives transactions comprised 86.0% of credit derivatives traded notional in the second half of 2023 compared to 84.7% in the second half of 2022.

Chart 23: Index Credit Derivatives Traded Notional Reported in the US (US\$ trillions)



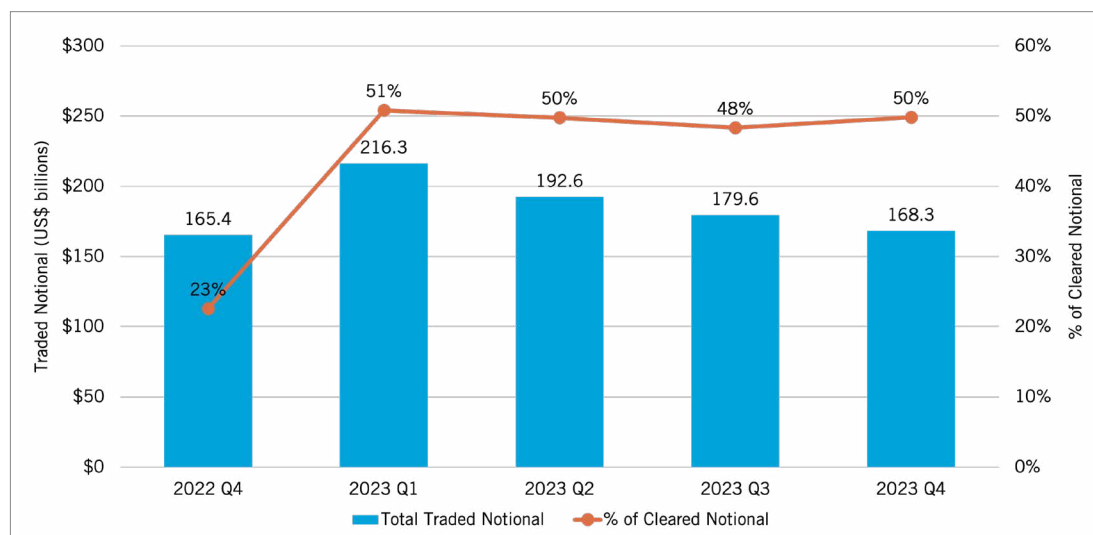
Source: DTCC SDR

¹² The estimated minimum clearing rate adjusts for potential double counting of interdealer trades novated to CCPs. It is calculated as $(CCP / 2) / (1 - (CCP / 2))$, where 'CCP' represents the share of notional amounts outstanding that dealers report against CCPs. The true clearing rate is likely to be higher as many trades will be initiated with CCPs

¹³ Index credit derivatives mostly comprise credit default swap (CDS) indices, but also include CDS index tranches, credit swaptions, exotic products, total return swaps and insignificant amount of single-name CDS. This data only includes transactions reported to the DTCC SDR under CFTC regulations. Credit derivatives reported to the DTCC security-based swap data repository (SBSDR) under US Securities and Exchange Commission (SEC) regulations are not included in this data

Security-based credit derivatives traded notional totaled \$347.8 billion in the second half of 2023¹⁴. Cleared security-based credit derivatives transactions comprised 49.1% of credit derivatives traded notional¹⁵ (see Chart 24).

Chart 24: Security-based Credit Derivatives Traded Notional Reported in the US (US\$ billions)



Source: DTCC and ICE Trade Vault SBSDRs

¹⁴ Security-based credit derivatives mostly comprise single-name CDS, but also include total return swaps, index, exotic, index tranche, swaptions and other single-name swaps (eg, asset-backed, loan and municipal security-based swaps). This data includes security-based credit derivatives transactions reported to the DTCC SBSDR and ICE Trade Vault from February 2022 under SEC regulations. It does not include any transactions that are required to be reported to the DTCC SDR under CFTC regulations

¹⁵ Cleared transactions include those that have been cleared or are planned to be submitted for clearing. The percentage of cleared transactions increased significantly in the first quarter of 2023 due to a change in reporting logic. Prior to December 2022, only 'Yes' or 'No' was expected to be reported for the cleared status. Following the change, 'Intent to clear' is also expected to be reported for transactions that are planned to be submitted to clearing



ISDA has published other recent research papers:

- ***Interest Rate Derivatives Trading Activity Reported in EU, UK and US Markets: First Quarter of 2024***

www.isda.org/a/XA1gE/IRD-Trading-Activity-Reported-in-EU-UK-and-US-Markets-First-Quarter-of-2024.pdf

- ***SwapsInfo First Quarter of 2024 Review***

www.isda.org/a/zk1gE/SwapsInfo-First-Quarter-of-2024-Review.pdf

- ***ISDA Margin Survey Year-end 2023***

www.isda.org/a/OswgE/ISDA-Margin-Survey-Year-End-2023.pdf

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Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 1,000 member institutions from 77 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

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