

# KEY TRENDS IN THE SIZE AND COMPOSITION OF OTC DERIVATIVES MARKETS IN THE SECOND HALF OF 2022

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The latest data from the Bank for International Settlements (BIS) over-the-counter (OTC) derivatives statistics shows a significant increase in gross market value and gross credit exposure of OTC derivatives during the second half of 2022 compared to the second half of 2021. The growth was driven by higher interest rate derivatives (IRD) market value following increases in interest rates for key currencies in 2022.

The gross market value of OTC derivatives contracts rose by 66.8% at year-end 2022 compared to the end of 2021. Gross credit exposure – gross market value after netting – grew by 44.9%. Global OTC derivatives notional outstanding increased by 3.3% at year-end 2022 compared to year-end 2021.

Market participants reduced their total mark-to-market exposure by 82.3% at year-end 2022 due to close-out netting. Credit exposure was further reduced by the collateral that market participants posted for cleared and non-cleared derivatives transactions.

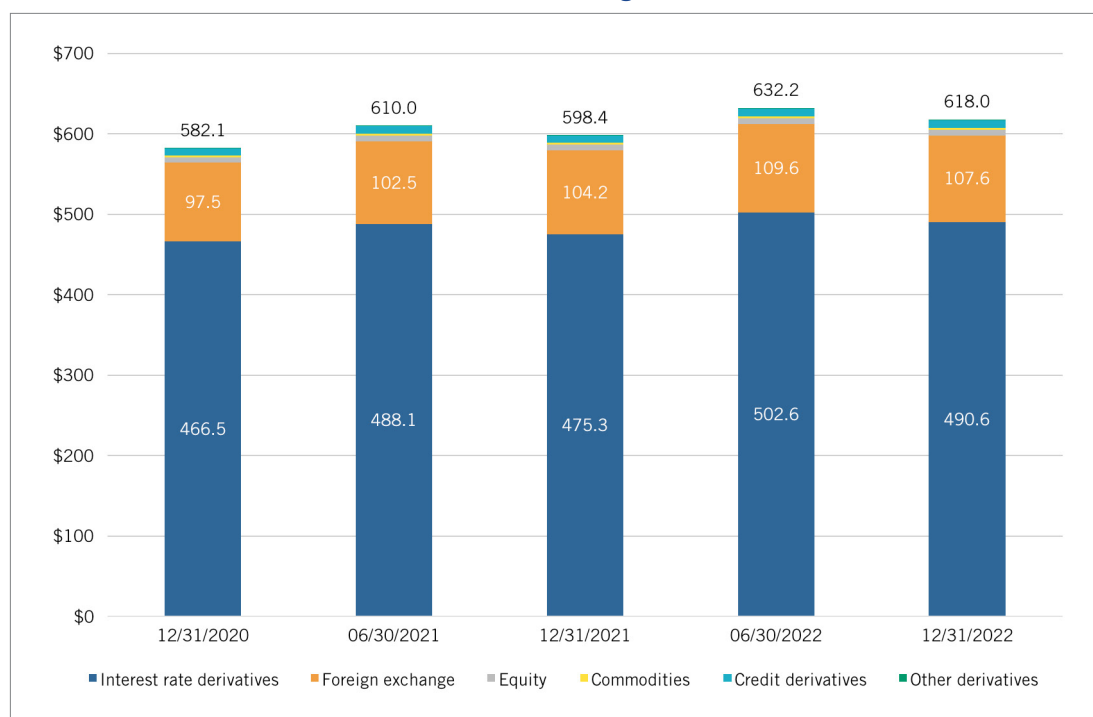
Initial margin (IM) and variation margin (VM) collected by leading derivatives market participants subject to margin requirements for non-cleared derivatives totaled \$1.4 trillion at year-end 2022 versus \$1.3 trillion at the end of 2021. Market participants also posted \$384.4 billion of IM for cleared IRD and credit default swaps (CDS) transactions at all major central counterparties (CCPs) at year-end 2022.

## KEY TRENDS

Global OTC derivatives notional outstanding totaled \$618.0 trillion at the end of December 2022, 3.3% higher compared to year-end 2021 and 2.3% lower versus mid-year 2022<sup>1</sup> (see Chart 1). Some of this change reflects a seasonal pattern, under which notional outstanding tends to increase in the first half of the year and decrease in the second half.

IRD notional outstanding rose by 3.2% to \$490.6 trillion at year-end 2022 compared to \$475.3 trillion at year-end 2021, and notional outstanding in foreign exchange (FX) derivatives grew by 3.2% to \$107.6 trillion over the same period. Credit, equity and commodity derivatives notional outstanding totaled \$9.9 trillion, \$6.9 trillion and \$2.3 trillion, respectively.

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



Source: BIS OTC Derivatives Statistics

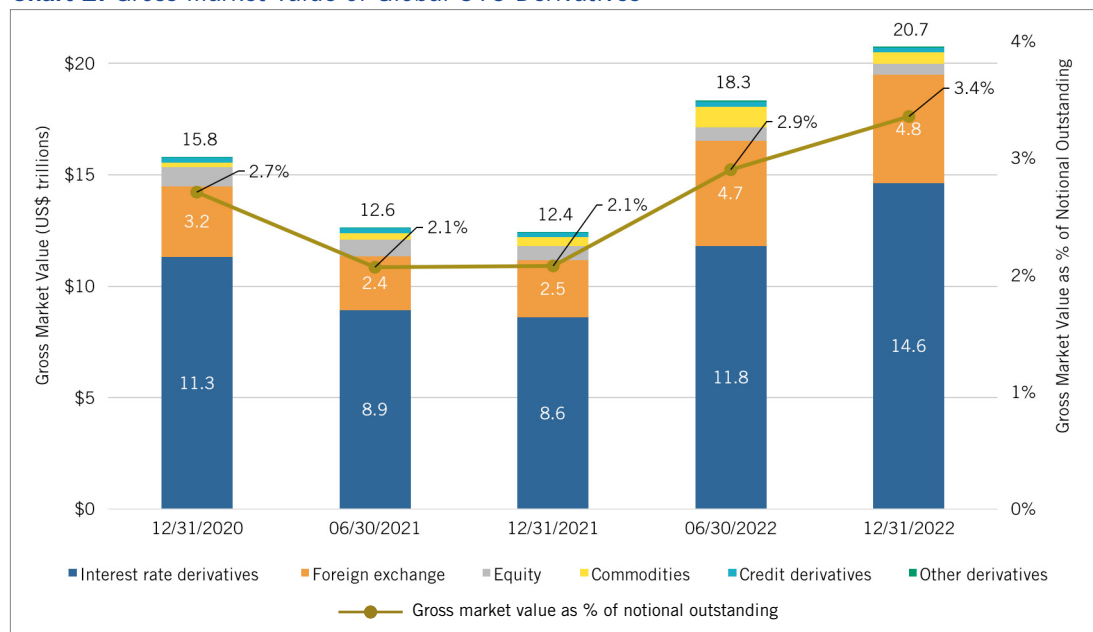
The gross market value of OTC derivatives grew by 66.8% to \$20.7 trillion at year-end 2022 versus the end of 2021<sup>2</sup>. The growth was driven by higher IRD market value due to increases in interest rates for key currencies in 2022. Gross market value equaled 3.4% of notional outstanding at year-end 2022 compared to 2.1% at year-end 2021 (see Chart 2).

Gross market value of IRD rose by 69.9% to \$14.6 trillion at the end of 2022 versus \$8.6 trillion at year-end 2021. Gross market value of FX derivatives nearly doubled, rising by 90.2% to \$4.8 trillion from \$2.5 trillion over the same period.

<sup>1</sup> BIS OTC Derivatives Statistics [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm)

<sup>2</sup> 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](#)

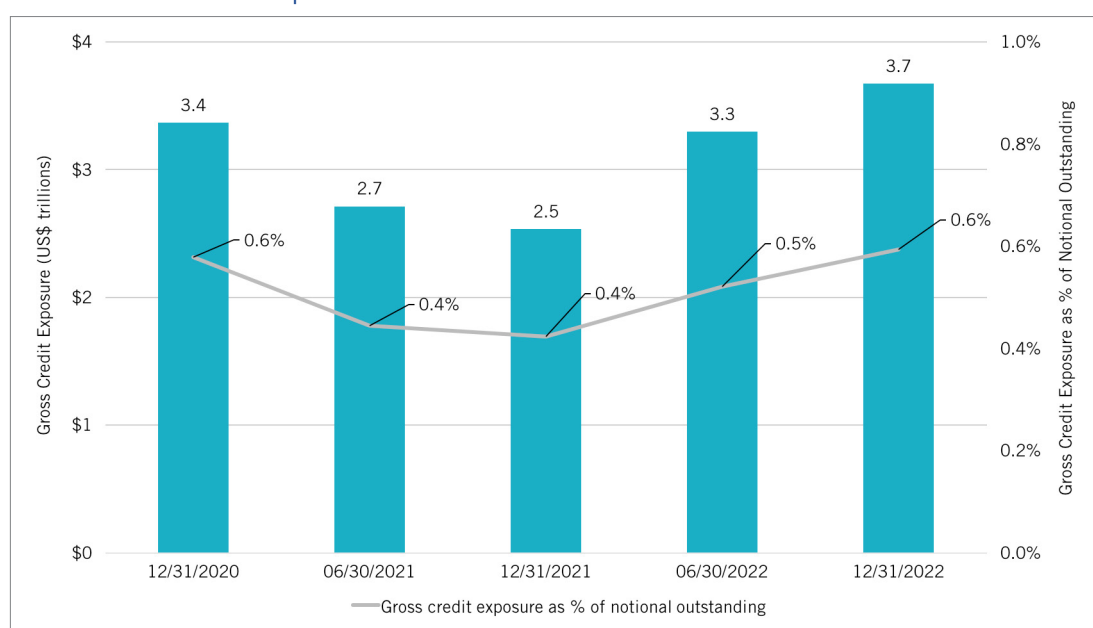
**Chart 2: Gross Market Value of Global OTC Derivatives**



Source: BIS OTC Derivatives Statistics

Gross credit exposure of OTC derivatives, which is a more accurate measure of counterparty credit risk, increased by 44.9% at year-end 2022 compared to year-end 2021 (see Chart 3). It totaled \$3.7 trillion and accounted for 0.6% of notional outstanding at year-end 2022<sup>3</sup>.

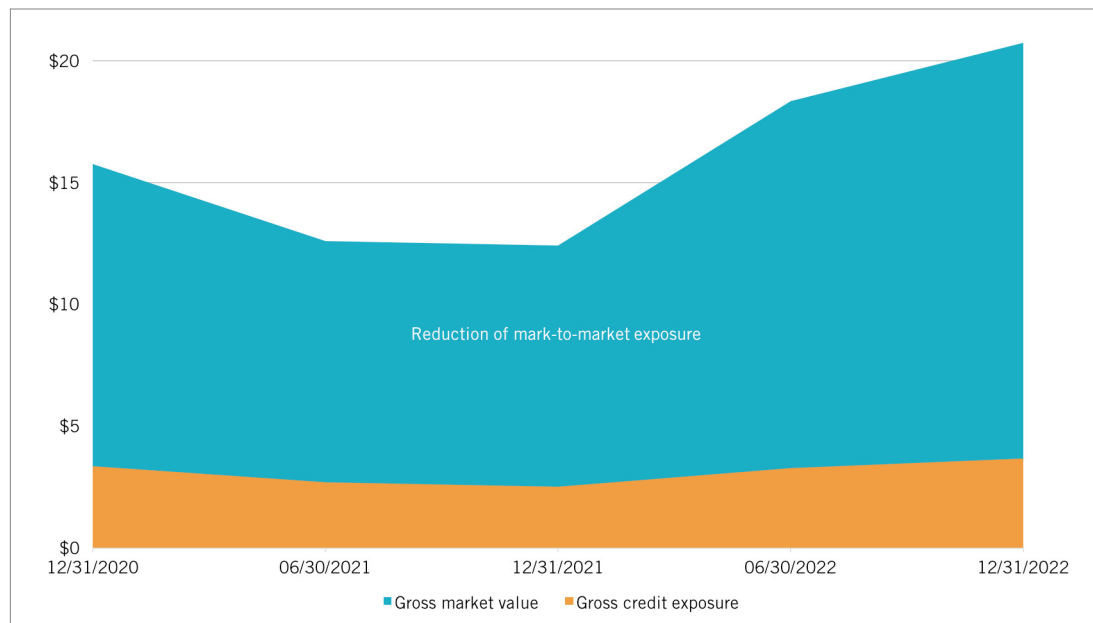
**Chart 3: Gross Credit Exposure of Global OTC Derivatives**



Source: BIS OTC Derivatives Statistics

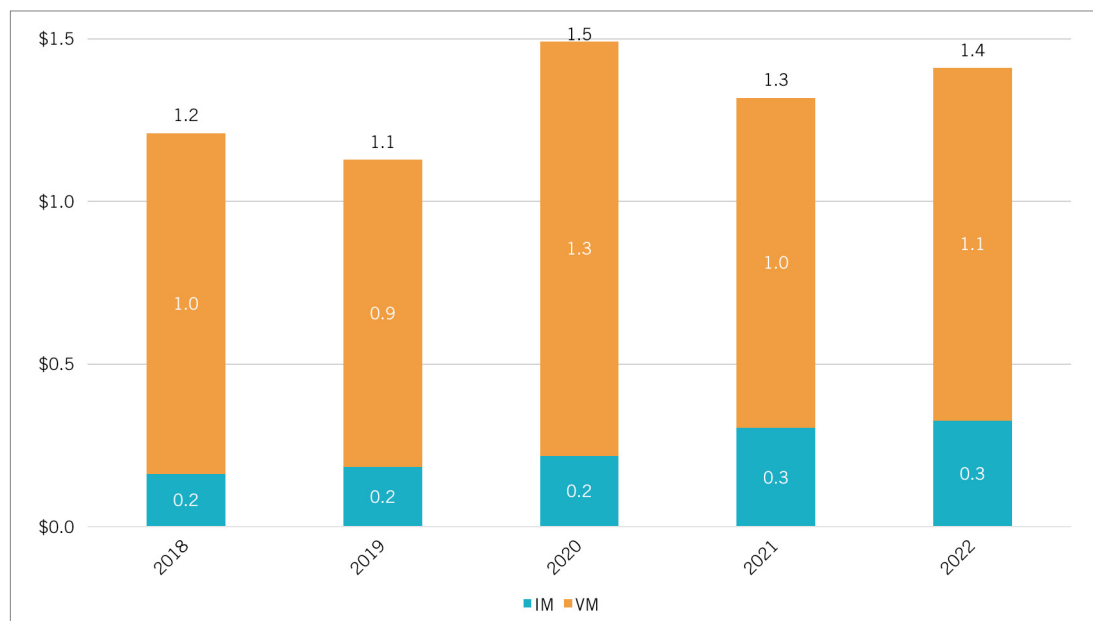
Market participants reduced their mark-to-market exposure by 82.3% at year-end 2022 due to close-out netting (see Chart 4). Credit exposure is further reduced by the collateral that market participants post for cleared and non-cleared derivatives transactions.

<sup>3</sup> Gross credit exposure adjusts gross market value for legally enforceable netting agreements, but not for collateral. See [BIS Glossary](#)

**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 2022 versus \$1.3 trillion the year before. This included \$325.7 billion of IM and \$1.1 trillion of VM. In comparison, IM and VM collected at year-end 2021 totaled \$304.1 billion and \$1.0 trillion, respectively<sup>4</sup> (see Chart 5).

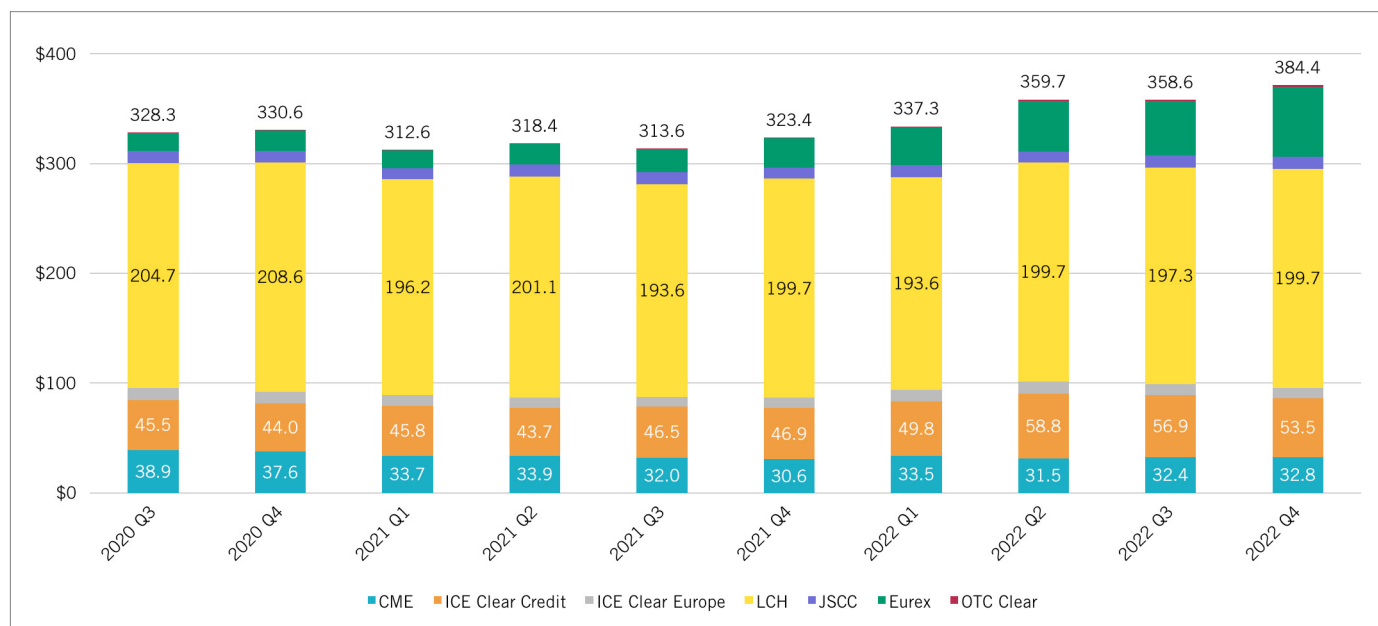
**Chart 5:** IM and VM Received by Phase-one, Phase-two and Phase-three Firms<sup>5</sup> (US\$ trillions)

Source: ISDA Margin Survey

<sup>4</sup> ISDA Margin Survey Year-End 2022 [www.isda.org/a/qwLgE/ISDA-Margin-Survey-Year-End-2022.pdf](https://www.isda.org/a/qwLgE/ISDA-Margin-Survey-Year-End-2022.pdf)<sup>5</sup> This includes 32 financial institutions that participated in ISDA Margin Survey in 2022

Market participants also posted \$384.4 billion of IM for cleared IRD and CDS at all major CCPs in the fourth quarter of 2022<sup>6,7</sup>. This represents an 18.8% increase compared to \$323.4 billion in the fourth quarter of 2021 (see Chart 6).

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



Source: CCP disclosures

<sup>6</sup> All numbers are converted to US dollars based on the exchange rates at the end of each quarter [www.x-rates.com/historical](http://www.x-rates.com/historical)

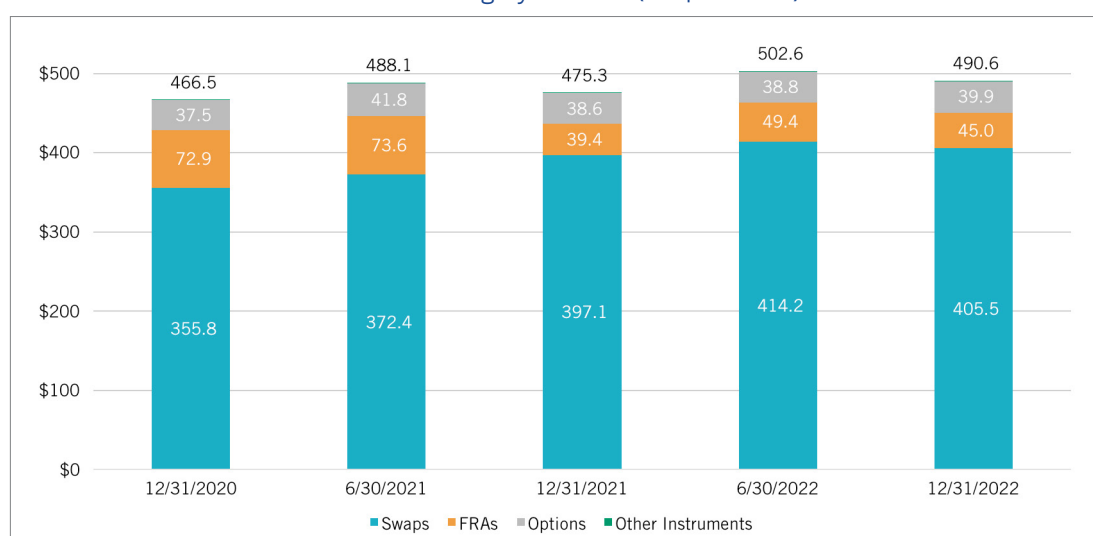
<sup>7</sup> LCH includes LCH Ltd and LCH SA

## INTEREST RATE DERIVATIVES

IRD notional outstanding totaled \$490.6 trillion and accounted for 79.4% of global OTC derivatives notional outstanding at year-end 2022. IRD notional outstanding grew by 3.2% versus year-end 2021 and fell by 2.4% compared to mid-year 2022 (see Chart 1).

Interest rate swaps (IRS) notional outstanding increased by 2.1% to \$405.5 trillion and accounted for 82.7% of total IRD notional outstanding at year-end 2022. Forward rate agreement (FRA) notional outstanding rose by 14.0% to \$45.0 trillion and options notional outstanding was \$39.9 trillion (see Chart 7).

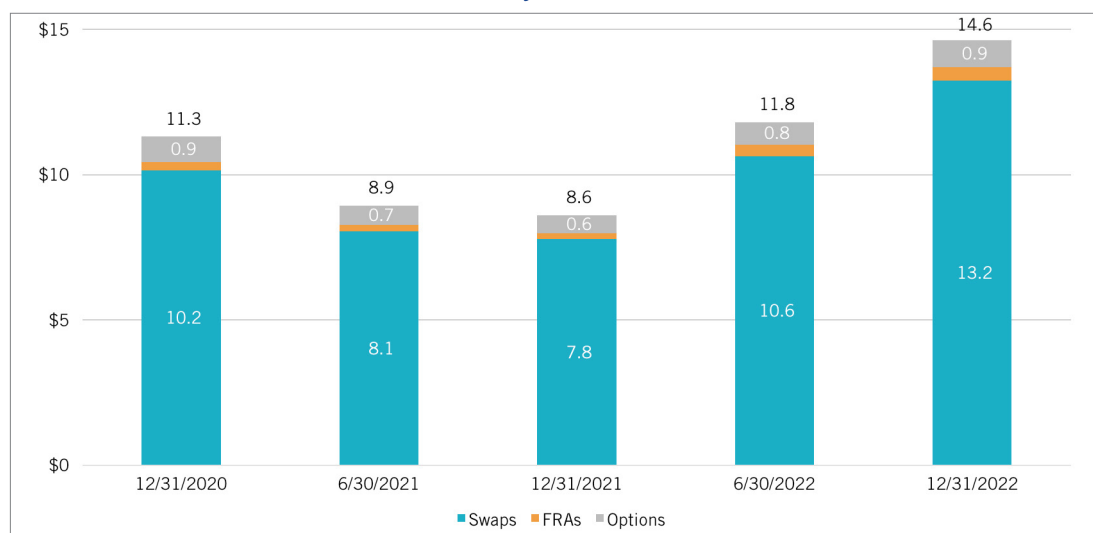
**Chart 7:** Global IRD Notional Outstanding by Product (US\$ trillions)



Source: BIS OTC Derivatives Statistics

Gross market value of IRD rose by 69.9% to \$14.6 trillion at year-end 2022 compared to \$8.6 trillion at year-end 2021. IRS gross market value increased to \$13.2 trillion at year-end 2022, up by 70.2% compared to \$7.8 trillion at the end of 2021. FRA and options gross market value grew by 138.2% and 46.0%, respectively (see Chart 8).

**Chart 8:** Gross Market Value of Global IRD by Product (US\$ trillions)



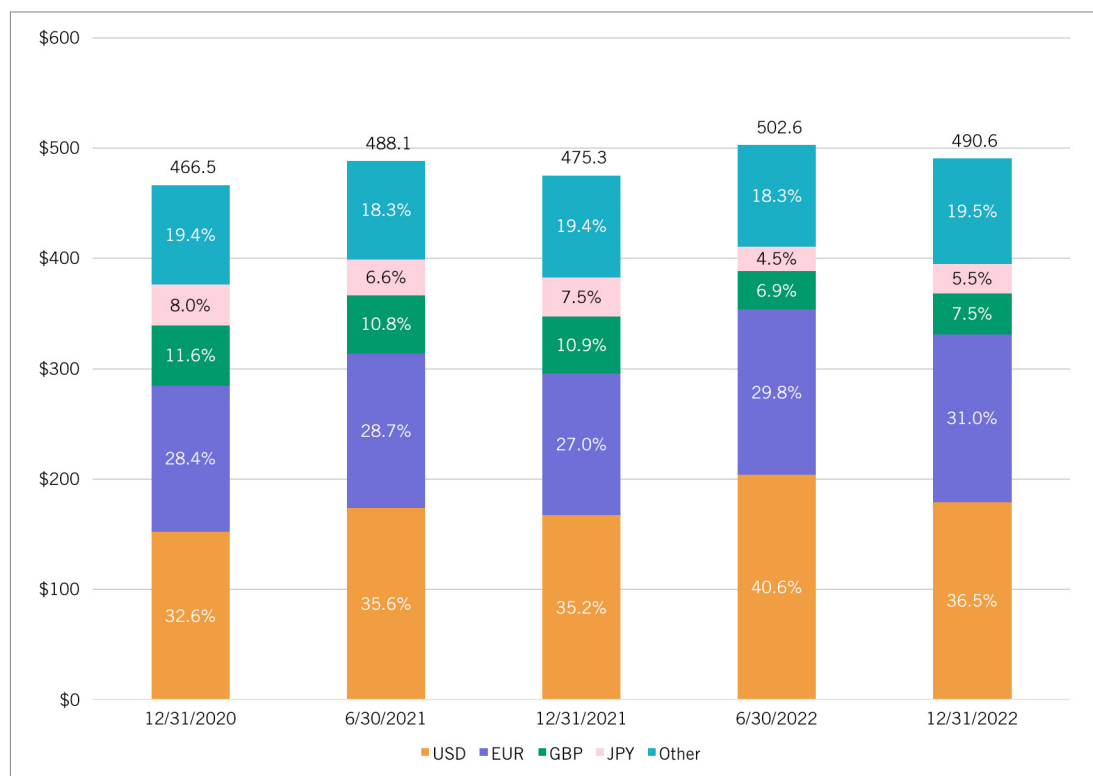
Source: BIS OTC Derivatives Statistics

US dollar-denominated IRD notional outstanding totaled \$179.2 trillion at year-end 2022, up by 7.1% versus year-end 2021. US dollar trades accounted for 36.5% of total IRD notional outstanding compared to 35.2% at the end of 2021 (see Chart 9).

Euro-denominated IRD notional outstanding was \$152.0 trillion at the end of 2022, up by 18.4% versus year-end 2021. Euro-denominated transactions comprised 31.0% of total IRD notional outstanding at year-end 2022 versus 27.0% the year before.

Sterling-denominated IRD notional outstanding was \$36.7 trillion at year-end 2022, down by 28.8% compared to year-end 2021. Sterling made up 7.5% of total notional outstanding at year-end 2022 versus 10.9% at the end of 2021.

**Chart 9: Global IRD Notional Outstanding by Currencies (US\$ trillions)**



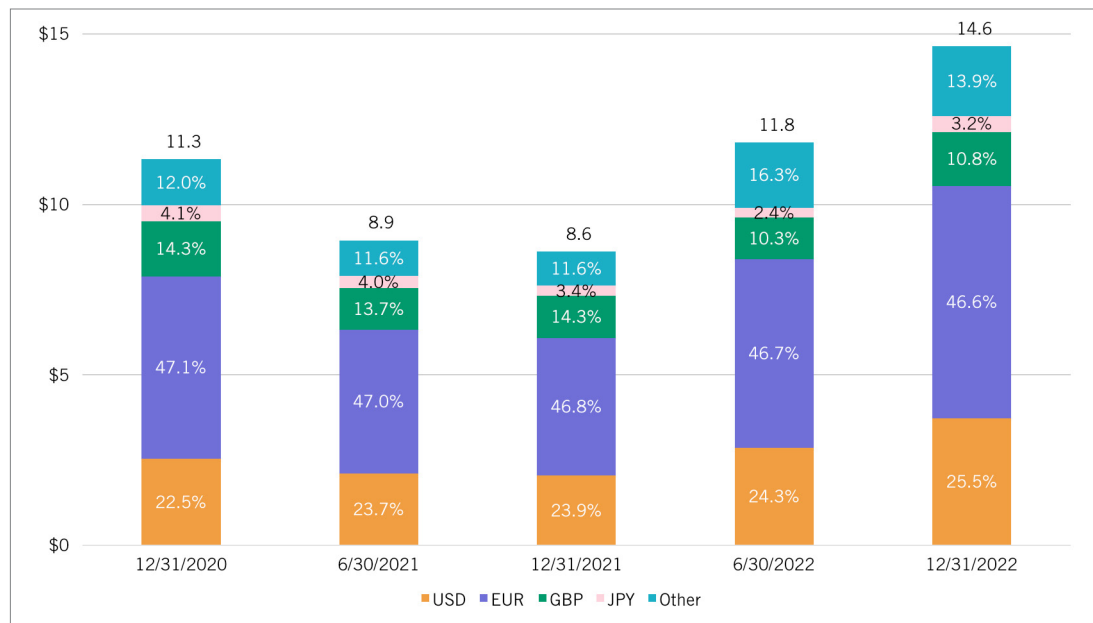
Source: BIS OTC Derivatives Statistics

US dollar-denominated IRD gross market value was \$3.7 trillion at year-end 2022, up by 81.7% compared to the end of 2021. US dollar comprised 25.5% of total IRD gross market value at year-end 2022 versus 23.9% the year before (see Chart 10).

Euro-denominated IRD gross market value totaled \$6.8 trillion at year-end 2022, up by 69.2% from year-end 2021. Euro accounted for 46.6% of total gross market value compared to 46.8% at year-end 2021.

Sterling-denominated IRD gross market value was \$1.6 trillion at year-end 2022, up by 27.8% the year before. Sterling made up 10.8% of total gross market value at year-end 2022 versus 14.3% at year-end 2021.

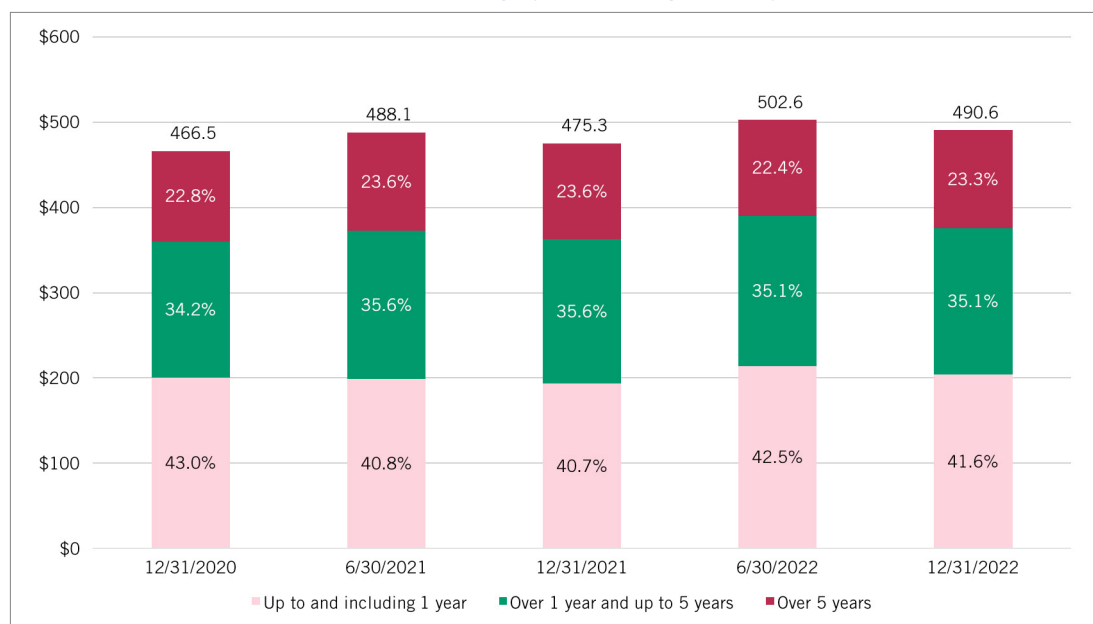
**Chart 10:** Global IRD Gross Market Value by Currency (US\$ trillions)



Source: BIS OTC Derivatives Statistics

IRD contracts with a remaining maturity up to and including one year totaled \$203.9 trillion and accounted for 41.6% of global IRD notional outstanding at year-end 2022 (see Chart 11). IRD notional outstanding with a remaining maturity over one year and up to five years was \$172.1 trillion (35.1% of total IRD notional outstanding) and contracts with a remaining maturity over five years totaled \$114.4 trillion (23.3% of total IRD notional outstanding).

**Chart 11:** Global IRD Notional Outstanding by Remaining Maturity (US\$ trillions)

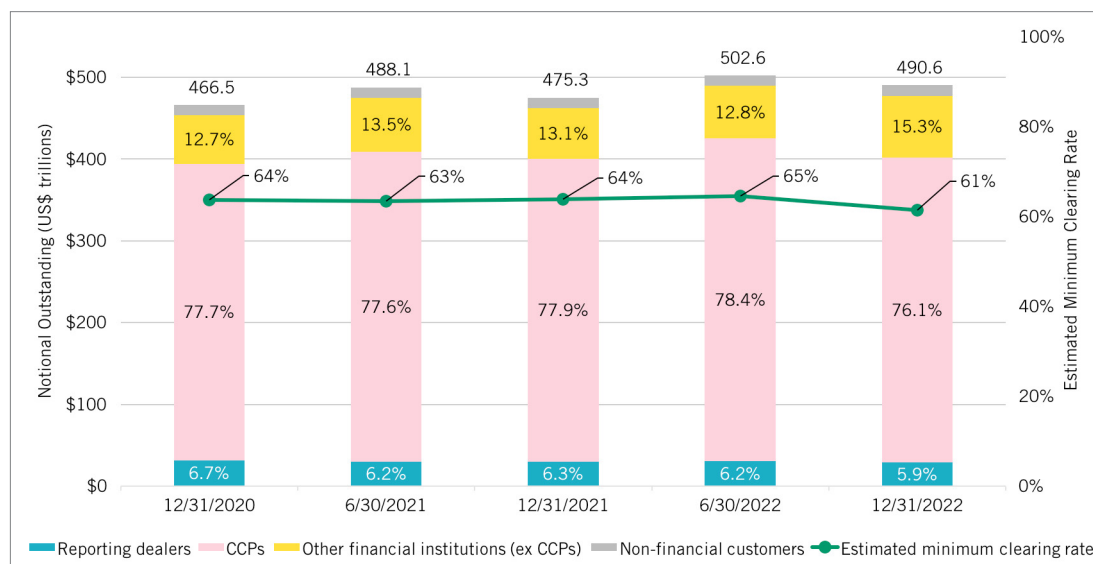


Source: BIS OTC Derivatives Statistics



IRD notional cleared by CCPs totaled \$373.4 trillion in the second half of 2022, equating to 76.1% of total IRD notional outstanding. The estimated minimum clearing rate for IRD was 61.4% at year-end 2022<sup>8</sup> (see Chart 12).

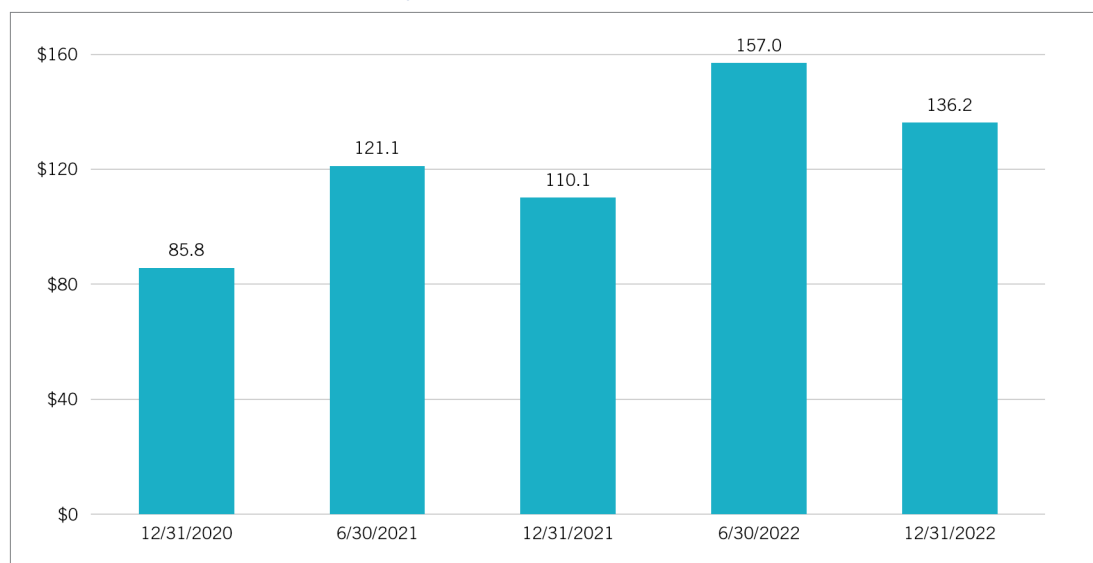
**Chart 12: Global IRD Notional Outstanding by Counterparties (US\$ trillions)**



Source: BIS OTC Derivatives Statistics

ISDA SwapsInfo data shows that trading in IRD products reported in the US increased by 23.7% during the second half of 2022 compared to the prior year<sup>9</sup>. IRD traded notional totaled \$136.2 trillion in the second half of 2022 versus \$110.1 trillion in the second half of 2021 (see Chart 13).

**Chart 13: IRD Traded Notional Reported in the US (US\$ trillions)**



Source: DTCC SDR

<sup>8</sup> 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

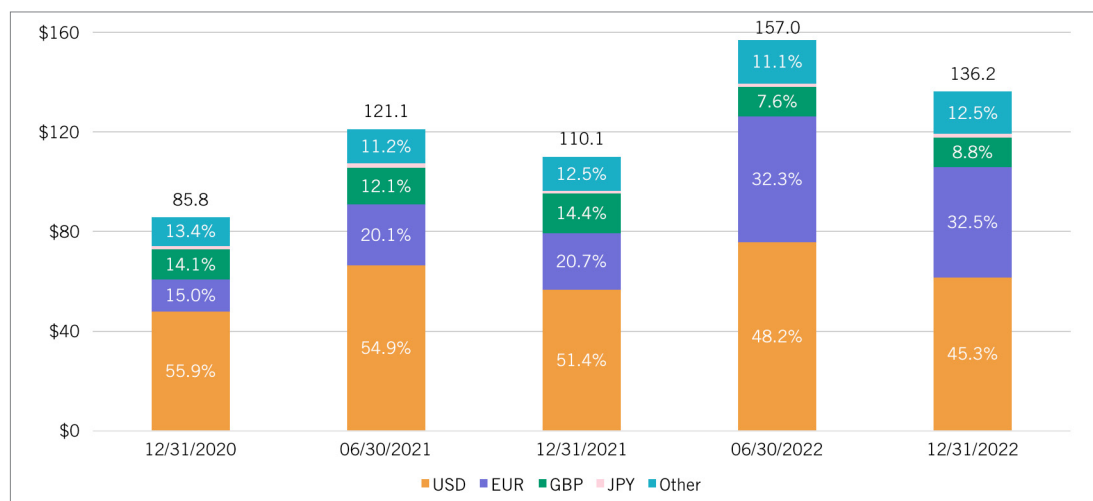
<sup>9</sup> Based on data from the Depository Trust and Clearing Corporation (DTCC) swap data repository (SDR). This data covers only transactions required to be disclosed under US Commodity Futures Trading Commission (CFTC) regulations. See ISDA SwapsInfo website [www.swapsinfo.org/](http://www.swapsinfo.org/)

US dollar-denominated IRD traded notional reported in the US totaled \$61.7 trillion in the second half of 2022, up by 8.9% compared to the second half of 2021. US dollar transactions represented 45.3% of total IRD traded notional in the second half of 2022 versus 51.4% in the second half of 2021 (see Chart 14).

Euro-denominated IRD traded notional totaled \$44.2 trillion in the second half of 2022, a rise of 93.7% compared to the second half of 2021. Euro-denominated trades made up 32.5% of total IRD traded notional in the second half of 2022, up from 20.7% in the second half of 2021.

Sterling-denominated IRD traded notional reported in the US totaled \$12.0 trillion in the second half of 2022, down by 24.2% versus the second half of 2021. Sterling accounted for 8.8% of total IRD traded notional in the second half of 2022 compared to 14.4% in the second half of 2021.

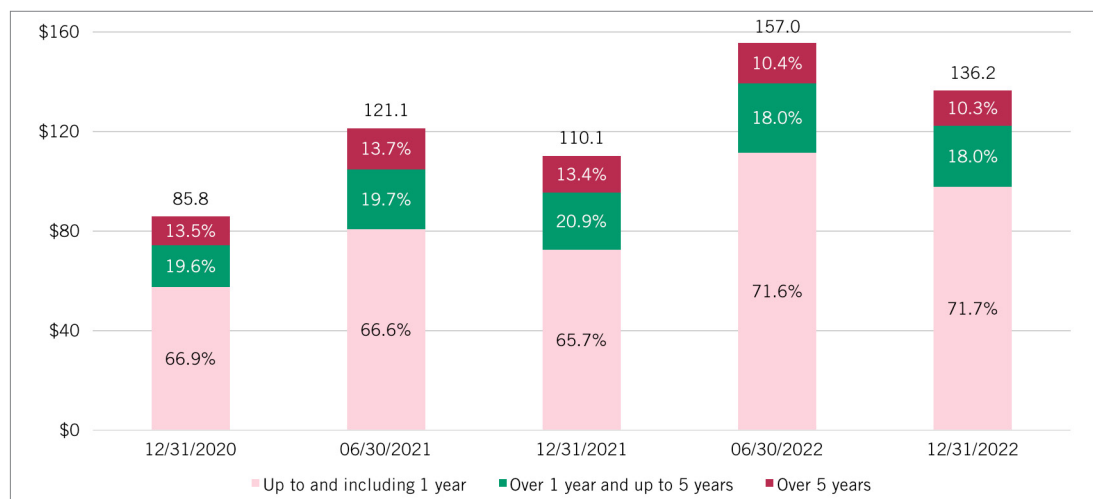
**Chart 14: IRD Traded Notional Reported in the US by Currency (US\$ trillions)**



Source: DTCC SDR

IRD trading in contracts with a tenor up to and including one year was 71.7% of total IRD traded notional in the second half of 2022 compared to 65.7% in the second half of 2021<sup>10</sup>. Contracts with a tenor over one year and up to five years accounted for 18.0% of total IRD traded notional, and contracts with a tenor over five years totaled 10.3% (see Chart 15).

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

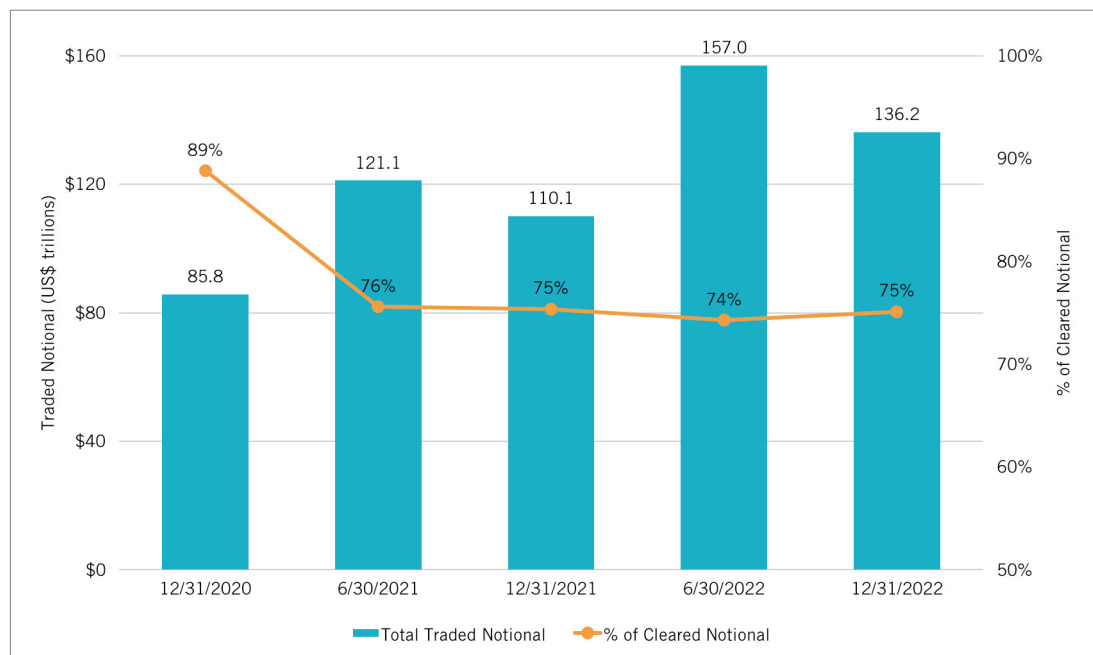


Source: DTCC SDR

<sup>10</sup> Tenor is calculated as the difference between the effective date and the end date

US-reported cleared IRD transactions comprised 75.1% of total IRD traded notional in the second half of 2022<sup>11</sup> (see Chart 16).

**Chart 16:** Percentage of IRD Cleared Notional Reported in the US



Source: DTCC SDR

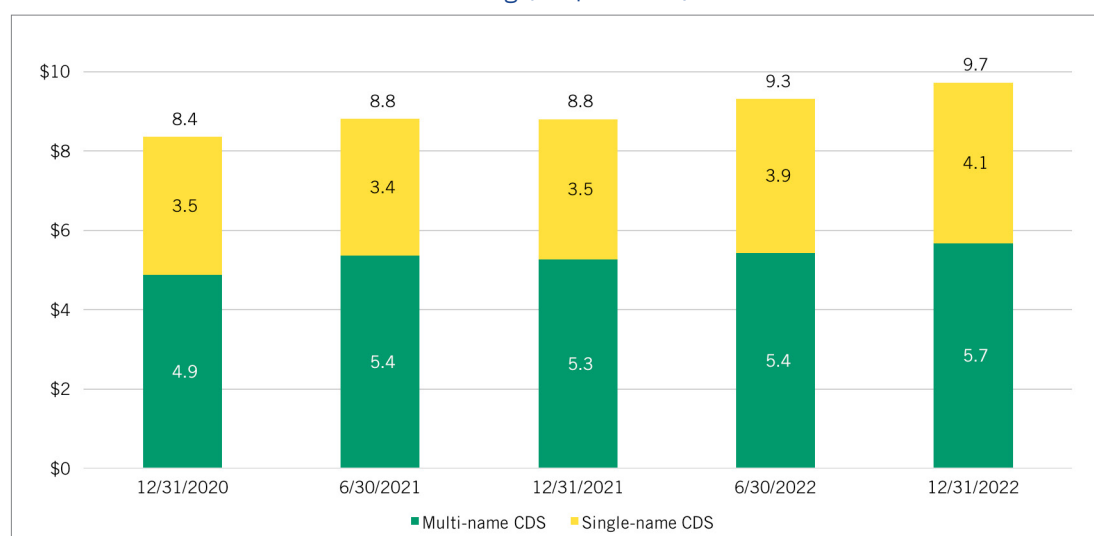
<sup>11</sup> The DTCC SDR completed a planned system upgrade on November 21, 2020, which changed the reporting logic for the status of cleared trades. Following the upgrade, the percentage of IRD cleared trades appears to be lower compared to historical averages, as firms switched to the new reporting logic

## CREDIT DERIVATIVES

According to the BIS data, CDS notional outstanding (including single name and index CDS) grew by 10.6% to \$9.7 trillion at year-end 2022 versus year-end 2021 and was up by 4.4% compared to mid-year 2022 (see Chart 17).

Single-name CDS notional outstanding rose by 14.8% to \$4.1 trillion at year-end 2022 compared to \$3.5 trillion at year-end 2021, while multiple-name CDS notional increased by 7.7% to \$5.7 trillion.

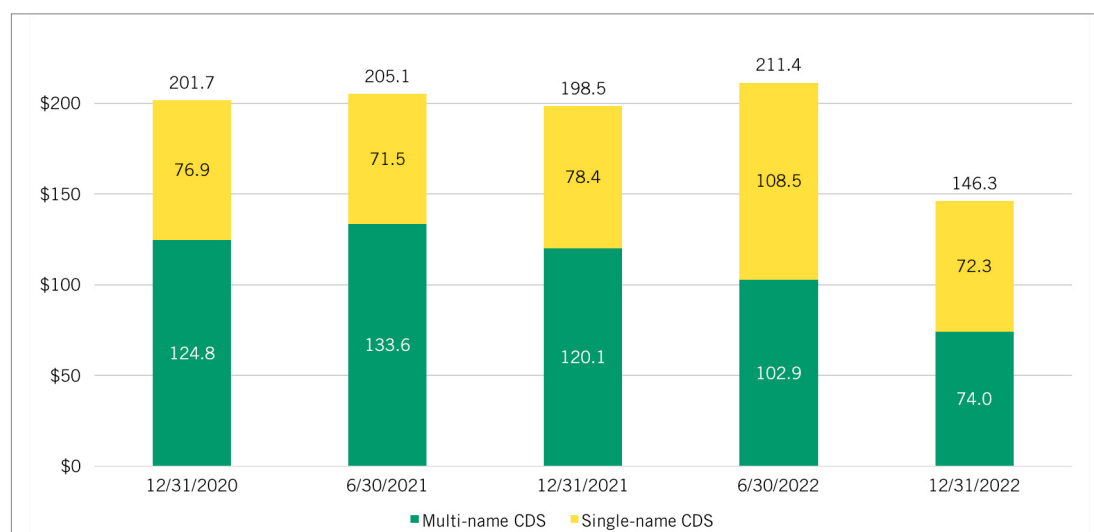
**Chart 17:** Global CDS Notional Outstanding (US\$ trillions)



Source: BIS OTC Derivatives Statistics

The gross market value of CDS fell by 26.3% to \$146.3 billion at year-end 2022 from \$198.5 billion the year before (see Chart 18). Single-name CDS gross market value dropped by 7.8% to \$72.3 billion at year-end 2022 compared to \$78.4 billion at the end of 2021. Multiple-name CDS gross market value declined by 38.4% to \$74.0 billion at year-end 2022 compared to \$120.1 billion at year-end 2021.

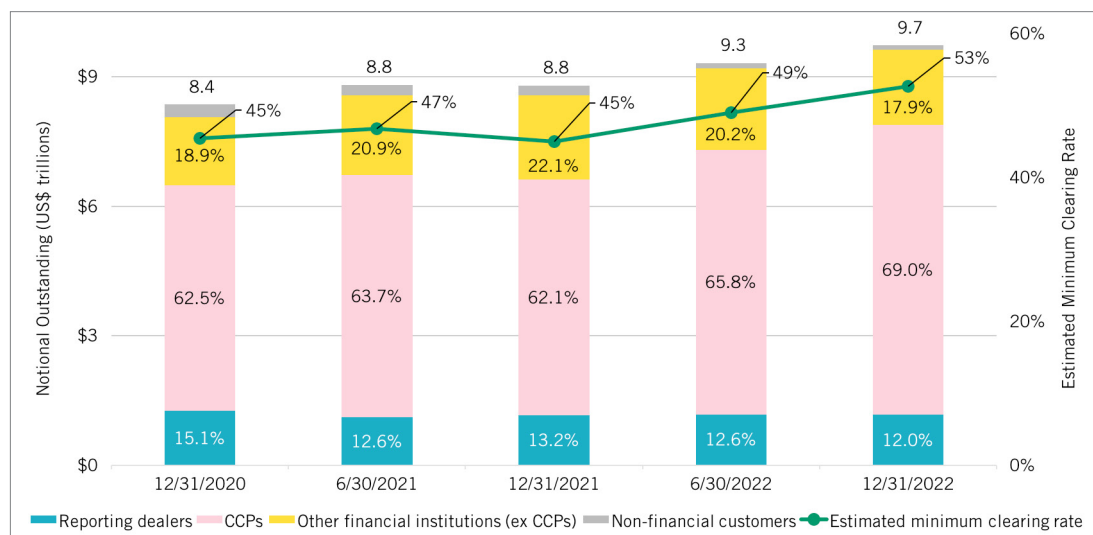
**Chart 18:** Global CDS Gross Market Value (US\$ billions)



Source: BIS OTC Derivatives Statistics

The share of CDS notional outstanding cleared by CCPs was 69.0%, equating to \$6.7 trillion in the second half of 2022. The estimated minimum clearing rate for CDS contracts increased to 52.7% in the second half of 2022 compared to 45.0% in the second half of 2021<sup>12</sup> (Chart 19).

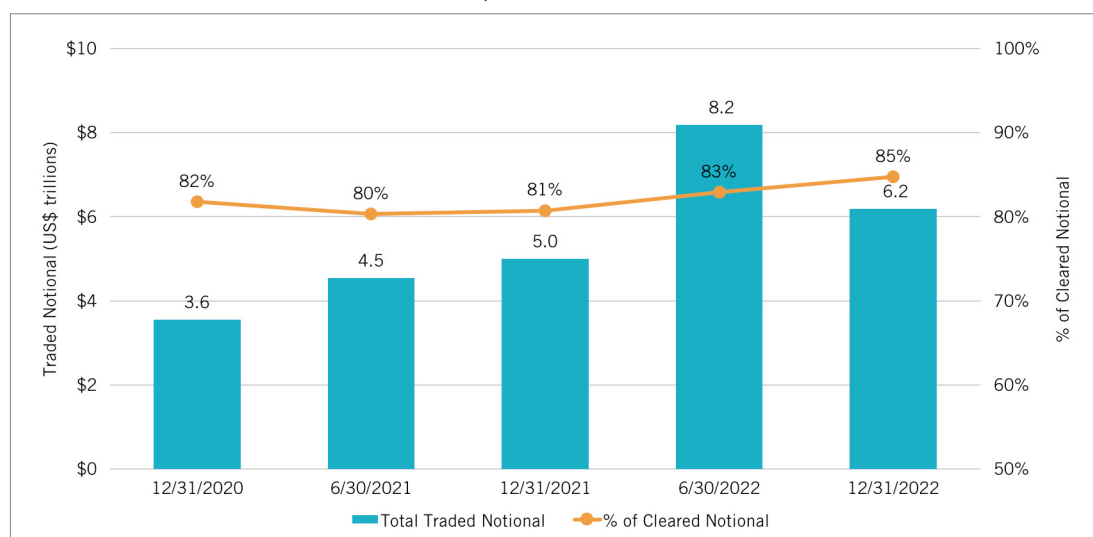
**Chart 19: Global CDS Notional Outstanding by Counterparties (US\$ trillions)**



Source: BIS OTC Derivatives Statistics

Index CDS traded notional reported in the US rose by 23.9% in the second half of 2022 compared to the second half of 2021<sup>13</sup>. US-reported CDS traded notional was \$6.2 trillion in the second half of 2022 compared to \$5.0 trillion the year before. Cleared index credit derivatives transactions comprised 84.7% of credit derivatives traded notional in the second half of 2022 compared to 80.7% in the second half of 2021 (see Chart 20).

**Chart 20: Index CDS Traded Notional Reported in the US (US\$ trillions)**



Source: DTCC SDR

<sup>12</sup> 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

<sup>13</sup> Based on the data from the DTCC SDR. This data covers only transactions required to be disclosed under CFTC regulations. 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



ISDA has published other recent research papers:

- ***ISDA-Clarus RFR Adoption Indicator: May 2023***

[www.isda.org/a/9NXgE/ISDA-Clarus-RFR-Adoption-Indicator-May-2023.pdf](http://www.isda.org/a/9NXgE/ISDA-Clarus-RFR-Adoption-Indicator-May-2023.pdf)

- ***ISDA Margin Survey Year-end 2022***

[www.isda.org/a/qwLgE/ISDA-Margin-Survey-Year-End-2022.pdf](http://www.isda.org/a/qwLgE/ISDA-Margin-Survey-Year-End-2022.pdf)

- ***Single-name CDS Market Update***

[www.isda.org/a/OjLgE/Single-name-CDS-Market-Update.pdf](http://www.isda.org/a/OjLgE/Single-name-CDS-Market-Update.pdf)

**For questions on ISDA Research, please contact:**

Olga Roman

Head of Research

International Swaps and Derivatives Association, Inc. (ISDA)

Office: 212-901-6017

[oroman@isda.org](mailto:oroman@isda.org)

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## ABOUT ISDA

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 1,000 member institutions from 78 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 website: [www.isda.org](http://www.isda.org). Follow us on [Twitter](#), [LinkedIn](#), [Facebook](#) and [YouTube](#).