

PUBLIC QUANTITATIVE DISCLOSURE

PQD QUARTERLY TRENDS REPORT

2023 Q2 DATA





Contents

CCP PQDs	3	Global CCP Initial Margin (Held) Cash	16
Commentary For The Quarter	4	Global CCP Default Fund (Held) Cash	17
Headline Statistics Of The Public Quantitative Disclosures	5	Global CCP Initial Margin (Held) Non-Cash	18
Collateral View	6	Global CCP Default Fund (Held) Non-Cash	19
PQD Statistics Key	9	Selected CCPs – IM (Required) for Exchange Traded Derivatives	20
Global CCP Initial Margin & Default Fund (Required)	10	Results Of Backtesting IM – Achieved Coverage Level (ACL)	21
Global CCP Initial Margin & Default Fund (Held)	11	Global CCP Core System Availability & Target Recovery Time	22
Global IM Breakdown (House vs. Client) (Required)	12	CCP Global Member List	23
Global CCP Overcollateralization (IM & DF)	13	About CCP Global	24
Global CCP Overcollateralization (Total)	14	Contacts	25
Global CCP Variation Margin	15	CCP Global Members	26



CCP PQDs

The CCP Global PQD Quarterly Trends Report provides an overview of the risk management provided by CCPs across the globe. It complements existing public statistics, such as the BIS derivatives statistics, by providing a summary of key indicators which provides market participants an overview of the CCP ecosystem. The publication underlines the scope and scale of risk mitigation provided by central clearing:

- CCPs exposure to credit risk is collateralized through high-quality and liquid collateral;
- CCPs risk-manage their clearing exposure by collecting mark-to-market losses through regular variation margin (or similar) payments.

This CCP Global PQD Quarterly Trends Report helps to inform market participants, authorities, and the general public of key features, the scale and nature of financial market infrastructure risk management. The data is aggregated directly from the CCPs themselves according to the CCP Global standardized template, carrying information stipulated in global regulatory guidance. Further details for individual CCPs can be found in links provided on the <u>CCP Global website</u> and page 23 of this report.

PQD UPDATES FOR 2023 Q2

- The Global Association of Central Counterparties adopts its new name and branding from "CCP12" to "CCP Global" as of 21st August 2023. The rebranding signifies the association's enduring commitment to advancing collaboration and innovation among central counterparties globally.
- KELER CCP's POD has been included for 2023 O2

KEY STATISTICS FOR 2023 Q2 (USD)*

56 CCPs across Americas (17), APAC (22), and EMEA (17). Equivalent to 34 CCP Global members included in this quarter's collation[†]:

6.1.1 GLOBAL IM (REQUIRED)

1,214B

↓ -3.8%

6.2.15 GLOBAL IM (HELD)

1,649B

J -3.8%

4.1.4 GLOBAL DF (REQUIRED)

142B

↑ 7.4%

4.3.15 GLOBAL DF (HELD)

165B

18.4%

6.6.1 GLOBAL VM FLOW

35B

↓ -16.0%

TOTAL (IM & DF) GLOBAL OVERCOLLATERALIZATION[†]

453B

↓ -3.8%

% change from the previous quarter

For any questions, please get in touch: question.pqd@ccp-global.org

*Data has been normalized to USD equivalent, based on a conversation from quarter-end FX rates provided by the <u>ECB</u>. All figures have been rounded up to the nearest billion in charts and tables.

*Euronext Clearing (CC&G), and NCC PQD figures are incorporated as non-CCP Global members. Euronext Clearing (CC&G), NCC, NSE: 2023Q1 PQD figures were used in this report since these PQDs were not released as of the QTR release, with the exception. CCIL require regulatory approval of their PQD figures due to local regulations.

 $^{\pm}$ Total OC = $(IM_{Held} + DF_{Held}) - (IM_{Required} + DF_{Required})$ = Disclosures (6.2.15 + 4.3.15) - (6.1.1 + 4.1.4). Only PostHaircut values are used for Held values.

Sep-23 CCPG PQD QUARTERLY TRENDS – 2023 Q2



Commentary for the quarter: 2023 Q2

Below are a few key market developments which took place in the second quarter of 2023:

- 2023 Q2 was a period of enthusiasm over Artificial Intelligence where technology stocks saw rallies. Global shares saw gains in the quarter with the advance led by developed markets.
- Market participants were generally on alert for an expected recession and were of the view that the U.S. Federal Reserve (Fed) could potentially cut rates, or at least leave them unchanged. At the end of 2023, an economic downturn remained elusive, inflation remained persistent, and the Fed was expected to keep rates higher for a longer period.¹
- In May 2023, the Fed raised their interest rates by 25 basis points (bps) to 5.125%. The European Central Bank (ECB) raised interest rates twice in 2023 Q2, taking the rate up to 4.0%. The Bank of England (BoE) raised rates twice in May and June to 4.5% and 5.0%, respectively. The Bank of Japan (BoJ) held the first policy meeting under their new governor in April and the second in June while interest rates were kept fixed at -0.1%.²
- Core inflation has remained persistent albeit with marginal falls as data shows from Organisation for Economic Co-operation and Development (OECD). Policy makers have had to act decisively on macroeconomic and structural policy in order to deliver stronger and more sustainable growth.3
- For 2023 Q2 the global equity markets typically delivered positive returns. The FTSE All-World Index went up by 3.2%. Equity markets in Japan and the US did best over the period. The UK remained stagnant with the FTSE 100 Index falling by 0.3%. While the within the EU, the Eurostoxx 50 and 600 indices reached were up 1.95% and 0.89% for the quarter, respectively.⁴
- Total global volumes of ETD contracts reached 8 billion in April, 10.21 billion in May and 10.04 billion in June. Options volumes reached 5.99, 7.70 and 7.57 billion contracts, for the same months within the quarter, while futures volumes reached 2.01, 2.51 and 2.47 billion. April to June 2023 saw the largest increase for the quarter with a 28.53% increase in options contracts and 25.04% increase in futures contracts.

https://www.morningstar.com/markets/q2-2023-review-market-outlookhttps://www.bis.org/statistics/cbpol.htm

https://www.oecd-ilibrary.org/sites/ce188438-en/index.html?itemId=/content/publication/ce188438-en/index.htm

Eurostoxx 50, Eurostoxx 600

⁵ FIA ETD Volumes Data



Headline Statistics of the Public Quantitative Disclosures

2023 Q2

Global CCP Margin* (USD B)		
Global Initial Margin & Default Fund (Required):		
Total Global IM Required (6.1.1)	1,214	
Total Global DF Required (4.1.4)	142	
Total Global CCP Collateral Required (6.1.1 + 4.1.4)	1,357	
Global IM & DF Held (PostHaircut):		
Total Global IM Held (PostHaircut) (6.2.15)	1,649	
Total Global DF Held (PostHaircut) (4.3.15)	165	
Total Global CCP Collateral Held (PostHaircut) (6.2.15 + 4.3.15)	1,814	
Global Variation Margin (VM)		
Sum of Total Global Average Daily VM Paid to the CCP by participants		
each business day (6.6.1)	35	
Global Overcollateralization (OC)†		
Total Global IM Overcollateralization	429	
Total Global DF Overcollateralization	23	
Total Global Overcollateralization	453	

Total Global CCP Collateral (Held) (PostHaircut) in form of*:

Cash At Central Bank Secured Cash (incl. Reverse Repos) at Commercial Banks Unsecured Cash at Commercial Banks	Disclosure (6.2.1 + 6.2.2) 6.2.3 6.2.4	Initial Margin 16.0% 9.3% 3.9%	Disclosure (4.3.1 + 4.3.2) 4.3.3 4.3.4	Default Fund 45.0% 8.9% 5.3%
Non-Cash				
Sovereign Gov Bonds - Domestic	6.2.5	26.7%	4.3.5	34.1%
Sovereign Gov Bonds – Foreign	6.2.6	18.4%	4.3.6	1.9%
Agency Bonds	6.2.7	1.0%	4.3.7	2.8%
State/Municipal Bonds	6.2.8	1.1%	4.3.8	0.2%
Corporate Bonds	6.2.9	5.5%	4.3.9	1.2%
Equities	6.2.10	4.3%	4.3.10	0.2%
Commodities – Gold	6.2.11	0.2%	4.3.11	0.0%
Commodities – Other	6.2.12	0.0%	4.3.12	0.0%
Mutual Funds/UCITs	6.2.13	0.3%	4.3.13	0.0%
Other	6.2.14	2.6%	4.3.14	0.3%

^{*}Figures have been rounded to the nearest whole number, therefore, may be a slight difference in the Total Overcollateralization figure in the region of ±USD 1 billion.

*Calculated as (Total IM and DF Held PostHaircut) minus (Total IM and DF Required). Disclosures (6.2.15 + 4.3.15) – (6.1.1 + 4.1.4) = Total Overcollateralization. (Only PostHaircut values used for Held values).

*The sum of the % in the IM column × 100% since: The sum of IM Held across 6.2.1 – 6.2.14 is slightly lower than the Total IM Held Values for 6.2.15, due to DTCC requesting that 6.2.15 figures be equivalent to 4.3.15 figures; and 4 other CCPs providing only totals for their 6.2.15 values.

OCC 6.2.1 – 6.2.14 House, Clientand Total 'PreHaircut' figures are considered 'PostHaircut' values for the purpose of analysis.

Data has been normalized to USD equivalent, based on a conversation from quarter-end FX rates provided by the ECB.

CCPG PQD QUARTERLY TRENDS - 2023 Q2

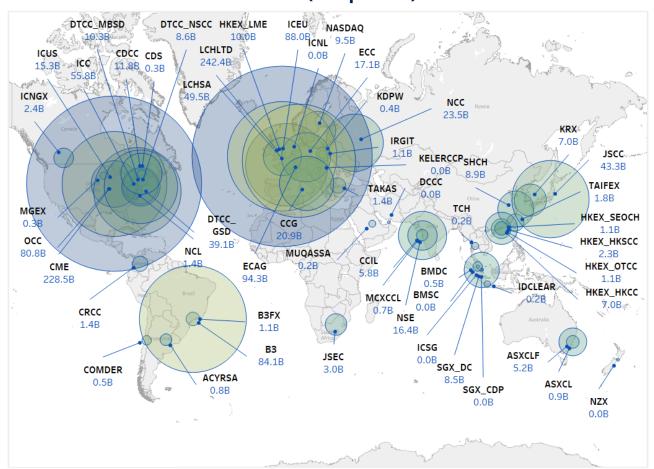


Collateral View

A collection of maps each quarter providing an overview of the global distribution of Initial Margin, Default Fund and Variation Margin from a global perspective.

2023 Q2

6.1.1: Global IM (Required) Per CCP*





The coloured disks indicate the size of the IM (Required) (according to the key, opposite), from a geographical perspective.

6.1.1 USD		~		
0.0B	,	242.4B		
6.1.1 USD				
		0.0B		
		50.0B		
		100.0B		
		150.0B		
		200.0B		
		242.4B		

CCP	6.1.1 USD
ICNL	0.00
VSDC	0.00
VSDC	0.00
ICSG	576,453.24
NZX	7,249,156.07
DCCC	9,684,198.00
BMSC	17,064,460.20
SGX_CDP	31,820,557.41
KELERCCP	35,267,012.71

*Based on the CCP's city location. For CCPs that are from the same city location, they are hidden behind the larger transparent disks.

Muqassa: IM = 0 for certain quarters, since at those reporting dates, there were no open contracts and hence no IM requirement for any members.

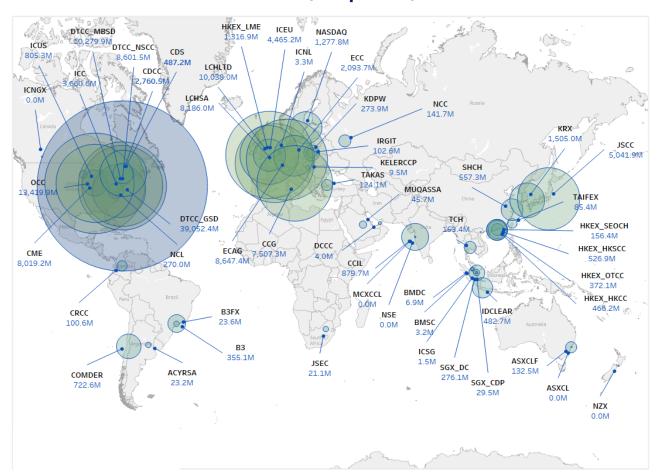


Collateral View

A collection of maps each quarter providing an overview of the global distribution of Initial Margin, Default Fund and Variation Margin from a global perspective.

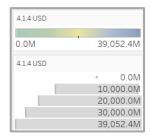
2023 Q2

4.1.4: Global DF (Required) Per CCP*





The coloured disks indicate the size of the DF fund (Required) per CCP (according to the key, opposite), from a geographical perspective.



^{*}Based on the CCP's city location. For CCPs that are from the same city location, they are hidden/overlayed behind the larger transparent disk 4.1.4 DF (Required) is zero for ASXCL, ICNGX, MCXCCL, NSE, NZX. For further details, please see the respective CCP's PQD.

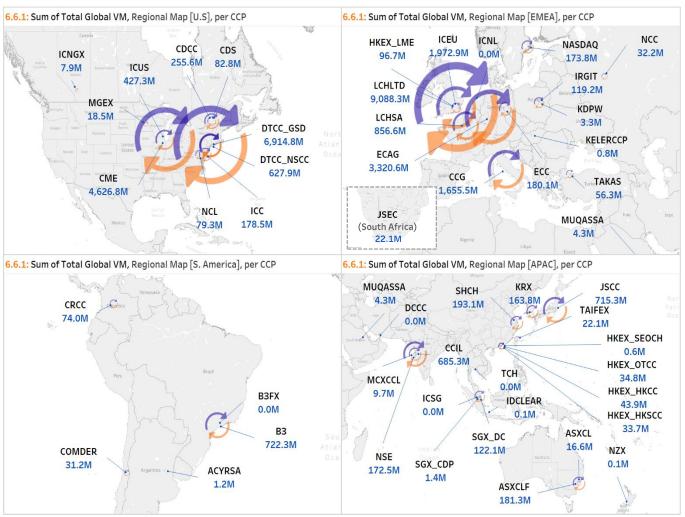


Collateral View

A collection of maps each quarter providing an overview of the global distribution of Initial Margin, Default Fund and Variation Margin from a global perspective.

2023 Q2

6.6.1: Total VM Paid to the CCP by participants each business day*







The double arrows indicate the size of the variation margin (VM) flow from a geographical perspective*. Please see the footnote below and page 15 for details about VM.

6.6.1 values < USD 100,000 (not seen from map):		
CCP	6.6.1 USD	
B3FX	0.00	
BMDC	0.00	
BMSC	0.00	
DCCC	0.00	
ICNL	0.00	
OCC	0.00	
TCH	0.00	
VSDC	0.00	
ICSG	4,372.08	
IDCLEAD	60 251 04	

^{*}CCPs collect VM from clearing members for losses on positions and pay the gains with finality to those clearing members with positions that have a net increase in value based on marked-to-market prices. VM is not paid directly from any specific clearing member or customer counterparty to another as a pass-through transfer, VM is a <u>netted cash flow</u> from a clearing member to (or from) the CCP. 6.6.1: OCC — See PQD explanatory notes. For values which are zero, these are based on the respective PQDs.

Sep-23

CCPG PQD QUARTERLY TRENDS — 2023 Q2

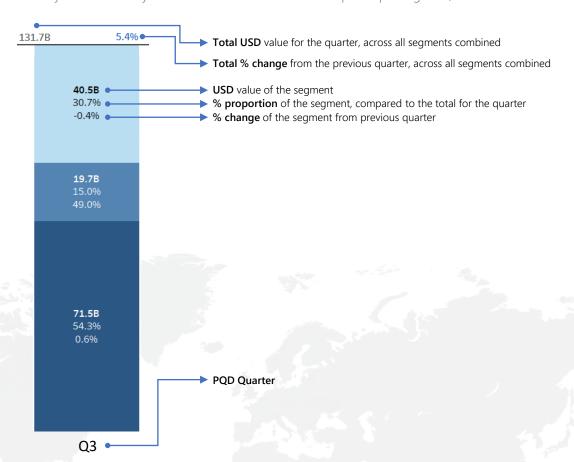
8



PQD Statistics Key

Bar Chart Key:

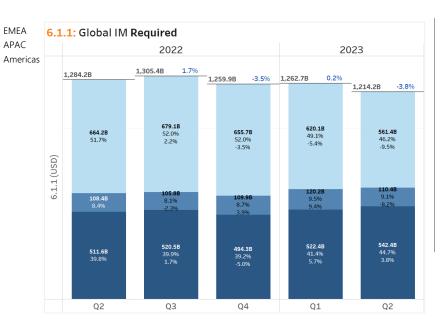
The key below provides details on how to interpret statistics in the subsequent charts of this report. The key is used for only charts where there are three data points per segment, as shown below:





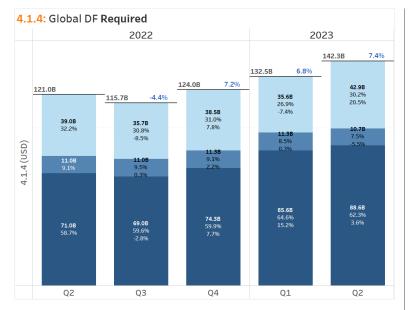
Total IM Required decreases slightly by -3.8% for 2023 Q2. DF Required increases by +7.4% over the quarter. Proportion across each region has remained steady.

Global CCP Collateral (Required) - Grand Total 2022 Q1 to 2023 Q1 (USD B, %)



The chart opposite (6.1.1: Global IM Required) indicates the total amount of initial margin in total for the CCPs by their clearing members across the respective regions which is reported at the quarter-end under disclosure 6.1.1 in the CCP Public Quantitative Disclosures.

The initial margin collateral posted by clearing members functions as one of the initial lines of defence to cover the potential losses incurred if that clearing member was to default. CCPs are therefore able to have a very high level of resilience in the form of liquidity and low risk exposure.



The chart opposite (4.1.4: Global DF Required) indicates the total amount of default fund contributions in total for the CCPs by their clearing members across the respective regions which is reported at the quarterend under disclosure 4.1.4 in the CCP Public Quantitative Disclosures.

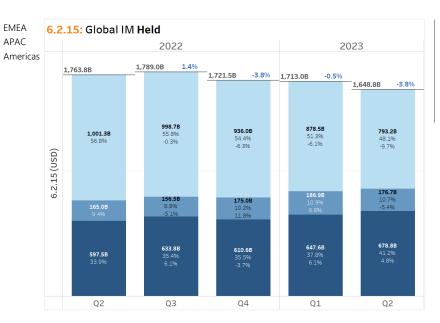
The purpose of the mutualized CCP default fund is to provide the necessary funds in case the losses from a clearing member's default exceeds the clearing member's margin collateral and individual default fund contributions. It is part of the risk management incentives framework in central clearing.

More information regarding the CCP lines of defence can be found on the CCP Global website here.

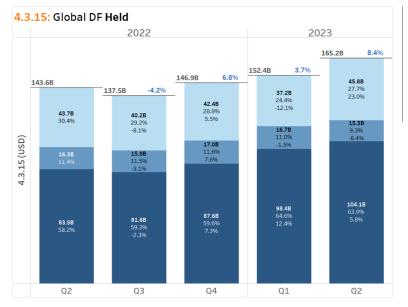


Total IM Held decreased by -3.8% for 2023 Q2, compared to DF Held which increased by +8.4%. Distribution of IM Held is consistently the largest for EMEA, followed by Americas & APAC.

Global CCP Collateral (Held) (PostHaircut) - Grand Total 2022 Q2 to 2023 Q2 (USD B, %)



The chart opposite (6.2.15: Global IM Held) indicates the total amount of initial margin in total for the CCPs by their clearing members across the respective regions which is reported at the quarter-end under disclosure 6.2.15 in the CCP Public Quantitative Disclosures..



The chart opposite (4.3.15: Global DF Held) indicates the total amount of default fund contributions in total for the CCPs by their clearing members across the respective regions which is reported at the quarterend under disclosure 4.3.15 in the CCP Public Quantitative Disclosures.



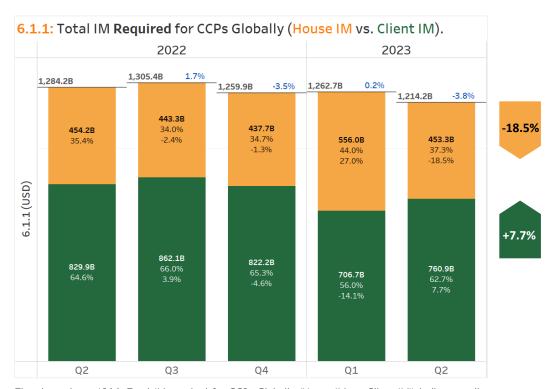
From the House IM vs Client IM split, House IM decreased by -18.5%, compared to Client IM which increased by +7.7%. House IM accounted for 37.3% of the margin requirement, compared to 62.7% for Client IM.

Global IM breakdown: House IM vs. Client IM (Required)

Disclosure (6.1.1):

2022 Q2 to 2023 Q2 (USD B, %)

House IM
Client IM



The chart above (6.1.1: Total IM required for CCPs Globally (House IM vs. Client IM)) indicates split between House and Client IM which is reported at the quarter-end under disclosure 6.1.1.

The House IM segment is the initial margin requirement for positions held by clearing members for their own portfolios, as opposed to the initial margin requirement for the clearing member's clients. House Gross/Net and Client Gross/Net are grouped together for the purpose of analysis.

Sep-23

^{*}Sum of IM Required is slightly lower than the Total IM Required (previous page), due to no breakdown of House/Client IM Required for HKEX HKSCC, HKEX OTCC and NSE. As a result, these are assumed House IM.

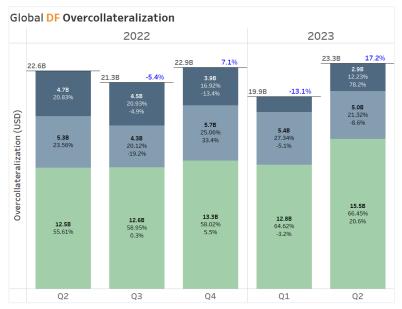


Global IM Overcollateralization was USD 429.2B for 2023 Q2, representing a decrease of -4.7% from 2023 Q1. Global DF Overcollateralization was USD 23.3B for 2023 Q2, representing an increase of +17.2% from 2023 Q1.

Global CCP IM and DF Overcollateralization*

Disclosures IM OC: (6.2.15) – (6.1.1) Disclosures DF OC: (4.3.15) – (4.1.4) 2022 Q2 to 2023 Q2 (USD B, %)





*IM OC calculated as (6.2.15 Held PostHaircut) - (6.1.1 Required), DF OC calculated as (4.3.15 Held PostHaircut) - (4.1.4 Required), (Only PostHaircut values used for Held values). OC: Overcollateralization.



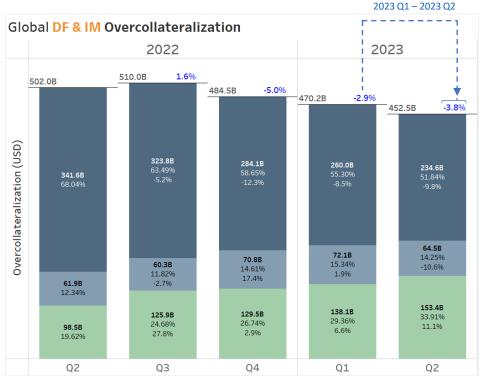
Total Overcollateralization* was USD 452.5B for 2023 Q2, representing a decrease of -3.8% from the previous quarter.

Global CCP Overcollateralization (IM & DF <u>Held (PostHaircut)</u> – IM & DF <u>Required</u>) Disclosures Total OC: (6.2.15 + 4.3.15) – (6.1.1 + 4.1.4) 2022 Q2 to 2023 Q2 (USD B, %)



Total Global (IM & DF)

Overcollateralization Change



The chart above (*Global CCP Overcollateralization (IM and DF Held PostHaircut)* indicates an overview of the IM and DF overcollateralization per region, reported at the quarter-end.

Global CCP Overcollateralization provides a sense of how a CCP is collateralized when comparing the held amounts against the required amounts. The Total Global CCP Overcollateralization calculation is equivalent to PQD disclosures (6.2.15+4.3.15) – (6.1.1+4.1.4).



Sum of the Average Total VM Paid to the CCP by participants each business day decreased by -16.0% in 2023 Q2.

Sum of Average Total Global VM Paid to the CCP by participants each business day[†] Disclosure (6.6.1)

2022 Q2 to 2023 Q2 (USD B, %)





The chart opposite, (6.6.1: Sum of Average Total Global VM Paid to the CCP by Participants Each Business Day) indicates the sum total flow of the average variation margin through global CCPs split by region.

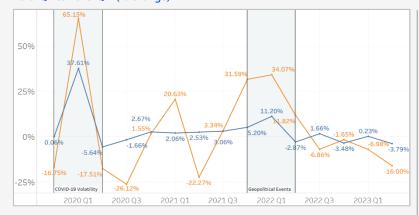
Variation margin payments are usually made daily (in cash) or intra day from the party whose position has reduced in value to the party which has increased in value.

These daily mark-to-market payments prevent the unnecessary build-up of large losses over time and are one of the many different aspects of a CCP's lines of defence.

(6.6.1) Total Δ% (6.1.1) Total Δ%

PQD Insight 🦓

6.6.1 vs. 6.1.1: Sum of Total Global VM Paid to the CCP by participants each business day vs. Total IM (Required), % Change QoQ[†] 2019 Q4 to 2023 Q2 (% change)



The chart opposite, 6.6.1 vs. 6.1.1: % Difference QoQ, provides a summary of the % change of the Total Global VM Paid to the CCP by participants each business day and the Total IM (Required).

It is important to note that during extreme volatility periods such as the CC* or 2022 Q1 geopolitical turmoil, global volatility indices (e.g., VIX, VSTOXX and NIKKEI VI), have seen much higher increases in comparison. Please see the CCP Global Annual Markets Review 2020, 2021 and 2022.

VM: Variation Margin

*CC: COVID-19 crisis in 2020 Q1. Global VM 6.6.1 increased 65.15%, represented by USD 40.9 B – please see the CCP Global 2020 Q1 PQD Newsflash.

*Note: This is the sum total of the average VM paid out to the CCP by participants each business day across the respective regions. Not the average per CCP per region

*CPG PQD QUARTERLY TRENDS – 2023 Q2



Total Cash Held* for IM decreased by -11.1% for 2023 Q2. Majority of all cash resources have continued to be deposited at Central Banks[†].

6.2.1 – 6.2.4: Global CCP IM (Held) (PostHaircut), Cash Total 2022 Q2 to 2023 Q2 (USD B, % change QoQ)

(6.2.4) Unsecured at Commercial Banks
(6.2.3) Secured Cash at Commercial Banks (Incl. Reverse Repos)
(6.2.1 + 6.2.2) Central Bank†



Central Bank accounts are widely agreed by the industry and regulatory community as the safest option for the safekeeping of CMs' margin. Many CCPs maintain large daily cash balances and although the CCPs continue to operate extensive collateral management functions to ensure the safety of margin that they receive, direct access to a central bank account would only enhance this security further.

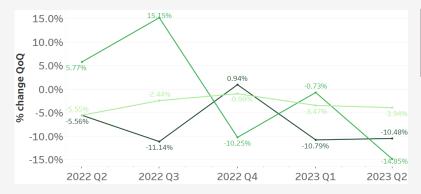


The chart opposite, (6.2.1 – 6.2.4: Global CCP IM (Held) (PostHaircut), Cash Total) provides an overview of the split of IM (Held) deposits at central banks and commercial banks under disclosures 6.2.1 – 6.2.4.

(6.2.4) Δ% (6.2.3) Δ% (6.2.1)+ Δ%

PQD Insight 🛞

6.2.1 – 6.2.4: Global Cash IM (Held) (PostHaircut), % Difference QoQ per segment 2022 Q2 to 2023 Q2 (% change)



The chart opposite (6.2.1 – 6.2.4: Global Cash IM (Held) (PostHaircut), % Difference QoQ per segment) provides an overview of the quarterly change of IM (Held) deposits.

^{*}Figures as of quarter-end. Sum of IM Held across 6.2.1 – 6.2.14 is slightly lower than the Total IM Held Values for 6.2.15, due to: (1). DTCC have requested that 6.2.15 figures be equivalent to 4.3.15 figures, (2). For OCC 6.2.15 total > sum of 6.2.1 – 6.2.14. TCH provide the full breakdown of 6.2.15 split across 6.2.1 - 6.2.14 as of 2020 Q2.

*Cash deposited at *Other* Central Bank of Issue* (IM: 6.2.2, DF: 4.3.2) makes up <0.5% of the total cash collateral for IM and <0.5% for the DF. Therefore, "Central Bank of Issue* and "Other Central Bank"

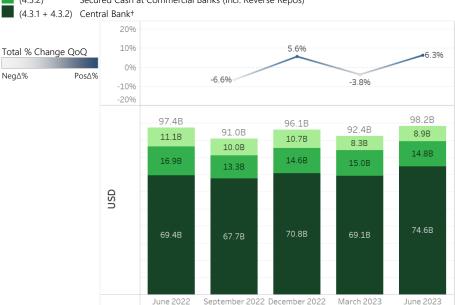




Total <u>Cash Held*</u> for DF increased by +6.3% for 2023 Q2. Majority of all cash resources have continued to be deposited at Central Banks[†].

4.3.1 – 4.3.4: Global CCP DF (Held) (PostHaircut), Cash Total 2022 Q2 to 2023 Q2 (USD B, % change QoQ)

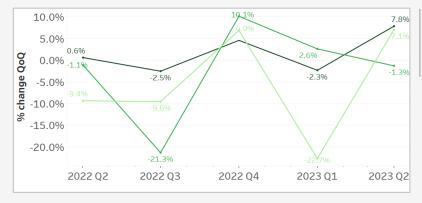




The chart opposite, (4.3.1 – 4.3.4: Global CCP DF (Held) (PostHaircut), Cash Total) provides an overview of the split of DF (Held) deposits at central banks and commercial banks under disclosures 4.3.1 – 4.3.4.

(4.3.4) Δ% (4.3.3) Δ% (4.3.1)+ Δ%

4.3.1 – 4.3.4: Global Cash DF (Held), % Difference QoQ per segment 2022 Q2 to 2023 Q2 (% change)



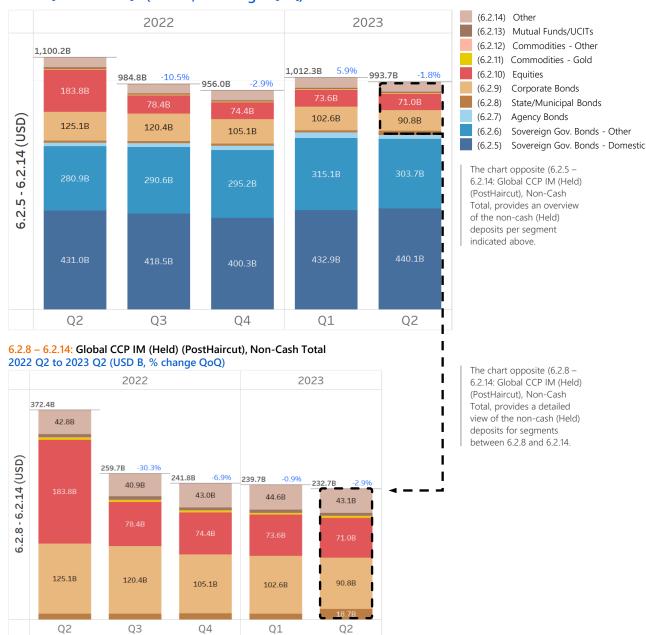
The chart opposite (4.3.1 – 4.3.4: Global Cash DF (Held), % Difference QoQ per segment) provides an overview of the quarterly change of DF (Held) deposits.

^{*}Figures as of quarter-end. Sum of IM Held across 6.2.1 – 6.2.14 is slightly lower than the Total IM Held Values for 6.2.15, due to: (1). DTCC have requested that 6.2.15 figures be equivalent to 4.3.15 figures, (2). For OCC 6.2.15 total > sum of 6.2.1 – 6.2.14. TCH provide the full breakdown of 6.2.15 split across 6.2.1 – 6.2.14 as of 2020 Q2. tCash deposited at "Other Central Bank of Issue" (IM: 6.2.2, DF: 4.3.2) makes up <0.5% of the total cash collateral for IM and <0.5% for the DF. Therefore, "Central Bank of Issue" and "Other Central Bank" Cash deposits grouped together within charts.



During 2023 Q2, total global Non-Cash IM Held decreased by -1.8%. The split across each segment has remained similar from the previous quarter.

6.2.5 – 6.2.14: Global CCP IM (Held) (PostHaircut), Non-Cash Total 2022 Q2 to 2023 Q2 (USD B, % change QoQ)



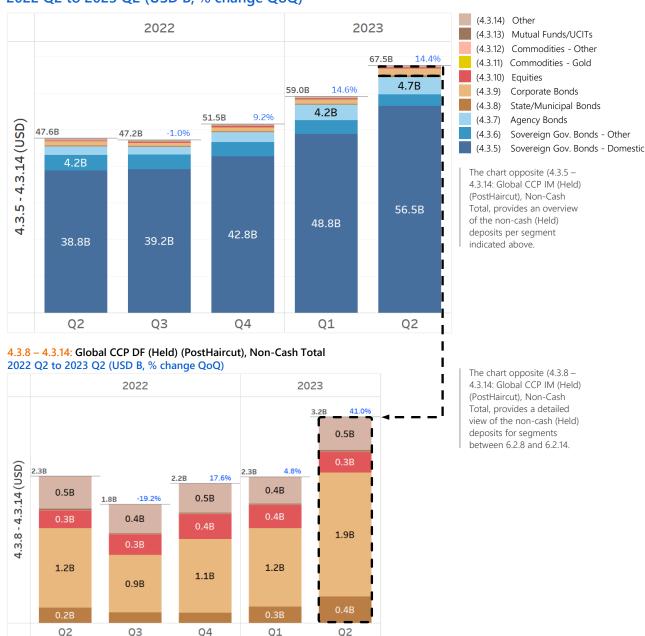
^{*}Figures as of quarter end. Sum of IM Held across 6.2.1 – 6.2.14 is slightly lower than the Total IM Held Values for 6.2.15, due to 1). DTCC have requested that 6.2.15 figures be equivalent to 4.3.15 figures, and 2). OCC 6.2.15 total > sum of 6.2.1 – 6.2.14. TCH provide the full breakdown of 6.2.15 split across 6.2.1 – 6.2.14 as of 2020 Q2. †Disclosures 4.3.8 – 4.3.14 constitute on average <1.5% of total non-cash collateral per quarter.

Sep-23 CCPG PQD QUARTERLY TRENDS – 2023 Q2 18



During 2023 Q2, total global Non-Cash DF Held increased by +14.4%. The split across each segment has remained similar from the previous quarter.

4.3.5 – 4.3.14: Global CCP DF (Held) (PostHaircut), Non-Cash Total 2022 Q2 to 2023 Q2 (USD B, % change QoQ)



*Figures as of quarter end. Sum of IM Held across 6.2.1 – 6.2.14 is slightly lower than the Total IM Held Values for 6.2.15, due to 1). DTCC have requested that 6.2.15 figures be equivalent to 4.3.15 figures, and 2). OCC 6.2.15 total > sum of 6.2.1 – 6.2.14. TCH provide the full breakdown of 6.2.15 split across 6.2.1 – 6.2.14 as of 2020 Q2. †Disclosures 4.3.8 – 4.3.14 constitute on average <1.5% of total non-cash collateral per quarter.

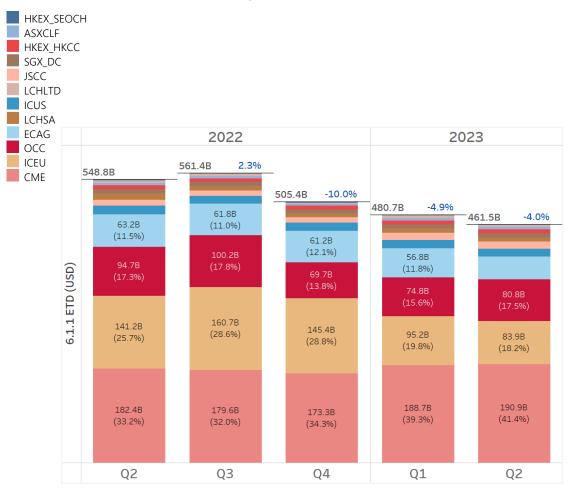
Sep-23 CCPG PQD QUARTERLY TRENDS – 2023 Q2 19



For 2023 Q2 the IM required for ETDs across the following selected 12 CCPs decreased by -4.4%. Proportion of IM across each CCP has remained consistent QoQ.

Global CCP IM (Required) Collateral for ETDs across selected CCPs Disclosure (6.1.1)





The chart above (6.1.1: Global CCP IM (Required) Collateral for ETDs across selected CCPs) provides a summary of the IM required for ETDs across a number of selected CCPs chosen for a global geographical representation.

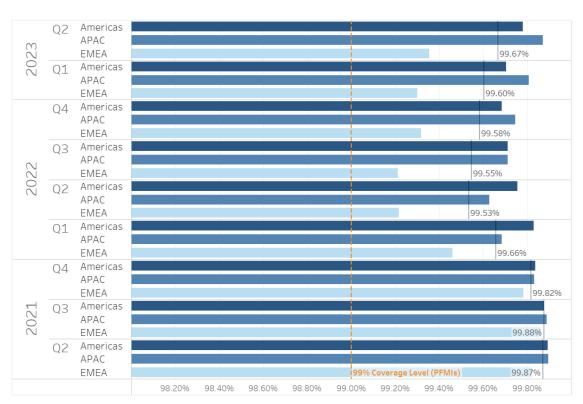


Results of backtesting of initial margin (ACL - Achieved Coverage Level) reached 99.67% (on average) across all regions for 2023 Q2, higher than the previous quarter.

Results of backtesting of initial margin – ACL* Disclosure (6.5.3)

2021 Q2 to 2023 Q2 (%)





The chart above (Results of backtesting of Initial Margin – Achieved Coverage Level). Backtesting is an important technique that a CCP utilizes to ensure that its initial margin model is performing as expected and that the assumptions within the model are valid. A CCP should assess its initial margin coverage by performing an ex-post comparison of observed profit and loss moves of a given portfolio against the initial margin collected.

According to the <u>Principles for Financial Market Infrastructures</u>, a 99.00% coverage of backtesting is used as a benchmark to assess the efficiency of the initial margin model, however, a CCP may use a higher (percentile) benchmark. As can be seen from the above metrics, global CCPs on average have achieved above 99.00% in all instances from recent years.

For further information, please see the CCP Global White Paper – Primer on Initial Margin.

*Average has been taken across each CCP in each respective region.

22



CCPs reported availability to core clearing systems of 99.96% over the previous 12-month period.*

Availability, Failures and Recovery Time Objectives 2023 Q2

CCPs report the quantity and duration of operational failures affecting their core clearing systems over the previous 12-months on a quarterly basis:

- **Core Systems:** Within clearing, systems enable the acceptance and novation of trades, and provide the calculation of margin and settlement obligations;
- Loss of Availability: An incident that results in an interruption to the CCP's ability to perform its own functions in relation to trade acceptance and novation, or calculation of margin and settlement obligations. An incident that compromises the CCP's ability to correctly perform the aforementioned functions is also considered a 'loss of availability', even if there is no actual outage. Failure to a back-up site without interruption to services would not count as a loss of availability.

Disclosure (17.2):

The average actual core clearing system availability over the previous twelve-month period (July 1, 2022, through June 30, 2023) across all 56 CCP PQDs was: **99.96**%

Disclosure (17.4):

56 CCP PQDs representing 34 CCP Global Members & 2 Non-Members [†]			
2 CCPs observe a target recovery time of within:	45 mins		
3 CCP observe a target recovery time of within:	1 hr		
49 CCPs observe the standard target recovery time of within:	2 hrs		
2 CCPs observe a target recovery time of within:	4 hrs		

According to the <u>Principles for Financial Market Infrastructures</u>, the objectives of a CCP's business continuity plan should detail the system's target recovery time ("TRT") and recovery point information. Based on the PFMI's, a CCP should aim to be able to resume operations within two hours following a disruptive event(s); however, backup systems should preferably commence processing immediately upon such a disruption.

As seen from the above table, the majority of global CCPs have a target recovery time set as two hours or shorter; with only 2 CCPs observing a slightly longer TRT based on their respective regulatory requirements.



CCP Global Member List*

CCPG Member	CCP Mnemonio	Region	Country	CCP Name & PQD Hyperlink
ACYRSA	ACYRSA	Americas	Argentina	Argentina Clearing y Registro S.A.
ASX	ASXCL	APAC	Australia	Australia Securities Exchange Clear
ASX	ASXCLF	APAC	Australia	Australia Securities Exchange Clear Futures
В3	В3	Americas	Brazil	Brasil, Bolsa, Balcão (BM&FBOVESPA Clearinghouse)
В3	B3FX	Americas	Brazil	Brasil, Bolsa, Balcão (Foreign Exchange Clearinghouse)
BMAL	BMDC	APAC	Malaysia	Bursa Malaysia Derivatives Clearing
BMAL	BMSC	APAC	Malaysia	Bursa Malaysia Securities Clearing
CCIL	CCIL	APAC	India	The Clearing Corporation of India Ltd.
CME	CME	Americas	United States of America	Chicago Mercantile Exchange
COMDER	COMDER	Americas	Chile	ComDer Contraparte Central S.A.
CRCC	CRCC	Americas	Colombia	Cámara de Riesgo Central de Contraparte S.A.
DCCC	DCCC	EMEA	United Arab Emirates	The Dubai Commodities Clearing Corporation
Dubai Clear	DBCL	EMEA	United Arab Emirates	<u>Dubai Clear</u>
DTCC	DTCC_GSD	Americas	United States of America	<u>Depository Trust and Clearing Corporation – Government Securities Division Solutions</u>
DTCC	DTCC_MBSD	Americas	United States of America	Depository Trust and Clearing Corporation – Mortgage-Backed Securities Division
DTCC	DTCC_NSCC	Americas	United States of America	Depository Trust and Clearing Corporation – National Securities Clearing Corporation
ECAG	ECAG	EMEA	Germany	Eurex Clearing Group
ECAG	ECC	EMEA	Germany	European Commodity Clearing
ECAG	NCL	Americas	United States of America	
HKEX	HKEX_HKCC	APAC	Hong Kong	HKFE Clearing Corporation Limited
HKEX	HKEX_HKSCC	APAC	Hong Kong	Hong Kong Securities Clearing Company Limited
HKEX	HKEX_LME	EMEA	United Kingdom	The London Metal Exchange
HKEX	HKEX_OTCC	APAC	Hong Kong	OTC Clearing Hong Kong Limited
HKEX	HKEX SEOCH	APAC	Hong Kong	The SEHK Options Clearing House Limited
ICE	ICC	Americas	United States of America	ICE Clear Credit
ICE	ICEU	EMEA	United Kingdom	ICE Clear Europe
ICE	ICNGX	Americas	Canada	ICE Clear Canada
ICE	ICNL	EMEA	Netherlands	ICE Clear Netherlands
ICE	ICSG	APAC	Singapore	ICE Clear Singapore
ICE	ICUS	Americas	United States of America	ICE Clear US
IDClear	IDCLEAR	APAC	Indonesia	<u>ID Clear</u>
IRGIT	IRGIT	EMEA	Poland	Izba Rozliczeniowa Giełd Towarowych S.A. (IRGiT, Clearing House)
JSCC	JSCC	APAC	Japan	Japan Securities Clearing Corporation
JSE	JSE	EMEA	South Africa	Johannesburg Stock Exchange
KASE	KASE	EMEA	Kazakhstan	Kazakhstan Stock Exchange JSC
KELER	KELER	EMEA	Hungary	KELER CCP
KDPW	KDPW	EMEA	Poland	KDPW_CCP
KRX	KRX	APAC	South Korea	<u>Korea Exchange</u>
LSEG	LCHLTD	EMEA	United Kingdom	London Clearing House Ltd.
LSEG	LCHSA	EMEA	France	London Clearing House S.A.
MCXCCL	MCXCCL	APAC	India	Multi Commodity Exchange Clearing Corporation Limited
MGEX	MGEX	Americas	United States of America	Minneapolis Grain Exchange
MUQASSA	MUQASSA	EMEA	Saudi Arabia	Securities Clearing Center Company (Muqassa)
NASDAQ	NASDAQ	EMEA	Sweden	Nasdaq Clearing
NON-MEMBER		EMEA	Russia	Central Counterparty National Clearing Centre
NON-MEMBER		EMEA	Italy	Cassa di Compensazione e Garanzia S.p.A.
NSE	NSE	APAC	India	NSE Clearing Limited
NZX	NZX	APAC	New Zealand	New Zealand Exchange
OCC	OCC	Americas		The Options Clearing Corporation
SGX	SGX_CDP	APAC	Singapore	Singapore Exchange (Central Depository (Pte) Limited)
SGX	SGX_DC	APAC	Singapore	Singapore Exchange (Derivatives Clearing) Shanghai Clearing House
SHCH	SHCH	APAC	China Taiwan	Shanghai Clearing House Taiwan Futures Evelopes (Taifey)
TAIFEX TAKASBANK	TAIFEX TAKASBANK	APAC EMEA		Taiwan Futures Exchange (Taifex) Takasbank
TCH	TCH	APAC	Turkey Thailand	Thailand Clearing House Co. Ltd.
TMX	CDS	Americas		TMX Group - Canadian Depository for Securities Limited (CDS Ltd.)
TMX	CDCC	Americas	Canada Canada	TMX Group - Canadian Depository for Securities Limited (CDS Ltd.) TMX Group - Canadian Derivatives Clearing Corporation (CDCC)
VSD	VSD	APAC	Vietnam	Vietnam Securities Depository
v JU	V 3D	AFAL	VICUIAIII	viction securities depository

*CCP Global non-members included in the CCP Global PQD Quarterly Trends Report analysis are clearly indicated



About CCP Global

CCP Global is the global association for CCPs, representing 42 members who operate over 60 individual central counterparties (CCPs) globally across the Americas, EMEA and the Asia-Pacific region. CCP Global promotes effective, practical, and appropriate risk management and operational standards for CCPs to ensure the safety and efficiency of the financial markets it represents.

CCP Global leads and assesses global regulatory and industry initiatives that concern CCPs to form consensus views, while also actively engaging with regulatory agencies and industry constituents through consultation responses, forum discussions and position papers.

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