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9 July 2026

The Margin Paradox: Anti-Procyclicality (APC) at CCPs - Same Rules, Different Outcomes

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ACKNOWLEDGEMENTS:

Altair & Alang would like to thank the market participants who generously shared their time, perspectives, and constructive feedback during the development of this Featured Insight report. We would like to thank the central counterparties (CCPs) analysed within the report, Wael AlHazzani from Muqassa (Securities Clearing Center Company), José Manuel Suarez Jiménez from Cámara de Riesgo Central de Contraparte de Colombia S.A. - CRCC S.A., Oscar Leiva from Cámara de Riesgo Central de Contraparte de Colombia S.A. - CRCC S.A., Ketan B. Patel from the Federal Reserve Bank of Chicago, Randy Priem from the Financial Services and Markets Authority (FSMA) & International Organization of Securities Commissions (IOSCO), Robert Steigerwald Independent Policy Advisor, Matt Wade from the LME, for their comments.

REF: AA_FEATURED_INSIGHTS_APC_20260709V2

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Date: 2026-07-09

Prepared by: Altair & Alang



For any questions regarding this report, please contact: info@altairalang.com

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1. ABSTRACT

This report examines anti-procyclicality (APC) in central counterparty (CCP) initial margin through a constructive and evidence-based lens. Its central argument is that while CCPs across jurisdictions use different APC frameworks, model features, and governance practices, these differences reflect the reality that CCPs clear different products, serve different market structures, and operate under different legal and supervisory environments, while still pursuing the same core objective: well-calibrated margin that remains prudent in calm periods and sufficiently stable in stress.

Drawing on data from the CPMI-IOSCO Public Quantitative Disclosures (PQDs), cross-CCP comparisons, and recent policy developments, the report shows that CCPs generally collect and maintain meaningful levels of margin during lower-volatility periods. In some jurisdictions, this baseline conservatism is itself the primary APC mechanism (a buffer built into the initial margin requirement from the outset, rather than a separate tool layered on top of it) meaning that margin-setting during calm periods is not merely a precursor to anti-procyclicality measures but already an expression of them. Elsewhere, this same practice of maintaining higher baseline margin serves a complementary function: reducing the size of the adjustment needed from a dedicated APC tool once market conditions deteriorate.

In this sense, APC measures are best understood not as stand-alone emergency levers, but as part of a broader and carefully layered risk management framework that includes conservative model calibration, prefunding, governance, stress testing, and transparent communication channels with clearing members.

The report also argues that differences in observed margin behaviour should often be interpreted as evidence of jurisdiction-specific calibration rather than any failure, and that stronger disclosure standards, including the January 2025 BCBS-CPMI-IOSCO proposals and the Bank of England's outcomes-focused approach, can further improve market understanding without undermining the flexibility CCPs require to manage risk appropriately.

Under the current PQD reporting framework, PQD-based analysis is used throughout this report to explore where CCP data is genuinely comparable and where structural differences must be taken into account.

Overall, the report concludes that CCP APC frameworks, although not identical, are succeeding in their intended purpose: supporting resilience, limiting destabilising margin cliff effects, and helping CCPs absorb stress from a position of strength built during calmer market conditions. There is always a delicate balance between margin reactivity during periods of stress, and we find that CCPs are able to adequately manage this appropriately despite periods of significant turbulence.

2. INTRODUCTION

2.1 THE ROLE OF CENTRAL COUNTERPARTIES IN GLOBAL MARKETS

The systemic importance of Central Counterparties (CCPs) has reached an unprecedented peak in recent years. Following the post-2008 global financial crisis (GFC) reforms that mandated central clearing for standardised OTC derivatives, CCPs have become the "nerve centres" of the financial ecosystem. Their primary function - to mitigate counterparty credit risk - relies on the collection of Initial Margin (IM) and Variation Margin (VM) with carefully calibrated margin models.

Initial Margin (IM) is the collateral a central counterparty (CCP) requires from clearing members to cover potential future exposure that could arise from adverse changes in the market value of open positions before they can be closed out. It is calculated using the CCP's risk-based margin model, which typically reflects factors such as volatility, correlation, product type, portfolio composition, and the targeted confidence level (at least 99% - Principle 6, CPMI IOSCO Principles for Financial Market Infrastructures)¹, and is reported across house and client accounts. IM required represents the model-calculated amount that should be collateralised, while IM held represents the actual collateral received by the CCP, which may differ because of excess collateral, or conservative margining practices.

Variation Margin (VM) is the collateral settlement exchanged between clearing members through a CCP to reflect realised mark-to-market gains and losses on open positions. Unlike Initial Margin, which is forward-looking and designed to cover potential future exposure, VM is cash-flow based: it transfers value from clearing members whose positions have lost value to those whose positions have gained value, typically on a daily and sometimes intraday basis. By settling these gains and losses promptly, VM prevents exposures from accumulating within the CCP and ensures that the CCP remains market-risk neutral.

A critical challenge in the post-2008 mandate is the management of procyclicality: the tendency for margin requirements to rise unexpectedly and sharply during periods of market stress, potentially exacerbating liquidity strains for Clearing Members (CMs) and their clients. To combat this, CCPs have a vital toolkit in their arsenal: the implementation of anti-procyclicality (APC) measures. Rather than simply keeping margin low and stable during calm periods, these measures are designed to hold margin somewhat higher than the prevailing low-volatility environment would otherwise justify - building a cushion in advance - so that when volatility does increase, the margin requirement does not need to rise as sharply or as suddenly to catch up.

2.2 HOW DO CCPS SET INITIAL MARGIN FOR THE CONTRACTS THEY CLEAR?

2.2.1 INTERNATIONAL REGULATORY BASELINE

The foundation for how CCPs calculate initial margin (IM) is set at the international level by the CPMI-IOSCO Principles for Financial Market Infrastructures (PFMI, 2012), supplemented by additional CCP resilience guidance published in 2017. The PFMI require CCPs to hold initial margin calibrated to a single-tailed confidence level of at least 99% with respect to the estimated distribution of future exposure, applied at the portfolio level where margin is calculated on that basis. Regulators in each jurisdiction translate this minimum into domestic rules: in the EU, through EMIR; in the UK, through onshored EMIR (though this is an area of active divergence as UK authorities revise the framework under, a point we return to later in this report); and in the US, through the Dodd-Frank Act's implementing rules - CFTC regulations for Derivatives Clearing Organisations (DCOs) covering swaps and futures, and SEC rules for covered clearing agencies covering security-based swaps and securities clearing, both discussed further later in this report.

Three key parameters shape any CCP's IM calculation: **(1). the confidence interval, (2). the Margin Period of Risk (MPOR), and the (3). lookback period for historical data.** CCPs have discretion to exceed regulatory minimums on all three, and in practice most maintain a baseline buffer above them. Where this discretion is exercised most visibly, however, is during periods of volatility, when CCPs can apply margin overrides or add-ons above the model-generated requirement to respond to conditions the model may not yet fully capture. Both the standing buffer and the capacity to overrule the model in stress periods contribute to a higher baseline level of resiliency.

2.2.2 THE CORE METHODOLOGY: FROM SPAN TO VAR/ES

Historically, the dominant IM methodology across global CCPs, particularly for exchange-traded derivatives (ETD), was CME's Standard Portfolio Analysis of Risk (SPAN), first introduced in 1988. SPAN estimates worst-case loss under a number of scenarios based on moves in prices and volatilities. The SPAN IM calculation consists of three main components: **(1). Scanning Loss** (the largest loss across 16 scenarios combining up and down price and volatility shifts);

¹ <https://www.bis.org/cpmi/publ/d101.htm>

(2). an **Intra-Contract Spread Charge** (covering price spreads between different expiries not captured in the Scanning Loss); and (3). an **Inter-Contract Spread Credit** (reflecting correlation benefits across related contracts).

The industry has, however, undergone a pronounced shift towards Value-at-Risk (VaR) and Expected Shortfall (ES) based models, which assess risk at the portfolio level rather than the product level. VaR models represent a significant departure from SPAN: unlike SPAN, which tends to assess product-level risk exposures first to compute portfolio margin, VaR models calculate margin by analysing the risk exposures for a portfolio of positions as a whole. Eurex began implementing its PRISMA model in 2013, based on Filtered Historical Simulation (FHS) VaR. The transition has since accelerated: in Q1 2022, ICE Clear US implemented its IRM2 model for equity index and interest rate products, and in Q3 2023, CME deployed SPAN2 for its energy products.²

The methodology also varies materially by asset class. CCPs clearing credit default swaps (CDS) typically use stress or Monte Carlo approaches, primarily due to data constraints and the dynamics of those markets. CCPs clearing interest rate swaps (IRS) predominantly use historical simulation, due to the availability of good-quality price data. CCPs in futures and options predominantly use SPAN, which is analogous to a parametric historical VaR. IRS and CDS CCPs use five-day close-out periods; futures and options close-out periods vary typically from one to three days, primarily reflecting differences in liquidity, regulation and market practice.

2.2.3 KEY MODEL PARAMETERS IN PRACTICE

Confidence Interval

The 99% confidence level is a PFMI-set minimum, but the extent to which CCPs run above it varies significantly by instrument type — the key driver is whether a product clears on an exchange-traded (ETD) or an over-the-counter (OTC) basis, rather than any particular asset class such as interest rate swaps. This distinction matters because it is embedded directly in the regulatory floors themselves: EMIR sets a minimum margin period of risk (MPOR) of two days for ETDs and five days for OTC-cleared products, reflecting the assumption that OTC positions take longer to hedge or close out in a default, given their comparatively lower liquidity and less standardised terms. A number of major CCPs apply confidence levels and lookback periods above these regulatory floors in practice, and the margin most European ETD CCPs actually hold reflects this: MPOR for ETDs tends to run between two and four days depending on the CCP and product (already above the two-day EMIR minimum) with lookback periods frequently longer than the regulatory minimum and confidence intervals sometimes set above the 99% floor mandated by EMIR. OTC clearing services at the same CCPs, and OTC-focused CCPs more broadly, typically run still longer MPORs and correspondingly higher margin, consistent with the wider five-day regulatory floor for those products.

Margin Period of Risk (MPOR)

The expected close-out period for a given product is the MPOR, and it is a critical assumption that a CCP must make in developing its margin methodology. This assumption may vary among products and markets, and should be based on a number of factors including a product's liquidity, price, how it is commonly traded, and the overall depth of the market. For IRS, five days is typically the standard MPOR. For ETD, one to three days is typical, though CCPs apply judgement on this based on product-specific liquidity.

Lookback Period

The lookback period determines how many years of historical price data are used to calibrate the scenarios. This is one of the most consequential parameters for procyclicality: a shorter lookback period makes margin more reactive to recent volatility for example. Most major CCPs use a minimum of five years and frequently extend to ten years, often with mandatory inclusion of the Global Financial Crisis period as a permanent stress window.

2.2.4 MAJOR CCP MODELS OVERVIEW

CME Group SPAN2 (ETD): SPAN2 uses a Filtered Historical Simulation approach, replacing the original SPAN scenario grid. SPAN2 captures tail losses in a portfolio over the MPOR (e.g. 1 or 2 days) at a desired confidence level, over a lookback period covering a sufficient historical window (e.g. 5 or 10 years). Daily returns from the lookback period are calculated using risk factor values, processed through additional analyses including correlation scaling and volatility scaling, and applied to current values to produce historically driven scenarios. Portfolio P&L is calculated for each scenario and the confidence-level tail loss constitutes the margin requirement.

² [Introduction of Eurex Clearing Prisma Release 2.0](#)

Eurex Clearing PRISMA (ETD and OTC): PRISMA is a Filtered Historical Simulation VaR model organised around product "liquidation groups". Stress period VaR is an integral component of PRISMA's methodology, serving as a prudent margin floor primarily relevant during low-volatility market regimes. Model parameters include the selection of historical stress period dates for the risk scenarios and the quantile level at which the margin floor is evaluated, calibrated to match a long-term target VaR, and are subject to regular annual recalibration. The PRISMA margin model targets a confidence level beyond 99% for listed instruments and beyond 99.5% for OTC instruments.

ICE Clear Credit (CDS): ICE Clear Credit applies a stress-based model for CDS, reflecting the non-normal and jump-to-default risk characteristics of credit products. The model uses Monte Carlo simulation across credit spread scenarios with a five-day MPOR and a confidence level targeting coverage of extreme loss events (99.5% according to the CCP Public Quantitative Disclosures (PQDs), disclosure 6.4.1 for 2026 Q1).³

LCH SwapClear (IRS): LCH calculates initial margin for SwapClear using its proprietary PAIRS (Portfolio Approach to Interest Rate Scenarios) model. PAIRS is an expected shortfall model based on filtered historical simulation incorporating volatility scaling. The model uses ten years of historical market data to simulate changes in portfolio value, from which an estimate of the potential loss distribution is calculated. In addition to PAIRS initial margin, SwapClear applies add-ons covering Credit Risk and Liquidity Risk where a particular member's inherent risk exposure is not captured within the PAIRS model. The model sets initial margin requirements to cover potential losses over a five-day close-out period with 99.7% confidence. LCH also imposes a floor on initial margin based on an unscaled historical 10-year lookback period plus an additional 2.5-year window covering the Global Financial Crisis, to prevent initial margin falling during periods of low volatility. For client positions, an additional two days are assumed for close-out, giving a seven-day total MPOR, with initial margin scaled accordingly.

OCC (US Listed Options): OCC uses its TIMS (Theoretical Intermarket Margining System) model. TIMS projects the theoretical cost of liquidating a portfolio of positions in the event of an assumed worst-case change in the underlying asset price. Given a set of input parameters (i.e. option contract specifics, interest rates, dividends and volatility), the pricing model predicts what each position will be worth at a specified underlying price. For each class group, the standard deviation is computed, and a margin interval is calculated covering a predetermined percentage, providing both a confidence level and a historical perspective on volatility; and accounting for non-normal price distribution patterns.

2.2.5 ADD-ONS AND SUPPLEMENTARY CHARGES

Beyond the core IM model, all major CCPs may apply discretionary add-ons to address risks not fully captured in their base model. These may typically include: concentration add-ons (where position size relative to market liquidity elevates liquidation risk); liquidity add-ons (for less liquid instruments where bid-offer spreads are larger); credit risk add-ons (for instrument-specific credit exposure); and wrong-way risk add-ons (where counterparty default is correlated with the value of the portfolio). The logic and thresholds for these add-ons are required by CPMI-IOSCO to be disclosed qualitatively to clearing members and CCPs offer these in their qualitative disclosure documents, and other resources on their respective websites. The Quick Access Transparency Links document developed by CCP Global offers market participants a gateway to many of these disclosures.⁴

2.2.6 PUBLIC QUANTITATIVE DISCLOSURES

Under the CPMI-IOSCO Public Quantitative Disclosures (PQDs), CCPs publish over 200 quantitative data fields covering margin, default resources, credit risk, collateral, liquidity risk, back-testing, and more on a quarterly basis. These disclosures include IM model type, key parameters (lookback period, MPOR, confidence interval), dates of model changes, and backtesting performance. CPMI-IOSCO has now proposed that CCPs additionally disclose a new standardised measure of margin responsiveness alongside associated changes in market conditions, and a break down of margin add-ons vs. core IM, implementable through the PQDs, and that CCPs disclose qualitative information enabling clearing members and their clients to understand material aspects of the margin model, including model type, calibration of key parameters, the logic and thresholds for margin add-ons, APC tools, and components affecting model responsiveness.

2.2.7 DIVERSITY OF APPROACHES AND THE STANDARDISATION DEBATE

The overall picture across worldwide CCPs is one of significant diversity, and rightly so – given the differences across jurisdictions, product mixes and regulations. IM model frameworks are highly diverse. Despite a shift away from SPAN towards VaR and ES models, full standardisation or comparability of modelling output is unlikely to be the result of this

³ <https://altairalang.com>

⁴ CCP Global Releases the Quick Access Transparency Links Template - Traders Magazine

transitional period, a consequence of the conscious decision to entrust CCPs with a large degree of flexibility, relying on their track record and awareness of risks. This diversity has indeed plays a part for the APC regime comparison undertaken in this report: the selection of APC tools and their effectiveness depends on the underlying model design.

2.3 CONTEXT AND EVOLUTION OF APC TOOLS

The evolution of APC tools has been driven by the real-world "stress tests" that markets have experienced over the past decade, and the relevance of those tools is even clearer in 2026. March 2020 (the Covid-19 crisis) and the 2022 commodities volatility following the Russia-Ukraine conflict remain important reference points, but more recent current-affairs developments have reinforced the same lesson. At the same time, the tariff-related volatility episodes seen since April 2025 and the broader repricing of geopolitical and policy risk have shown how quickly cleared derivatives markets can transmit macro shocks into variation margin flows, and renewed scrutiny of initial margin responsiveness. Most recently, the 2026 Iran conflict and the closure of the Strait of Hormuz drove oil, gas, and freight markets through price moves that, in several cases, exceeded anything in their historical distributions (Brent crude's roughly 55% surge from late February to its April peak was among the largest monthly moves on record), and the IMF, World Bank and IEA have separately characterised the associated supply disruption as the largest of its kind on record.⁵ This distinction matters: it is not that APC measures failed or were absent during this episode. Rather, margin models had already been calibrated conservatively under existing APC frameworks, but the scale of the shock itself sat outside what those frameworks (or almost any historical scenario set) had been built to anticipate, requiring more aggressive recalibration in real time than a "typical" stress event would have demanded. In that sense, APC is no longer just a technical discussion rooted in past crises; it sits squarely in today's market narrative, where geopolitical shocks, trade-policy uncertainty, and structural market reforms are all interacting at once - and where the outer edge of "extreme but plausible" is being tested more frequently than the design of most margin models originally assumed.

Historically and now into 2026, global CCPs have implemented a suite of standardised APC tools, as guided by explanatory note 3.6.10 within Principle 6 of the Principles for Financial Market Infrastructures (PFMI). As set out at the start of this chapter, CCPs mitigate procyclicality through three primary methods: explicit frameworks (often regulatory-mandated add-ons or buffers), implicit model features (embedded conservatism within the margin model itself, such as long lookback periods or elevated confidence intervals), and discretionary overrides exercised by CCP risk committees. A common discretionary tactic involves "pre-emptive increases" (manually raising margins before potential high-risk events, or maintaining them somewhat elevated through calmer periods generally) to smooth out anticipated liquidity shocks and prevent sudden, destabilising calls during the actual stress period.

One of the central challenges in the derivatives ecosystem remains the "procyclicality problem". In periods of relative market calmness, initial margin (IM) requirements remain steady or increase incrementally at a reasonable rate to ensure that during the next crisis, the IM requirements do not suddenly increase. However, when a sudden shock occurs, such as the Covid-19 crisis in 2020 or the energy volatility of 2022, margin models naturally respond by calling for more collateral, since volatility is itself a direct input into how margin is calculated: as realised and implied volatility rise, the model's estimate of potential future exposure rises with it, and the margin requirement moves accordingly. If these calls are unexpectedly large and rapid, they may force market participants to liquidate positions or pull liquidity from other sectors, potentially turning a market correction into a systemic crisis.

This report provides an evaluation of APC tools at Central Counterparties (CCPs) and the resulting market dynamics. Now, in 2026, the industry has shifted from merely identifying procyclicality to rigorously measuring the effectiveness of the tools designed to dampen it. That shift is happening against a live market backdrop: conflict-related disruption in the Middle East, continued sensitivity around energy and shipping corridors, persistent trade-policy uncertainty, and the structural expansion of central clearing in rates and Treasury-related markets. Together, these developments make cleared derivatives more central to global risk transmission than ever. They also make it more important to understand not only whether margin rises in stress, but whether CCPs have calibrated their APC frameworks in a way that allows them to absorb shocks from a stronger starting position built during calmer periods, thereby reducing the risk of destabilising effects when the next real-world stress event arrives.

2.4 JURISDICTIONAL COMPARISONS: A GLOBAL MARGIN APPROACH

The approach to margining is not uniform, and rightly so, given the differences in global market dynamics, jurisdictions and regulation. This report compares the methodologies of major CCPs across the Americas, APAC and EMEA.

⁵ International Monetary Fund, "How the War in the Middle East Is Affecting Energy, Trade, and Finance," IMF Blog, 30 March 2026.

- EU/UK (EMIR Framework): Focuses heavily on the **three pillars** of APC tools (25% buffers, 10-year lookbacks, or floors) – further explored in section 5.
- US (CFTC/SEC Framework): Often emphasizes a "coverage-first" approach, where safety and the prevention of under-margining are the primary drivers, with APC measures integrated into the model's overall conservatism.
- Asia Pacific (JFSA/SFC-HKMA Frameworks): Generally, APAC CCPs follow a principles-based approach similar to the US, with APC measures embedded in model design rather than prescribed by regulation. A distinctive feature in this region is the emphasis on predictability and communication, with a number of CCPs proactively sharing margin impact simulations with clearing members ahead of scheduled market events. Further explored in section 5.

By comparing several different CCPs, this report identifies how different regulatory mandates translate into real-world margin stability for clearing members, and irrespective of the differences, the outcomes in practice reach the same overall goal of market stability and steady changes in initial margin over time.

2.5 THE 2025 POLICY PROPOSALS: A REVIEW

In January 2025, the Basel Committee on Banking Supervision (BCBS), the Committee on Payments and Market Infrastructures (CPMI), and the International Organization of Securities Commissions (IOSCO) published the definitive final report: *Transparency and responsiveness of initial margin in centrally cleared markets*.

The report set forth **10 key policy proposals** aimed at standardising transparency for CCPs and CMs. In summary, the proposals call for:

1. **Availability of Margin Simulators:** CCPs should provide margin simulation tools to all clearing members and, where feasible, their clients.
2. **Functionality of Simulators:** Margin sim tools must include the ability to calculate margin requirements for key historical and current hypothetical stress scenarios and include both core margin and major add-ons.
3. **Detailed Margin Model Disclosures:** CCPs should provide clear explanations of their margin models and the calibration of key parameters like lookback periods and liquidation horizons to CMs and (where feasible), clients.
4. **APC and Responsiveness Transparency:** CCPs must publicly disclose and describe the specific anti-procyclicality (APC) tools they use and the model components that drive margin responsiveness.
5. **Enhanced Public Quantitative Disclosures (PQDs):** PQD standards are expanded to include data splits between core margin and add-ons, backtesting results for relevant contracts, and detailed variation margin data.
6. **Standardized Responsiveness Metrics:** CCPs are asked to compute and disclose a new standardized measure of margin responsiveness to allow for better comparison and monitoring. This should be included in the current PQD framework for the most relevant contracts.
7. **Model Performance Governance Framework:** CCPs must define an internal framework to assess the balance between margin coverage, cost, and responsiveness, seeking input from market participants when making material changes.
8. **Governance of Manual Overrides/Discretion:** CCPs to provide clear procedures for when they use expert judgment to override model outputs, including ex-post reviews and reporting the size/duration of overrides to authorities.
9. **Clearing Member to Client Transparency:** CMs must help clients understand their margin requirements, provide notice of changes to client-specific margins, and provide their own simulators if their requirements deviate from the CCP's.
10. **Clearing Member Disclosure to CCPs and Relevant Authorities:** CMs should disclose relevant information to the CCPs they belong to, and local authorities, regarding their exposures and liquidity needs across multiple CCPs.

For this Altair & Alang Featured Insight, we intend to explore the topic of APC measures in more detail.

3. PURPOSE OF THIS REPORT

The purpose of this report is to evaluate the current state of APC measures and implementation. It explores the procyclicality problem, evaluates the real-world performance of margin models through backtesting data, and provides a cross-jurisdictional comparison of how CCPs balance the need for "adequate coverage" against the desire for "stable margin".

The SEC's June 2026 mandate for central clearing of U.S. Treasury repo transactions is expected to push the share of centrally cleared repo from roughly 35% to over 84% of all trades.⁶ New entrants are applying to clear repos alongside FICC, which means more CCPs collecting margin, more data being generated, and more need for comparative analysis across clearing houses that operate under different models, in different jurisdictions, clearing different products.

At the same time, the Office of Financial Research (OFR) - a U.S. government research body - has flagged a basic problem: the OFR has stated that the data designed to make CCP risk visible is not easy to disseminate and actually use. Their 2026 working paper on CCP liquid resources found that CPMI-IOSCO Public Quantitative Disclosures (PQD) data is "*difficult to work with because of non-standardised CCP responses*".⁷ In other words, the disclosures exist, but comparing them across CCPs requires a significant standardisation effort. What is the reality of accessing, aggregating and interpreting CCP PQDs? What are the core challenges and how can market participants ultimately help each other in an effort to improve the standardization and comprehension of CCP data?

This matters because *how* CCPs set and adjust their margin requirements during stress and the procyclicality question is no longer an academic exercise. Three developments have brought it to the forefront:

- **January 2025:** Global regulators (BCBS, CPMI, and IOSCO) published ten policy proposals on margin transparency – the most significant set of recommendations since the Principles for Financial Market Infrastructures (PFMIs) were released into the world during 2012.⁸ The proposals focus on making margin models more transparent and predictable, rather than prescribing specific tools, enhanced disclosures APC tools, enhancing CCP PQD, while the last two proposals call for clearing members (CMs) to provide more transparency to their clients and CCPs related to exposures, potential losses and liquidity needs from their multiple CCP participation.
- **Mid-2025:** The Bank of England (BoE) went further, requiring UK-supervised CCPs to define explicit limits on how much margin can spike during stress — an outcomes-based approach that no other jurisdiction has yet adopted.⁹
- **April 2025:** The Liberation Day tariff announcement shock in the U.S. generated record cash demands across derivatives markets with higher-than-expected variation margin (VM) calls, exceeding even COVID-era levels, and stress-tested every framework in real time. This was another result of the unpredictability of “Trump Risk” with large scale policy shifts.

This Featured Insight examines three dimensions of this challenge:

- ***The Regulatory Architecture:*** How international and national regulators are shifting from advising specific tools to demanding transparency and outcomes-based supervision of margin models.
- ***Same Rules, Different Outcomes:*** A cross-CCP comparison showcasing how major clearing houses, operating under the same international standards and guidance, produce remarkably different margin behaviour during stress periods, however remained resilient during geopolitical and sudden Trump policy changes.
- ***PQD Analytics - What PQD Data Actually Reveals:*** How PQD data can be used to investigate and understand where CCP data shows similarities and differences in APC design, margin behaviour, and disclosure patterns, and the analytical challenges that still remain.

⁶ Patel, K., "Central Clearing and the Transformation of U.S. Treasury Repo Market Structure," Federal Reserve Bank of Chicago Working Paper 2026-02, 2026.

⁷ Heilbron, E. and Schwartz, H., "CCP Management of Liquid and Prefunded Resources," OFR Working Paper 26-04, 2026.

⁸ BCBS-CPMI-IOSCO, "Transparency and Responsiveness of Initial Margin in Centrally Cleared Markets: Review and Policy Proposals," January 2025.

⁹ Bank of England, Supervisory Statement on CCP Procyclicality Tolerances, 2025; Breedon, S., speech on macroprudential approach to CCP supervision, May 2025.

4. MARGIN IN PERSPECTIVE

4.1 STRESS DYNAMICS: IM VS. VM IN CRISIS

To understand the impact on liquidity, this Featured Insight report examines the interplay between **Initial Margin (IM)** and **Variation Margin (VM)** data during stressed periods. Using data from the PQDs, we observe:

- **VM as the “pay-now” component of market stress:** During stress, VM becomes the immediate requirement that transmits market moves into settlement-currency demands across participants. VM is generally due in the settlement currency of the relevant contract, meaning that price moves are converted directly into same-day or next-day funding needs in that currency. The average VM calls from global CCPs, reflecting realised profits and losses, may be smaller in absolute value than total IM but often exceed IM increases in percentage terms, indicating that IM changes at CCPs are comparatively more stable. Furthermore, this cash-based framing may evolve for some contracts if CCPs begin using stablecoins or other tokenized assets for settlement, though the core *economic function* of VM would remain the same: that is, transferring realised gains and losses promptly through the CCP.¹⁰
- **IM as the forward-looking stressor:** While VM settles the daily MTM, the recalibration of IM models creates the requirement for market participants pay more IM. However, what happens in reality is that the CCP will often inform market participants ahead of time of any changes, giving notice and advance warning. We analyse how different APC tools affected the speed of IM increases from 2015 – 2025 for six selected CCPs (based on a geographical mix).

4.1.1 INITIAL MARGIN ANALYSIS

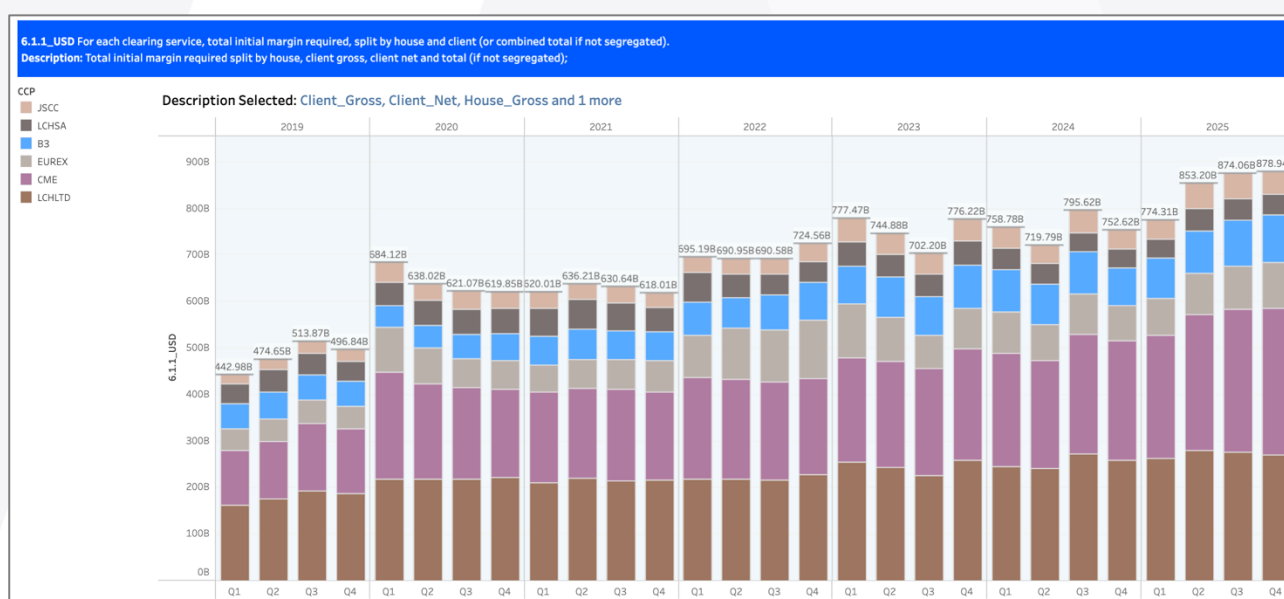


Figure 1: Total Initial Margin (Required), (all Client and House accounts) across 6 major CCPs, 2019–2025. Source: CPMI-IOSCO PQDs item 6.1, USD equivalent values.

The chart above illustrates the scale of the challenge. Total initial margin requirements across just six major CCPs have more than doubled in under a decade, now approaching USD 900B for the top six CCPs (by IM required). This comparison should be read as indicative rather than precise: the CCPs included clear different mixes of products — repo, FX swaps, listed derivatives, and OTC interest rate products all carry different margin dynamics and are not directly comparable on a like-for-like basis — so the aggregate figure illustrates the overall scale and trajectory of margin growth across the system rather than a strict apples-to-apples comparison between individual CCPs. The same caveat applies later in this report where default fund contributions are compared across CCPs. With that caveat in mind, it is nonetheless worth noting that the margin increase is steady with no major jumps (with the exception of the Covid-19 crisis during 2020 Q1). When margins of this magnitude adjust during a crisis, the cash flow implications ripple through every clearing member, every client, and every connected market. Another important driver is open interest. During periods of stress, higher trading activity, new contract positions, and portfolio adjustments can increase IM simply because there are more open positions to margin. Open interest refers to the total number of

¹⁰ CPMI-IOSCO Streamlining variation margin in centrally cleared markets – examples of effective practices

outstanding futures contracts held by market participants at the end of the trading day. It is often used as an indicator of market participation and the strength behind price trends. For example, unlike a company's issued shares, which are generally fixed, open interest changes daily as new trades are opened and existing positions are closed.¹¹

4.1.2 AVG. TOTAL VARIATION MARGIN ANALYSIS

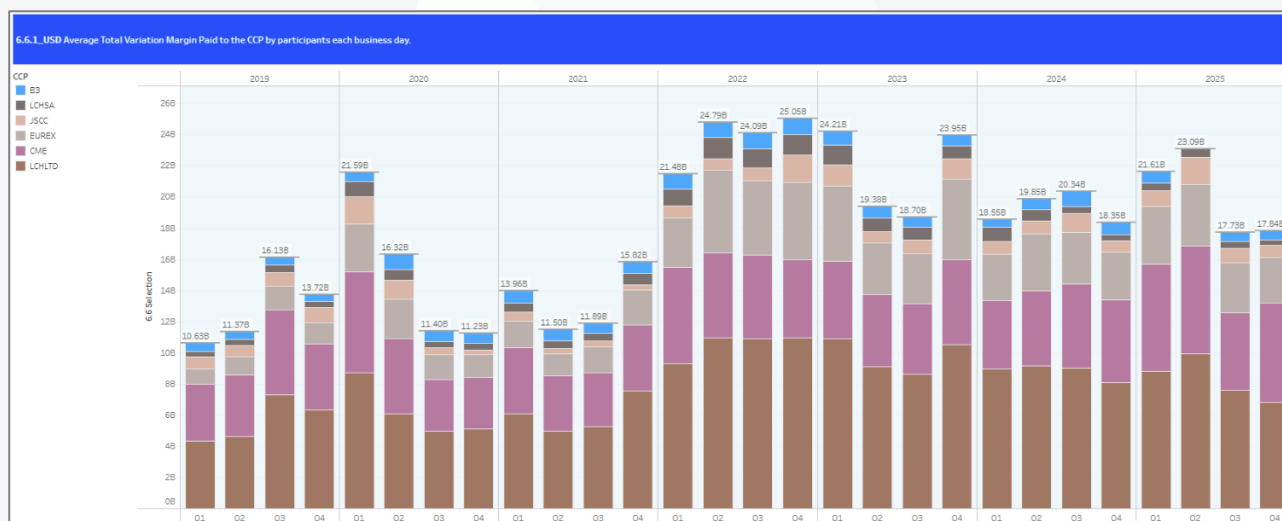


Figure 2: Total Avg. Variation Margin Paid to the CCP by Participants Each Business Day, across 6 major CCPs, 2019–2025. Source: CPMI-IOSCO PQDs item 6.6.1, USD equivalent values.

Figure 2 above highlights that variation margin (VM) is often the most immediate channel through which market stress is transmitted into the cleared ecosystem. While initial margin is designed to be forward-looking and, increasingly, dampened by anti-procyclicality (APC) tools, VM reflects realised mark-to-market moves and therefore translates volatility directly into daily cash obligations. The pattern from 2019 to 2025 suggests not only sharp event-driven spikes during periods of market stress, but also a structurally higher baseline in more recent years, consistent with a market environment characterised by more frequent repricing of macro, geopolitical, and policy risk.

This distinction matters since large VM flows do not necessarily indicate a weakness in CCP risk management; on the contrary, they demonstrate that central clearing is functioning as intended by transferring profit and losses promptly and transparently. However, they also show why the procyclicality debate cannot focus on IM alone: even where APC tools help smooth initial margin, the most immediate liquidity pressure on clearing members and clients may still come from variation margin. However, as we see below, CCP executive decisions during periods of significant market stress are a practical method for successfully managing risk more effectively.

¹¹ <https://www.cmegroup.com/education/courses/introduction-to-futures/open-interest>

5. THE PROCYCLICALITY PROBLEM – STRIKING THE RIGHT BALANCE

As mentioned in the previous section, CCPs collect two main types of margin from their clearing members. Initial margin (IM) is collected to cover potential future exposure arising from possible changes in market value of open positions. It reflects the CCP's risk-based margin model output and is determined using parameters such as volatility, correlation, product type, and confidence intervals. This figure represents the theoretical exposure that must be collateralised to maintain coverage at the targeted confidence level (e.g., 99%). Variation margin (VM) on the other hand, is the daily (or intraday) cash settlement that reflects actual changes in portfolio value, thereby the CCPs assumes no market risk itself. In this way, variation margins function as a "pay-as-you-go" mechanism for mitigating counterparty risk.¹² It is collected from members whose positions have lost money and paid to those who have gained – effectively the margin flow from market participants through the CCP.

The procyclicality problem can arise from the interaction between these margin demands with respect to market behaviour, volatility and drastic market moves.

5.1 THE PROCYCLICAL FEEDBACK LOOP

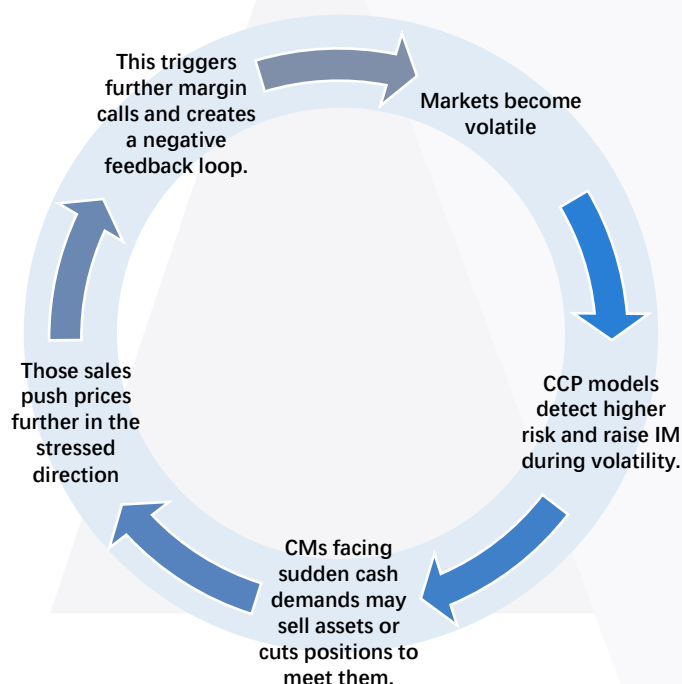


Figure 3: The Procyclical Feedback Loop

During March 2020, global market participants experienced this as the so called "*dash for cash*".¹³ However, interestingly, in the cleared ecosystem, while aggregate initial margin across the 6 major CCPs (stated previously) rose by an estimated 38%, this figure was dwarfed by the Variation Margin flows which reached an increase of almost 60%, coupled with the VIX increasing 490% between January and March 2020.

In contrast, during the first quarter of 2022, global financial markets were defined by two major shocks: the Russian invasion of Ukraine in late February and an aggressive pivot towards higher interest rates by global central banks to combat high inflation. This in turn, sent commodity prices soaring to one of their strongest quarters on record, surging as the war disrupted global supplies. Aggregate IM across the 6 major CCPs increased 12% while VM flows increased 36%.

The international standards recognise this tension directly. Principle 6 of the CPMI-IOSCO Principles for Financial Market Infrastructures states that a CCP should, to the extent practicable and prudent, adopt forward-looking and relatively stable margin requirements designed to limit the need for destabilising procyclical changes.¹⁴ CCPs already build up IM during "peacetime" when volatility is low, which gives them enough of a buffer to weather out more serious stressed events.

¹² Nicole Abruzzo and Yang-Ho Park, *An Empirical Analysis of Futures Margin Changes: Determinants and Policy Implications*, September 2014, Finance and Economics Discussion Series Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington, D.C.

¹³ Sir Jon Cunliffe, "Learning from the Dash for Cash — Findings and Next Steps for Margining Practices," February 2022.

¹⁴ CPMI-IOSCO, *Principles for Financial Market Infrastructures*, April 2012, Principle 6, Paragraph 3.6.10.

In practice, this creates a genuine dilemma with no cost-free solution:

- **The Margin Trilemma:** CCPs must balance **risk coverage, low cost, and relatively low reactivity**. If they do not raise margins during volatility, they would be under-collateralised, potentially leading to a systemic collapse if a major member defaulted. A margin model that responds too slowly avoids the procyclical problem entirely, but may leave the CCP undercollateralised at the worst possible moment. Shown below in **figure 4**.
- **Transparency and Predictability:** By using predefined and sound APC measures, while disclosing their models, CCPs help market participants predict and prepare for margin calls, reducing the "shock" factor that drives panic selling. CCPs already provide various transparency in the form of qualitative and quantitative disclosures, but our question is, are they being fully utilised?
- **Every CCP navigates this trade-off differently. And that is where the interesting divergence begins.**

5.1.1 THE MARGIN TRILEMMA

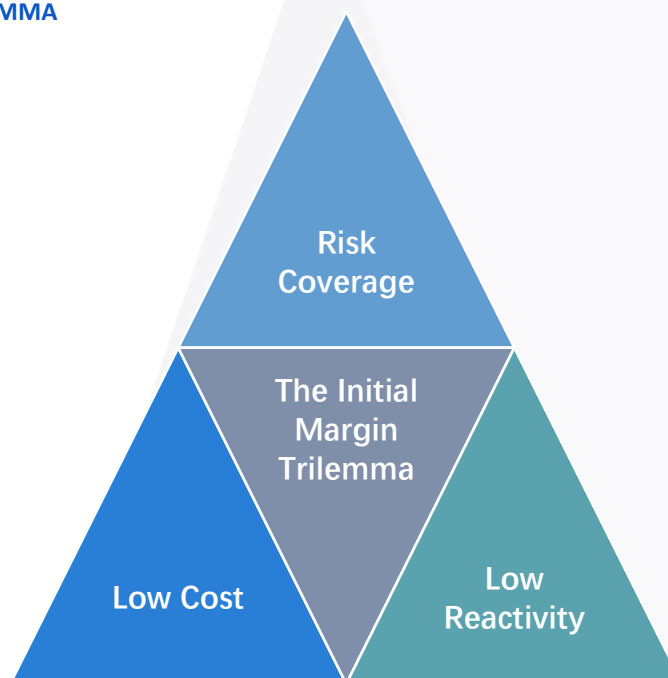


Figure 4: The Initial Margin Trilemma for CCPs – A Balancing Act

5.2 WHY MARKET PARTICIPANTS SHOULD TAKE NOTICE

For a market participant acting as a clearing member, unpredictable margin spikes create a liquidity management problem on two fronts: (1). the participant needs to fund margin calls from its own clearing clients, while simultaneously; (2). managing its own balance sheet and regulatory capital. When variation margin and initial margin demands jump together (as they typically do in a genuine stress event, since rising volatility drives IM higher through the model while the underlying price moves generating that volatility simultaneously trigger VM calls) the operational and treasury strain can be pronounced.¹⁵

For the buy side, the problem is sharper still. A pension fund holding IRS as a hedge may find itself scrambling for cash at exactly the moment when market stress has made its underlying portfolio more volatile. The UK gilt crisis of September 2022 illustrated this vividly: liability-driven investment (LDI) funds faced VM calls on their interest rate derivatives, driven by the scale and speed of the move in gilt yields, at the same time as the value of the gilt collateral they held to meet those calls was itself falling.¹⁶ In many cases, elevated volatility was also pushing IM requirements on the same positions higher, compounding the cash and collateral demands rather than sitting apart from them. The margin system was not the cause of the crisis, but the combined effect of rapid VM calls and rising IM, landing at the same moment as a fall in the value of the collateral available to meet them; amplified the liquidity pressure on participants who were already under strain.

¹⁵ Hypothetical example calculated from historical PQD data for IM required (6.1.1) and (6.6.1) for 6 major CCPs

¹⁶ Bank of England, [Financial Stability Report, December 2022](#).

6. THE REGULATORY ARCHITECTURE AND APC TOOLS

The regulatory response to procyclicality has evolved significantly since 2020, and the direction of travel is clear: away from prescribing specific tools, **towards greater transparency and measurable outcomes.**

6.1 EUROPE: THE THREE-TOOL “MENU DU JOUR”

The European approach under EMIR remains the most prescriptive globally. EU-authorised CCPs must choose from one of three anti-procyclicality options:¹⁷



- **Apply a 25% buffer** on top of calculated margin requirements. The "25% Buffer" (Article 28(1)(a) RTS) is a common APC tool that scales margin by at least 25% during low volatility. This surplus acts as a shock absorber; during stress, the CCP "exhausts" the buffer to prevent sudden, destabilising margin hikes.
- **Assign at least 25% weight** to stressed observations in the historical data used to calibrate the model. The Article 28(1)(b) RTS option requires a 25% minimum weight for stressed observations in lookback periods. By embedding past crises into current requirements, this tool prevents margin from bottoming out, ensuring a smoother transition and smaller calls during sudden volatility spikes.
- **Ensure margins do not fall below** a floor calibrated to a ten-year lookback that includes stressed periods. The "Margin Floor" (Article 28(1)(c) RTS) sets a minimum margin

based on a 10-year historical lookback. By preventing margin from falling too low during quiet periods, it ensures that any subsequent increase starts from a higher baseline, dampening the shock of sudden volatility.

Most EU CCPs have opted for the 25% buffer, which is the simplest to implement. It means margins during calm periods are higher than the pure model output, which in theory dampens the spike when volatility arrives. But the buffer is static. It does not adapt to changing risk dynamics, and it offers no guarantee that a 25% cushion will be sufficient when a genuinely severe shock hits. A 25% buffer would not have fully absorbed the margin increases seen during March 2020 or April 2025.

6.1.1 THE JANUARY 2025 GLOBAL PROPOSALS

The landmark January 2025 BCBS-CPMI-IOSCO report represents a strategic shift.³ Instead of advising which Anti-procyclicality (APC) tools CCPs should use, the ten proposals focus on four themes:

- **Disclosure:** CCPs should publicly describe their APC tools and the model components that affect margin responsiveness.
- **Simulation:** CCPs should provide margin simulation tools so clearing members, and their clients can estimate future margin calls under different scenarios.
- **Standardised metrics:** CCPs should report a new, standardised measure of margin responsiveness through the PQDs — including the largest margin moves over a defined observation window.
- **Governance:** CCPs should establish internal frameworks for assessing how their model balances risk coverage against margin stability, and disclose those frameworks publicly.

Proposal 6 is particularly significant for data-driven analysis. It will, for the first time, create a consistent basis for comparing margin responsiveness across CCPs. However, ISDA has flagged a practical concern: the initial one-year

¹⁷ [EMIR Regulatory Technical Standards](#)

observation window means the first round of data will only capture relatively benign markets. Meaningful data about actual stress episodes will only accumulate after the next crisis.¹⁸

This is an area where historical PQD data can fill the gap. Furthermore, we should also keep in mind the challenges that lie with interpreting these new disclosures across CCPs. The new responsiveness metric requires each CCP to identify its "most relevant products" for reporting purposes, but what counts as most relevant at a CCP like LCH Ltd will look very different from a CCP like B3. Similarly, the metric captures the largest margin increase over a defined number of business days, but does not control for what exactly drives that increase. As Section 7 of this report demonstrates with backtesting data, headline numbers across CCPs can diverge dramatically for structural reasons that have nothing to do with model quality. The same will be likely true of the new responsiveness metrics.

6.2 THE BANK OF ENGLAND (BOE): OUTCOMES OVER TOOLS

6.2.1 REGULATORY FRAMEWORK

The BoE published its Draft Supervisory Statement on CCP Margin (the "SS") on 18 July 2025, applicable to all BoE-supervised CCPs and UK entities seeking CCP authorisation.¹⁹ The SS sits within the BoE's broader post-Brexit programme of transferring CCP-facing requirements from UK EMIR into its own FMI Rulebook, using rule-making powers conferred by the Financial Services and Markets Act 2023.²⁰ It must be read alongside the Margin Requirements Part of the Rulebook (rules 3.17–3.27 on procyclicality) and the Review and Testing of Models and Parameters Part (rule 3.2).²¹ Final rules are expected in the second half of 2026, with a standard six-month implementation period thereafter.²²

6.2.2 POLICY OBJECTIVE

The BoE's stated objective is for CCPs to consider in full the procyclical impacts of margin model design and model revisions, and to limit the need for destabilising, procyclical margin changes to the extent practicable and prudent. The BoE's Deputy Governor Sarah Breeden has framed the underlying challenge as a structural "trilemma" between margin coverage, margin cost and margin reactivity.²³ The SS reflects this thinking, and expects CCPs to manage all three dimensions holistically rather than optimising for procyclicality reduction alone.

6.2.3 EXPLICIT APC MEASURES

The UK regime prescribes explicit, enumerated APC measures in binding rules; this is not a general principles-based guide. Rule 3.18(1) of the Margin Requirements Part requires each CCP to employ at least one of three options. These three options mirror those under the EU EMIR framework, now restated in the BoE's own Rulebook. The SS provides prescriptive guidance on each: CCPs employing the margin buffer for non-linear products must apply it at the risk-factor level rather than by scaling aggregate margin by 25%; CCPs employing the floor must not use differential weighting within the lookback period to undermine its rigour, and must compute it at the same frequency as regular margin calculations. Whichever measure is adopted, it must cover all material risk factors capable of producing large step-changes in margin, which may include price shifts, FX shifts, implied volatility shifts, maturity spreads and portfolio margin offsets.

6.2.4 PROCYCLICALITY ASSESSMENT FRAMEWORK AND GOVERNANCE

Beyond APC measure selection, each CCP must maintain a formal analytical framework for assessing procyclicality in the context of both margin coverage and cost (rule 3.20). The framework must specify: (i) the CCP's tolerance for procyclicality, expressed as a maximum anticipated change in initial margin beyond which a review is triggered; (ii) quantitative metrics for assessing procyclicality, assessed holistically across short- and long-term margin stability; (iii) assessment frequency, with daily monitoring against the procyclicality tolerance required as a minimum; (iv) potential remedial actions; and (v) governance arrangements for reporting outcomes and approving actions. Tolerance thresholds must not impose a cap on margin increases or impair coverage adequacy. Any material model revision resulting from a procyclicality review must be independently validated and subject to risk committee oversight before

¹⁸ ISDA, "Paper on Proposal 6 of BCBS-CPMI-IOSCO Report on Margin Transparency," November 2025.

¹⁹ Bank of England, *Draft Supervisory Statement on CCP Margin*, 18 July 2025 ("SS"), 1.1. Available at: <https://www.bankofengland.co.uk/paper/2025/ss/draft-supervisory-statement-on-ccp-margin>

²⁰ Bank of England, *Ensuring the Resilience of CCPs* (Consultation Paper), 18 July 2025, 1.1–1.3. Available at: <https://www.bankofengland.co.uk/paper/2025/cp/ensuring-the-resilience-of-ccps>; Financial Services and Markets Act 2000, as amended by the Financial Services and Markets Act 2023.

²¹ 1.3; Bank of England FMI Rulebook, *UK Central Counterparties Instrument* [2025], Margin Requirements Part, rules 3.17–3.27; Review and Testing of Models and Parameters Part, rule 3.2.

²² Bank of England, *Ensuring the Resilience of CCPs*, 1.29 (consultation closed 18 November 2025); final rules expected H2 2026.

²³ Sarah Breeden, "A system-wide approach to system-wide resilience: CCPs and their users," speech at ISDA Annual General Meeting, Amsterdam, 14 May 2025

implementation. CCPs must notify the BoE of their framework, parameter choices and any breach of their procyclicality tolerance.

6.2.5 NATURE OF THE REGIME

The UK APC framework is best characterised as a hybrid regime: explicit, rule-based APC measures are prescribed in the Rulebook, while the SS layers detailed, principles-informed supervisory expectations on how those rules must be applied operationally. The framework reflects the BoE's alignment with BCBS-CPMI-IOSCO international guidance on margin transparency and procyclicality, while exercising its new domestic rule-making powers to tailor requirements for the UK market.

6.3 US REGULATORY: OPEN KITCHEN – FLEXIBLE APPROACH

If Europe's EMIR is a "menu du jour" where CCPs pick one of three named dishes, the US approach is closer to an open kitchen. Regulators set the principles-based approach to APC measures, explaining to CCPs that their margin models should limit destabilising, procyclical changes "to the extent practicable and prudent", and leave the recipe to the chef. There is more flexibility here for the CCP to decide how best to implement this based on the principles.²⁴

The US regulatory framework splits across two regulators, each covering different corners of the clearing landscape:

- CFTC Regulation 39.13 governs derivatives clearing organisations like CME and ICE Clear US. It requires margin models that are risk-based, regularly reviewed, and backtested, but does not prescribe specific APC tools. The regulation sets the destination: margins should be adequate to cover potential losses without amplifying market stress. How to get there is the CCP's call.²⁵
- SEC Rule 17Ad-22(e)(6) does something similar for securities-side covered clearing agencies like OCC, FICC, and NSCC. It requires written policies and procedures designed to cover credit exposures through margin, including consideration of whether the methodology limits procyclical changes. Again, the rule describes the outcome it expects rather than dictating the mechanism.²⁶

In practice, this means US CCPs tend to build their APC features directly into the margin model rather than layering them on top. CME's SPAN 2 framework is a historical VaR model with an explicit stressed VaR component and volatility floors designed to avoid procyclical changes in margin.²⁷ OCC's STANS system uses GARCH-based variance forecasting with bounded parameters, what OCC calls "control settings" to stop the model overreacting to sudden volatility spikes.^{28, 29} FICC's clearing fund methodology uses a sensitivity-based VaR with a ten-year lookback incorporating a stress period, together with a VaR floor; FICC is explicit that this design draws on the same anti-procyclicality concepts as EMIR.^{30, 31} NSCC applies a broadly similar VaR-based margin component for US cash equities.³²

6.4 ASIA REGULATORY: OPEN KITCHEN WITH THE CHEF'S TABLE

Asia-Pacific jurisdictions have broadly taken a principles-based route similar to the US, with a characteristic twist: a noticeable emphasis on transparency and predictability as part of the APC toolkit. If Europe is the set menu and the US is the open kitchen, parts of Asia are the open kitchens with a dedicated chef's table, so you can watch what they are making.

6.4.1 JAPAN: THE CHEF'S BRIEFING

The Japan Financial Services Agency supervises JSCC under its Comprehensive Guidelines for Supervision of Financial Market Infrastructures, which bring the PFMI into Japanese regulation.³³ JSCC's toolkit covers three main areas:

- **Stress scenarios:** Additional stressed market scenarios are layered into the margin calculation beyond the baseline model output.
- **Volatility floors:** Minimum volatility thresholds prevent margins from dropping too low during calm periods, building a cushion ahead of the next shock.

²⁴ CFTC MRAC, *CCP Margin Methodologies Recommendations*, February 2021

²⁵ CFTC, *Regulation 39.13: Risk Management* (17 CFR § 39.13).

²⁶ SEC, *Standards for Covered Clearing Agencies*, Release No. 34-78961, September 2016.

²⁷ CME Group, *SPAN 2 Margin Framework*.

²⁸ OCC, *STANS Margin Methodology Overview*.

²⁹ SEC, *OCC Proposed Rule Change on GARCH Parameter Control Settings* (SR-OCC-2024-001), January 2024.

³⁰ FICC, *Treasury Clearing: Risk Management FAQ*.

³¹ FICC, *GSD Clearing Fund Methodology Overview*.

³² NSCC, *CPMI-IOSCO Disclosure Framework*.

³³ Ontario Securities Commission, *JSCC Application for Exemption* (describes JFSA supervisory framework), July 2024.

- **Minimum margin requirements:** Hard floors ensure that no clearing member's margin falls below a set level regardless of model output.

These tools are familiar across jurisdictions. What sets JSCC apart is its approach to communication. Ahead of known high-impact events such as BoJ policy meetings or major index rebalances, JSCC runs margin simulations and shares projected impacts with clearing members in advance.^{34,35} When the BoJ adjusted its yield curve control policy in December 2022, JSCC's intraday margin call was not a shock: it had been spelled out in the published rulebook. It is the same instinct now reflected in the January 2025 BCBS-CPMI-IOSCO proposals on margin simulation tools, the recognition that surprise is often more destabilising than the number itself.³⁶

6.4.2 HONG KONG: ONE KITCHEN, ONE INSPECTOR

HKEX operates clearing infrastructure across two distinct regulatory jurisdictions. Within Hong Kong, its four recognised clearing houses: Hong Kong Securities Clearing Company (HKSCC), HKFE Clearing Corporation Limited (HKCC), The SEHK Options Clearing House (SECH), and OTC Clearing Hong Kong (OTC Clear); fall under the direct supervisory authority of the **Securities and Futures Commission (SFC)** pursuant to the Securities and Futures Ordinance (Cap. 571). HKCC serves as the central counterparty for futures and options on futures traded on the Hong Kong Futures Exchange, making it particularly central to any analysis of margin design and procyclicality within the Hong Kong market. In London, LME Clear; the central counterparty for the London Metal Exchange, acquired by HKEX in 2012 - operates under an entirely separate regulatory framework, supervised by the Bank of England under UK law. Notwithstanding HKEX's common ownership of both clearing operations, the two perimeters are legally and regulatorily distinct: the SFC's oversight does not extend to LME Clear, and the Bank of England exercises no jurisdiction over the Hong Kong CCPs.

It is important to note that the Hong Kong Monetary Authority (HKMA) does not exercise direct supervisory authority over any of HKEX's CCPs, including the Hong Kong-domiciled entities. Its role is principally that of systemic risk monitoring and financial stability authority: thus, the HKMA engages with the SFC through established inter-agency coordination mechanisms - notably the Council of Financial Regulators - and retains an interest in CCP resilience insofar as clearing infrastructure intersects with broader monetary and banking system stability. This distinction matters: the SFC sets and enforces regulatory requirements for the Hong Kong CCPs; the HKMA's influence operates at the macro-prudential and coordination layer rather than at the level of direct supervision.

The SFC's approach to the Hong Kong CCPs is principles-based, with no specific mandated menu of APC tools prescribed by rule. HKEX's margin methodology nonetheless addresses procyclicality through three principal mechanisms:³⁷

- **Volatility smoothing:** Dampens the impact of short-term volatility spikes on margin calculations, preventing abrupt jumps in requirements that could amplify stress.
- **Stress scenario integration:** Incorporates adverse market conditions into the margin model, ensuring that requirements already reflect potential tail scenarios before they materialise.
- **Margin floors:** Sets minimum thresholds to prevent margins from eroding excessively during prolonged periods of low volatility, thereby preserving a meaningful buffer ahead of market dislocations.

Across the wider HKEX group, LME Clear (LMEC) has followed a distinct regulatory trajectory. The Bank of England's post-2022 review of LMEC's nickel market disruption intensified its scrutiny, rather than identifying deficiencies in LMEC's margin or APC framework specifically, and LMEC's position is that its APC controls were already effective at the time. Independently of that episode, in February 2025 LMEC introduced refined anti-procyclicality controls alongside default fund enhancements, reflecting an evolution toward mechanisms they and the market judged to work better, rather than a response to shortcomings exposed by the nickel crisis. While these developments are not directly attributable to SFC oversight, they are relevant context for understanding how procyclicality risk management within the HKEX group has evolved across jurisdictions and how group-level risk culture and governance may develop over time.³⁸

³⁴ JSCC, *Margin Overview*, Japan Exchange Group.

³⁵ JPX, *Migration to New Margin Calculation Method (JSCC-VaR)*, Working Paper Vol. 45, 2024.

³⁶ BCBS-CPMI-IOSCO, *Transparency and Responsiveness of Initial Margin in Centrally Cleared Markets*, January 2025.

³⁷ FIA, *Next Generation Risk Management* (HKEX margin methodology), 2023.

³⁸ HKEX, *2025 Interim Results Announcement* (LME Clear APC controls), August 2025.

7. SAME RULES, DIFFERENT OUTCOMES

The most striking finding from cross-CCP analysis is how much margin behaviour diverges despite CCPs operating under the same or closely aligned international standards. This divergence is notable given that many of the CCPs discussed in this report are formally recognised by EU regulators despite these differences in approach. Under Article 25 of EMIR, ESMA operates a two-tier regime for third-country CCPs: Tier 1 CCPs (assessed as not systemically important to the EU) are recognised largely on the basis of deference to their home regulator, provided the European Commission has adopted an equivalence decision for that jurisdiction's framework and ESMA has cooperation arrangements in place with the home authority. Tier 2 CCPs (those assessed as systemically important, or likely to become so, for EU financial stability) face a materially higher bar: they must comply with core EMIR requirements on an ongoing basis, either directly or through "comparable compliance," under which ESMA assesses whether adherence to the CCP's home-country rules also satisfies the equivalent EMIR standard, rather than requiring the CCP to run a parallel EMIR-compliant framework. The fact that CCPs with materially different APC philosophies can each be recognised, whether on a deference basis or via comparable compliance, suggests that both the international standards and ESMA's own equivalence framework are outcomes-based rather than prescriptive of any single methodology. The table below compares five major CCPs and their approaches to managing procyclicality. They reflect fundamentally different philosophies about how to manage the trade-off between risk sensitivity and market stability, based on their specific markets and jurisdiction:

CCP	Jurisdiction/Regulator	Margin Model	APC Approach	Key Feature
B3	Brazil - CVM	Full portfolio simulation (CORE) with 10,000 + scenarios ³⁹	No separate APC tool: instead, the model itself is set to a much higher confidence level (99.96% vs the standard 99%) ^{40,41}	Margins are structurally higher in calm periods, so the spike during stress is proportionally smaller
CME	US - CFTC	Historical VaR with volatility scaling (SPAN 2) ⁴²	Keeps stressed historical scenarios in the model permanently via SVaR component; volatility floors prevent margins dropping below stress-informed levels ⁴³	Margins have a built-in floor that reflects past crises, even during calm markets
EUREX	EU - ESMA	Historical simulation with volatility scaling ⁴⁴	Applies a 25% margin buffer, as required by EU regulation; also incorporates stress-period VaR floors ⁴⁵	The buffer is simple and prescribed by regulation; Eurex also adds stress-period floors to enhance coverage
JSCC	Japan - JFSA	Portfolio simulation / Expected Shortfall ⁴⁶	Focuses on predictability: simulates the margin impact of upcoming events (e.g. central bank meetings) and shares projections with clearing members in advance	Solves the unpredictability problem through communication rather than model design
LCH Ltd	UK - BoE	Historical simulation: expected shortfall based on filtered historical simulation with 10-year lookback ⁴⁷	Similar buffer to Eurex, but now also required by the BoE to set explicit limits on how much margin can spike during stress ^{48,49}	First CCP to operate under an outcomes-based procyclicality framework

³⁹ B3 Website, "Margin requirements and collateral deposits"

⁴⁰ B3 PFMI Disclosure (2020)

⁴¹ Maruyama, A. and Cerezetti, F., "Central counterparty anti-procyclicality tools: a closer assessment," *Journal of Financial Market Infrastructures*, Vol. 7, No. 4 (2019)

⁴² CME Group, "SPAN 2 Methodology and Functionality"

⁴³ CME Group, "SPAN Methodology Overview"

⁴⁴ ECB Occasional Paper No.314, "CCP initial margin models in Europe"

⁴⁵ Eurex Clearing, "Forward looking margin simulations into periods of stress" (2022)

⁴⁶ Risk.net, "Clearing house of the year: JSCC" (October 2024)

⁴⁷ LCH Ltd, "Margin Methodology"

⁴⁸ Bank of England, "Draft supervisory statement on CCP margin" (July 2025)

⁴⁹ Bank of England, "Ensuring the resilience of CCPs" Consulting Paper (July 2025)

7.1 QUANTITATIVE INDICATORS: PQD DISCLOSURE 6.5 AND BACKTESTING REALITY

A core component of this evaluation is the analysis of Public Quantitative Disclosures (PQDs), specifically Item 6.5: Results of backtesting of Initial Margin. This report takes a dive into PQD disclosure 6.5.1.1 using PQD analytics, which tracks the number of times over the previous 12-month period that the margin coverage held against an account fell below the actual mark-to-market exposure of that member account (a "backtesting breach").

In reality, a breach does not necessarily imply a default; it signifies a period where the "potential future exposure" exceeded the collateral held. We analyse what these breaches mean for the systemic safety of the CCP and how APC tools might actually increase the frequency of minor breaches in order to prevent much larger, margin calls during volatility periods.

7.2 GLOBAL VIEW: WHAT THE BACKTESTING DATA SHOWS

7.2.1 B3

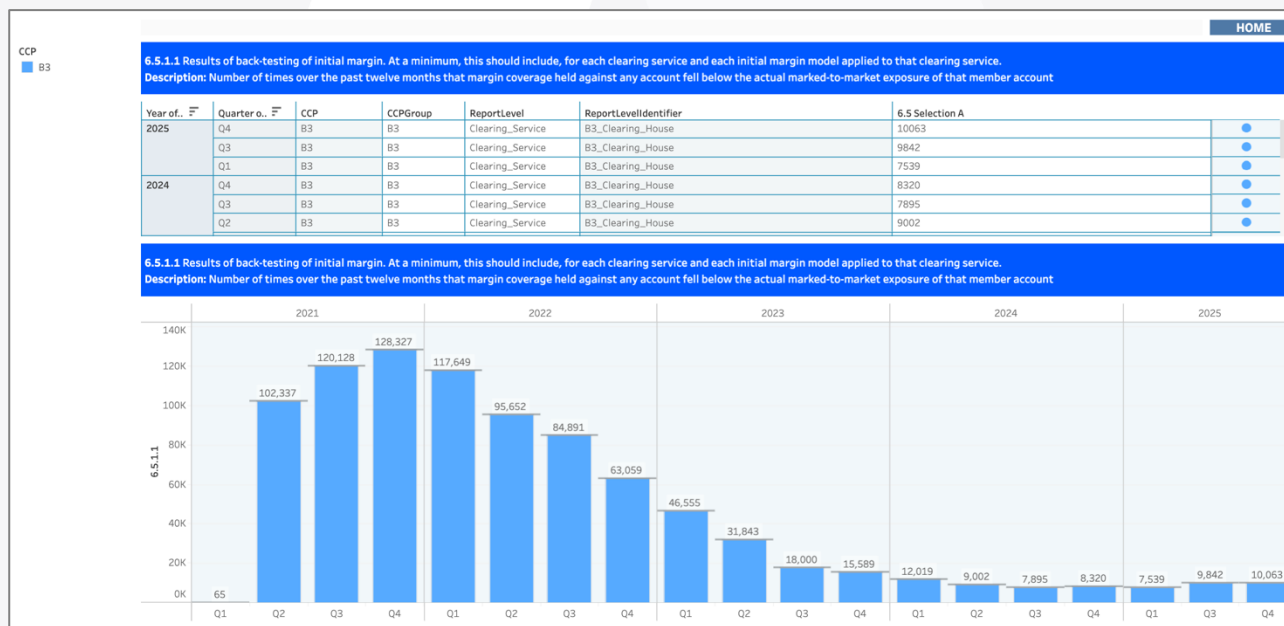


Figure 5: B3 back-testing exceptions, 2021–2025. Source: CPMI-IOSCO PQD 6.5.1.1.

Model design and model performance are distinct considerations: while robust design is a necessary foundation, model performance remains the definitive test. The PQD framework requires all CCPs to report back-testing results: “the number of times, over the previous twelve months, that margin coverage held against any member account fell below the actual exposure.”⁵⁰ It is important to understand that this is “**over the previous 12-months**” and **not** for the particular reporting quarter – an important distinction.

B3 in Brazil takes perhaps one of the most distinctive structural approaches, though it is worth being precise about what is doing the work. B3 is clear that a high confidence interval is not, in itself, its anti-procyclicality tool. The confidence level applied to its CORE (Closeout Risk Evaluation) margin methodology - B3’s public risk management manual specifies a floor of at least 99%, with the CCP’s internal risk committee calibrating the precise level higher based on the risk environment of the products cleared - is set through an assessment of the underlying risk profile of each market, not selected as a procyclicality lever. The dampening effect on margin volatility is a byproduct of that calibration, not its purpose. The fact that a higher confidence level tends to produce a less procyclical margin requirement is *factored into* the risk-modelling strategy, rather than being the strategy itself.⁵¹

The measures B3 does treat as deliberate APC tools sit elsewhere in the model. Three are worth drawing out because they explain how the conservatism actually behaves in practice:

- **A long historical lookahead:** B3 draws on up to 20 years of historical data in generating the scenario set used to calculate margin. Since this window already spans multiple stress episodes (the kind of correlation breakdowns and volatility spikes that a shorter lookahead would only capture after they occurred), much of the “stress” that other CCPs must add back in through a dedicated buffer or stressed-period weighting (the EMIR-

⁵⁰ CPMI-IOSCO, *Public Quantitative Disclosure Standards for Central Counterparties*, February 2015, Item 6.5.

⁵¹ A. Maruyama and F. Cerezetti, “CCP Anti-Procyclicality Tools: A Closer Assessment,” *Journal of Financial Market Infrastructures*, 7(4), 2019.

style tools common at EMEA CCPs) is already embedded in B3's baseline scenario set. The margin model does not need to react sharply to a new stress event because a version of that stress is already priced into the data it is drawing from.

- **Extensive use of prospective, "what-if" scenarios:** Alongside historical scenarios, B3's scenario set includes forward-looking stress events that have not yet occurred, widening the range of outcomes the margin already covers before a real shock materialises.
- **Portfolio-level risk aggregation:** B3 calculates risk across the full portfolio at the level of the final beneficiary, netting exposures across asset classes rather than margining positions in isolation. B3 flags this as an APC mechanism in its own right, and arguably the most important one: without stable, well-behaved offsets between positions, an abrupt change in correlation can cause the *netting benefit itself* to shrink suddenly, producing a margin spike that has nothing to do with the size of the underlying positions. A margin model that aggregates risk at portfolio level has to manage that offset risk explicitly, or it reintroduces procyclicality.

The combined effect is the same as originally described: margins are higher in peace time, and the proportional increase during stressed periods is smaller. A clearing member at B3 pays a relatively higher baseline cost for more predictable behaviour during a crisis, while a clearing member at a CCP relying on an add-on buffer pays less in calm markets but faces a potentially sharper adjustment when volatility arrives. The distinction B3 draws is that this outcome is the product of several interacting design choices, which includes lookback depth, scenario breadth, and portfolio-level netting; rather than a single confidence-interval dial.

On backtesting, B3 also flags a comparability issue that is worth stating plainly rather than leaving implicit in any cross-CCP exception counts cited elsewhere in this report. B3 reports backtesting results at the level of the final beneficiary portfolio, meaning the population of accounts being tested is typically far larger than at CCPs that backtest at clearing-member or default-fund level. This mechanically produces a higher *number* of exceptions without implying a higher *rate* of exceptions relative to the number of portfolios tested, and CPMI-IOSCO's PQD framework does not currently standardise the level at which backtesting populations are defined, so raw exception counts published by different CCPs are not directly comparable. Any comparison across CCPs should therefore be made on an exception-ratio basis, with the reporting level for each CCP made explicit.

7.2.2 CME

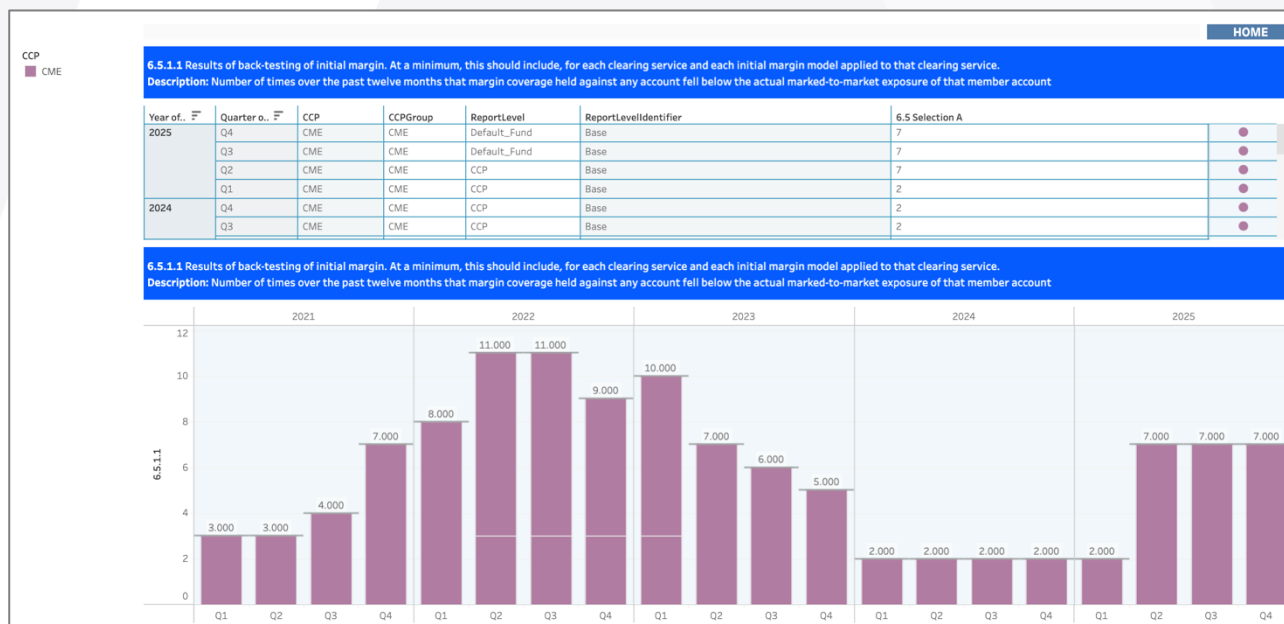


Figure 6: CME back-testing exceptions, 2021–2025. Source: CPMI-IOSCO PQD 6.5.1.1.

In Q4 2025, B3 reported 10,063 back-testing exceptions. CME reported 7. The same disclosure framework, the same reporting period, but orders of magnitude apart.

This divergence reflects structural differences in how each CCP reports, rather than a straightforward gap in model performance:

- **Reporting scope:** B3 reports at the clearing house level, aggregating across all products and all member accounts. CME reports at a more granular level (Default Fund / Base), which captures a narrower slice of activity. It is a narrower unit of observation with a correspondingly smaller population of tests.
- **Market context:** B3 clears across equities, derivatives, and fixed income denominated in the Brazilian Real, a currency with structurally higher volatility than the US dollar. Higher underlying volatility generates more frequent margin breaches for any given confidence level.
- **Model design interaction:** B3 targets a 99.96% confidence interval, which is well above the 99.00% standard. However, the back-testing methodology counts exceptions at the individual account level across all clearing services, meaning the denominator (total number of observations tested) is substantially larger than CME's. A higher exception count alongside a higher confidence target may reflect the breadth of the test population, not model inadequacy.
- **Definition of an exception:** The PQD framework specifies what CCPs must report but permits latitude in how the underlying back-testing calculation is structured, including how exceptions are defined, at what granularity they are counted, and whether they are measured intraday or at the end of the day. This is where the PQD "Qualitative Notes" become increasingly valuable to read in order to gain context to PQD figures. While the PQD data itself is highly valuable for risk management analysis, it is also the qualitative notes that give rise to more clarity. Furthermore, an increasing number of CCPs are also publishing the CCP Global "Quick Access Transparency Links" document which enhances clearing participants' existing access to CCPs' disclosures where the document provides a series of links to CCPs' rulebooks and disclosures⁵²

The raw numbers are publicly available. Without the accompanying context (reporting scope, product mix, account granularity, currency environment), a direct comparison is often misleading. The OFR identified exactly this problem.⁵³ Figures 3 and 4 above demonstrate exactly this. Furthermore, the standardisation required to make these disclosures genuinely comparable is the gap that Altair & Alang solutions are designed to fill. However, what about the bigger picture? While the focus has been on Initial Margin, what else are we missing in the procyclicality debate? Chapter 8 explores this in more detail.

7.2.3 LCH LTD

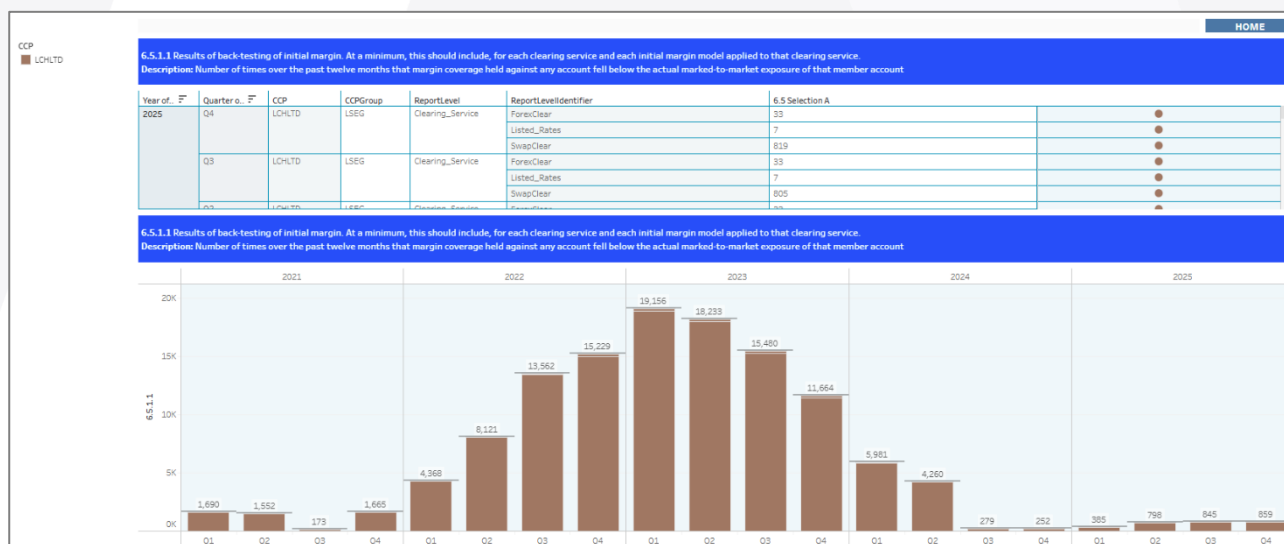


Figure 7: LCH LTD back-testing exceptions, 2021–2025. Source: CPMI-IOSCO PQD 6.5.1.1.

If the B3–CME comparison shows how reporting scope shapes the numbers, LCH Ltd shows how the nature of a crisis shapes the pattern. Through 2021, LCH Ltd's exception counts were low and stable, rarely exceeding 1,700 per quarter. Then came 2022: the Russia–Ukraine conflict, acute commodity volatility, and the UK gilt crisis. Exceptions rose steadily, peaking at 19,156 in Q1 2023. That peak does not suggest weaker model performance at that point; rather, it reflects the scale and persistence of the underlying stress events.

It means the rolling 12-month observation window was capturing all four quarters of 2022's turbulence at once. As each stressed quarter dropped out of the trailing window, exceptions fell in step, down to just 252 by Q4 2024. The

⁵² <https://www.tradersmagazine.com/xtra/ccp-global-releases-the-quick-access-transparency-links-template/>

⁵³ Heilbron, E. and Schwartz, H., "CCP Management of Liquid and Prefunded Resources," OFR Working Paper 26-04, 2026.

pattern reveals a practical limitation of the PQD backtesting metric: it is always looking in the rear-view mirror. By the time a clearing member sees a spike in the published figures, the stress event driving it may already be subsiding. This is one reason the January 2025 proposals emphasise forward-looking simulation tools alongside backward-looking performance data.

SwapClear, LCH Ltd's flagship rates clearing service, accounted for the vast majority of the count: 819 of 859 total exceptions in Q4 2025. This is unsurprising. Interest rate derivatives are particularly sensitive to macroeconomic and policy shocks, and the volume of accounts cleared through SwapClear creates a large test population - much as B3's broad aggregation across products produces a large denominator for its own exception count.

7.2.4 JSCC

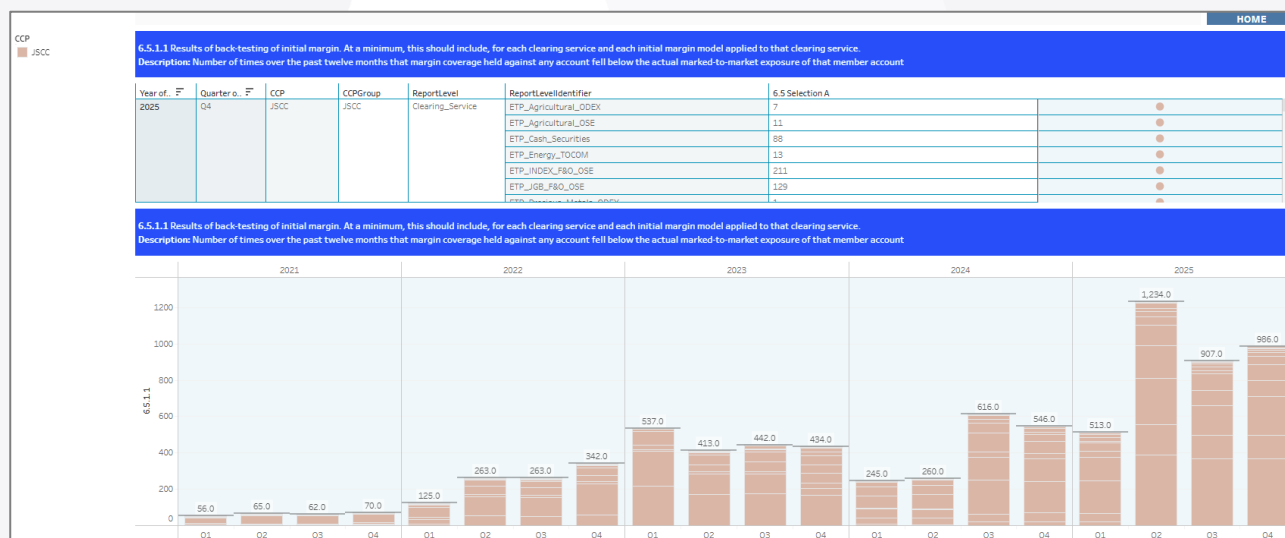


Figure 8: JSCC back-testing exceptions, 2021–2025. Source: CPMI-IOSCO PQD 6.5.1.1.

Where LCH Ltd's pattern reflects a distinct stress cycle that entered and then gradually rolled out of the observation window, JSCC presents a different picture: a steady upward trend without one dominant event or a clear subsequent reversal.

In 2021, JSCC reported between 56 and 70 exceptions per quarter, among the lowest levels in this analysis and broadly comparable to CME's single-digit figures when considered in the context of JSCC's narrower product range. By Q4 2022, following the Bank of Japan's surprise decision to widen its yield curve control band, that figure had risen to 342. Through 2023 and 2024, the count remained elevated but relatively stable, ranging between 245 and 616 exceptions.⁵⁴ In 2025, however, the trend accelerated, with exceptions reaching 1,234 in Q2 — the highest point in the series — and remaining elevated through Q3 and Q4.

This differs from LCH Ltd in an important respect. LCH Ltd's spike was driven by a discrete set of shocks - geopolitical conflict, currency volatility, and a pension fund liquidity event - which entered the model and then gradually moved out of the trailing observation window. JSCC's pattern instead appears to reflect a slower-moving regime change: the Bank of Japan's continuing monetary policy normalisation, which has introduced structurally higher volatility into Japanese rates markets after more than a decade of relative stability.⁵⁵

JSCC's approach therefore addresses a different dimension of the procyclicality problem: not only the level of margin, but also the predictability of margin changes. The CCP simulates the margin impact of scheduled risk events - including Bank of Japan policy meetings and major index rebalances - and shares those projections with clearing members in advance. This directly targets one of the issues clearing members most frequently raise: the greatest strain is often not the absolute size of the margin call, but the extent to which it arrives unexpectedly.⁵⁶

This is significant because the January 2025 BCBS-CPMI-IOSCO final report on the transparency and responsiveness of initial margin calls for broadly similar capabilities through enhanced margin simulation tools for participants. Most major CCPs already provide such tools to clearing members, although industry experience and CCP Global's April 2024

⁵⁴ Bank of Japan, *Statement on Monetary Policy*, 20 December 2022.

⁵⁵ Bank of Japan, *Statement on Monetary Policy*, 28 July 2023 (greater flexibility in yield curve control).

⁵⁶ JSCC public disclosures and member communications framework, cited by Risk.net, "Clearing House of the Year: JSCC", October, 2024.

consultation response suggest they remain underutilised.⁵⁷ The January 2025 proposals therefore do not introduce an entirely new concept; rather, they seek to improve the functionality of existing tools and extend their availability to smaller CCPs. That direction is now moving from proposal to implementation: in 2026, CPMI and IOSCO published proposed amendments to the CCP resilience guidance and public quantitative disclosure standards, incorporating elements of the January 2025 report, including simulation tools, measures of initial margin responsiveness, margin model governance frameworks, and the use of margin model overrides.

8. BEYOND INITIAL MARGIN: THE BIGGER PICTURE

8.1 THE VARIATION MARGIN BLIND SPOT

The regulatory and industry conversation around procyclicality has focused almost entirely on initial margin. However, for market participants managing daily cash flows, **variation margin is often the larger liquidity drain during stress.**

8.2 THE DISTINCTION MATTERS

- IM is a deposit. It can be posted in cash or eligible securities. It changes when the model recalibrates, which may happen daily but typically moves in measured increments, and smoothly over time.
- VM is a cash payment based on mark-to-market changes and is usually settled the next day, and sometimes intraday. There is no buffer, floor, or APC tool. If your portfolio loses USD 50 million today, you owe USD 50 million in cash.

During the COVID stress of March 2020, daily VM flows at some CCPs exceeded the total stock of initial margin. During the April 2025 tariff shock, aggregate VM calls across derivatives markets reached levels that surpassed even March 2020. However, anti-procyclicality tools, by design, only target initial margin. No one has proposed a mechanism to smooth the variation margin, because VM is a direct function of market price movements. If you dampen it, you break the mark-to-market discipline that makes central clearing function as designed.

The January 2025 CPMI-IOSCO report on streamlining variation margin provides examples of effective practices for VM processes, but these focus on operational efficiency (faster netting, better intraday scheduling) rather than the liquidity impact itself.⁵⁸ The fundamental tension remains: the largest cash drain during a crisis is the one component of margin that no framework addresses.

⁵⁷ CCP Global, Response to the BCBS-CPMI-IOSCO Consultative Report on Transparency and Responsiveness of Initial Margin in Centrally Cleared Markets — Review and Policy Proposals, 16 April 2024.

https://ccp-global.org/wp-content/uploads/2024/04/CCPG-response-to-BCBS-CPMI-IOSCO-Consultation-on-IM-transparency-and-responsiveness_vF.pdf

⁵⁸ CPMI-IOSCO, "Streamlining Variation Margin in Centrally Cleared Markets: Examples of Effective Practices," January 2025.

8.3 HOW CCPS SIZE THEIR COLLECTIVE SAFETY NET

Beyond margin, the other major layer of CCP financial resources is the prefunded default fund. This is the pool of contributions from clearing members that absorbs losses if a defaulting member's own margin proves insufficient. How CCPs size this pool - and how it has evolved over time - tells a complementary story to the margin data.

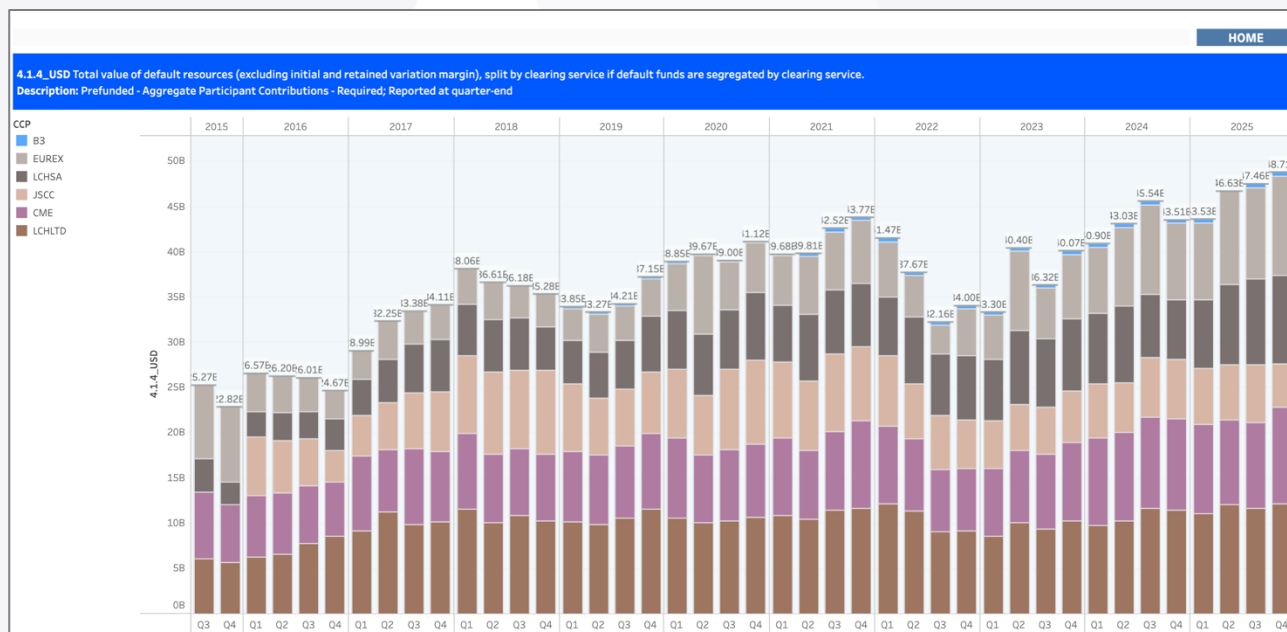


Figure 7: Prefunded default fund contributions across six major CCPs, 2015–2025.

Source: CPMI-IOSCO PQD 4.1.4, USD equivalent value.

Several observations stand out from this data:

- The total pool of prefunded default resources across these six CCPs has roughly doubled since 2015, broadly tracking the growth in initial margin, steadily and progressively.
- The relative share of each CCP's contribution has shifted over time, reflecting changes in clearing volumes, product mix, and risk appetite.
- Some CCPs maintain proportionally larger default fund buffers relative to their IM pools, which means less reliance on margin increases during stress to maintain overall financial adequacy.

This connects directly to the OFR's 2026 findings.⁵⁹ Their working paper examined how CCPs manage their liquid and prefunded resources and found significant variation in the ratio between liquid resources and total prefunded financial resources. Some CCPs hold large cash buffers at central banks. Others rely more heavily on committed lines of credit from their clearing members.

A CCP that relies on committed credit lines from its own clearing members for liquidity faces a subtle but important risk: the members providing those credit lines are the same members most likely to be under liquidity pressure during a systemic stress event. The OFR did not call this “wrong-way” risk explicitly, but the dynamic is clear.⁶⁰ A CCP whose liquidity depends on its members' willingness to lend during a crisis is structurally different from one that holds its own cash reserves, particularly at the CCP's local central bank.

Tracking these structural differences over time is essential for any clearing member or institutional investor assessing their exposure to CCP risk. Furthermore, the question around CCP central bank access has long been a prevailing topic discussed amongst market participants for many years now and has still yet to be formalised amongst the industry to give a wider collection of CCPs direct access with all safety net of benefits and efficiency this offers.

⁵⁹ Heilbron, J. and Schwartz, N., “Central Counterparty Management of Liquid and Prefunded Resources,” Office of Financial Research Working Paper No. 26-04, U.S. Department of the Treasury, 5 March 2026.

⁶⁰ Paddrik, M., Gadgil, S., and Lumsdaine, R., “The Impact of CCP Liquidity and Capital Demands on Clearing Members Under Stress,” Office of Financial Research Working Paper No. 25-03, U.S. Department of the Treasury.

From another perspective, the connection here to APC measures is straightforward. APC tools that keep initial margin stable during stress mean fewer instances where coverage falls short of actual exposure, and a default fund that sits further from the point of activation. Each backtesting exception in Section 7 represents a moment where that margin buffer was insufficient and the default fund stood as part of the next line of defence.

A CCP whose APC framework produces a smoother margin profile places less demand on its mutualised safety net; a CCP with more reactive margins may need a proportionally larger default fund to compensate. Analysing the PQD data holistically, margin behaviour alongside default fund structure and liquidity composition, rather than in isolated disclosure items, is what turns these numbers into an informed assessment of CCP resilience – the bigger picture that we should take in.

9. CONCLUSION: LOOKING AHEAD

APC is not a solved issue. It remains an ongoing trade-off that CCPs, clearing members, and regulators must manage carefully to strike the right balance. The regulatory direction is clear: less prescription, greater transparency, and more explicit governance over the balance between risk coverage and margin stability. However, the empirical evidence drawn from PQD data in this report shows that, even under aligned international standards, CCPs continue to strike that balance in markedly different ways.

Understanding this requires the ability to recognise an important distinction about what CCPs *are* and what they are *not*. As B. Cox and R. Steigerwald argued in their influential 2017 Chicago Fed paper, CCPs are commitment mechanisms - they exist to guarantee that cleared trades are honoured.⁶¹ They are not risk-takers in the way other market participants are. Their resilience depends not on how much capital they hold, but on the quality of their margin regime and the mutualised default resources they and their members contribute to. The financial resources that matter most for CCP resilience - margin collateral and default fund contributions - are provided by clearing members, not by the CCP itself. Of course, the CCP has its own skin-in-the-game as well, as a vital governance tool and a critical incentive to maintain prudent risk management standards. However, applying bank-style capital frameworks to CCPs misses this fundamental point, and risks drawing attention away from the margin dynamics that actually determine how a CCP performs its duty during stress. **Three developments deserve closer attention for market participants:**

1. **Implementation of Policy Proposal 6 from the January 2025 BCBS-CPMI-IOSCO Report - Transparency and responsiveness of initial margin in centrally cleared markets – review and policy proposals:** On 6 May 2026, CPMI-IOSCO published a consultation proposing amendments to the existing guidance and PQD standards, including a new disclosure requiring CCPs to disclose a standardised margin responsiveness measure. The metric is based on two components: the rate of change in initial margin and the rate of change in market conditions, each over a defined observation period. The new standardised margin responsiveness metric will, for the first time, create a consistent basis for comparing this CCP metric. However, its value depends entirely on the observation window and how CCPs collectively work together to agree on how this is implemented and published in practice. With an initial one-year lookback starting in relatively calm markets, the metric will not capture a genuine stress episode until one occurs. Historical PQD data - the kind of longitudinal, cross-CCP dataset this article has drawn on - will be essential for providing context and benchmarking the new metric against actual experience. When CCPs begin to publish their new PQD templates set by CCP Global along with the additional requests set by BCBS-CPMI-IOSCO, market participants will be keen to immediately analyse and compare the CCP figures. However, CCPs differ in market and product mix - while the new disclosures will be valuable, participants should be prudent when comparing CCPs on these metrics.
2. **The BoE tolerance framework as a template:** The BoE's approach of requiring CCPs to define and disclose explicit procyclicality tolerances is the first genuinely outcomes-based supervisory framework in this space. If it proves workable - if CCPs can articulate meaningful tolerances and demonstrate they are met – we would expect other jurisdictions to explore similar approaches. This would represent a meaningful shift from the current EU model of prescriptive tool selection.
3. **The next stress test:** Every major insight in this field has been catalysed by a market event, for example, March 2020, September 2022, April 2025. The next shock is unlikely to resemble the last one (each of these episodes has arrived through a different transmission channel and stressed different parts of the system) which means transparency and predictability tools can only go so far in preparing participants for what comes next. The more realistic question is whether the frameworks now being put in place will have improved transparency and predictability enough that clearing members and their clients are better positioned to absorb a shock whose specific shape cannot be anticipated in advance. The ongoing market disruption from the Strait of Hormuz crisis will provide a further test case, with the 2026 Q2 PQD data likely to capture its impact on margin dynamics across affected CCPs. The data trail left by PQD disclosures will be the primary evidence base for assessing that resilience, even as it inevitably tells the story of the last crisis rather than predicting the next one. It remains essential for CCPs and clearing members to keep abreast of these developments.

⁶¹ Cox, R.T. and Steigerwald, R.S., "A CCP is a CCP is a CCP," Federal Reserve Bank of Chicago PDP 2017-01, April 2017.

10. ABOUT US

Altair & Alang is a boutique management consulting firm with a global footprint, serving clients across EMEA, APAC, and the Americas. We specialise in business intelligence, financial strategy, and actionable insights tailored to our client's needs. We partner with clients to uncover data-driven opportunities, optimise financial performance, and empower strategic decision-making.

We have worked with over 60 central counterparties (CCPs) worldwide, supporting them on a diverse range of initiatives. Our team has been directly involved in enhancing market transparency standards, advising both CCPs and global regulators. This unique experience positions us as a trusted partner to FMI's seeking to meet international standards while delivering meaningful improvements to governance, resilience, strategies, and stakeholder confidence in the global financial markets.

While our roots are in the financial services and capital markets, our strength lies in data and analytics that translate across all industries. We bring deep functional expertise to a wide range of sectors, including fintech, insurance and cybersecurity. Whether optimising operating models, designing scalable data strategies, or enhancing regulatory insight, we help clients make smarter decisions and deliver measurable results in dynamic environments.

Our deliverables combine deep industry knowledge with advanced analytics to deliver impactful solutions that drive measurable results and long-term success for our clients.

For more information, please contact us: info@altairalang.com

Website: www.altairalang.com

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