

## Clearing – Balancing CCP and Member Contributions with Exposures

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As the industry considers the appropriate ‘skin in the game’ for CCPs, the risk incentives created by the CCP’s contribution have largely been ignored

### Key Takeaways on CCP Risk Management

1. Central counterparties (CCPs) are market risk neutral as a normal course of business. CCPs do not engage in trading, lending, or any other market risk creating activities.
2. CCPs serve a crucial market function by ensuring participants do not have “too big to fail” consequences.
3. Monitoring participants to ensure they have sufficient skin in the game to support their activities is a fundamental aspect of a CCP’s role.
4. CCPs with a “systemically important” designation maintain resources at least large enough to cover the default losses of their two largest clearing members.
5. A CCP’s most important contribution to managing systemic risk is the management of concentration risk among their largest participants.

CME Clearing is a strong supporter of sound risk management underpinned by the belief that market participants must be incentivized to manage the risks they create. This view, while not new, was bolstered by the financial crisis which saw lenders repackaging and offloading the risk of their loans via securitizations, separating risk creators from the responsibilities of bearing that risk. Securitization often resulted in a lack of incentives for lenders to conduct appropriate due diligence on their loans, as the lenders were not subject to losses if the loans were not repaid. For securitization lenders, as well as other risk creators, skin in the game should be used to ensure these market participants pay to support their positions. This concept applies in central clearing as well, where participants’ skin in the game creates incentives for customers to diversify their exposures across clearing members and for participants to build balanced portfolios, which reduces systemic risk.

A CCP’s core function is risk management – not trading, lending, or other types of risk creation. CCPs are fundamentally risk managers responsible for ensuring the overall safety and soundness of their markets. Discussions regarding the appropriate amount of capital a CCP should contribute to its default protections have not fully considered the role of a CCP and the way in which a CCP’s skin in the game would be utilized. Ensuring that market participants and clearing firms have the proper skin in the game is one of the most critical roles of a CCP. It is important to clarify that a CCP’s skin in the game does not protect clients of an insolvent clearing member from fellow customer risk or from the insolvency of the clearing member itself. A CCP’s skin in the game is part of the mutualized resources available in the

event the loss caused by the insolvent clearing member exceeds the available resources of that clearing member.

Recent industry suggestions for CCP contributions sized using arbitrary percentages or dollar amounts are not supported by any empirical evidence and fail to consider the role and risk profile of CCPs or the systemic risk reduction benefits they provide to the market. These proposals also ignore the incentives created by a CCP's capital contribution, which are critical to proper risk management and mitigation.

CME Clearing has long advocated for meaningful, funded, first-loss contributions to the CCP waterfall, in advance of the mutualized clearing member default fund, and has demonstrated this commitment with its own dedicated capital. CME Clearing maintains capital contributions to each waterfall equal to at least the average of the default fund requirements calculated for its clearing members. This provides a crucial buffer against potential contagion risk in a default and ensures the CCP's contribution, will scale appropriately with the total risk of the default fund. As of September 30, 2014, total CME waterfall contributions were approximately \$375 million, or roughly 5.25%<sup>1</sup> of the total mutualized default fund, all held in highly liquid assets on the balance sheet and explicitly set aside for the default management waterfall. This paper further explains the role of a CCP and the default management waterfall.

## **CCP Waterfall Purpose and Incentives**

Industry discussions have recently focused on a misconception that central clearing results in a concentration of systemic risks. Risks are not concentrated by a CCP; rather risks may be concentrated within a clearing member through the exposures they bring to a CCP. A CCP's most important contribution to managing systemic risk is the management of concentration risk among their largest participants. CCPs structure the waterfall to ensure they can adequately manage the risks brought by clearing members and encourage prudent balancing of risk among clearing members. Key tools in managing concentration risk include ensuring clearing members pay for the exposures they bring and are incented to support policies that encourage diversification of risk across participants, and CCPs have the ability to attract and maintain a diverse set of clearing members to reduce concentration risk.

Nearly all CCPs follow a similar structure in building their waterfalls – layers of funding dedicated to protect against the losses caused by a clearing member default. These layers create a pre-defined and transparent system of protections; that system provides safety for all participants and also creates clear incentives for clearing members to manage risk. Each layer of the waterfall is transparent to market participants, giving clearing members the information they need to assess potential liabilities in the event of a clearing member default, information that is largely unavailable outside of a centrally cleared environment.

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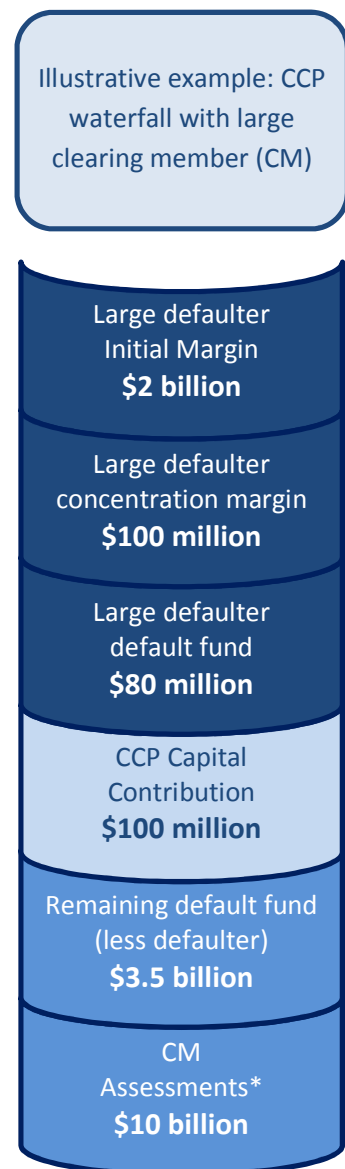
<sup>1</sup> Includes the funded portion of US and UK waterfalls

## Waterfall Layers Encourage Prudent Risk Management

Clearing members are required to post collateral to support the risks of their portfolios and the portfolios of their customers, which make up many of the layers of risk protection. The first layer of risk protection is the mark-to-market calculation, which is performed at least daily and removes debt from the system by settling profits and losses rather than allowing outstanding obligations to accumulate in the system. In a central clearing model, this known as variation margin (VM). This serves as a preventative risk management tool to minimize any potential loss in the event a clearing member fails to pay its obligation to the CCP, resulting in a default. The second layer is comprised of initial margin (IM), which is an ex-ante risk tool that covers the potential future exposures and closeout costs of clearing member positions in the event of a clearing member default. CME Clearing calculates IM to cover at least 99% of potential expected losses and collects IM from every participant at least daily. IM collected by CME Clearing also includes additional concentration charges to ensure clearing members with concentrated exposures are properly supporting the risk brought by their positions. Industry studies have shown that in the recent financial crisis, one of the largest seen in history, the IM collected from large defaulting clearing members was sufficient to resolve the losses associated with the default.<sup>2</sup>

The next layer in the waterfall is the defaulter’s contribution to the mutualized default fund. The default fund is designed to cover tail risk, potential losses under extreme but plausible scenarios as measured by stress tests. Stress test scenarios include extreme historical scenarios, such as the global financial crisis, the 1987 crash, LTCM, etc., as well as hypothetical scenarios that break assumptions of correlations and risk offsets used to calculate IM. Stress tests are used to identify potential losses in excess of IM, known as shortfall. CME Clearing, like all systemically important US CCPs, sizes its default funds to cover at a minimum the losses caused by the simultaneous default of the two clearing members with the largest shortfalls (“cover 2”). Individual clearing member default fund requirements are sized based on their risk exposures; requirements increase and decrease as clearing member risks increase and decrease, respectively.

If the defaulters’ funded resources have been exhausted and losses persist – which would mean the default is more significant than relevant historical stress events, including the record financial crisis of 2008 and 2009 – best practice for CCPs is to use a significant and transparent amount of their own funds



\* Represents a single default, could be higher if more than one firm defaults

<sup>2</sup> [How central counter-parties strengthen the safety and integrity of financial markets](#)

to satisfy the continued losses, their waterfall contribution. This provides additional motivation for CCPs to adequately calibrate participants' skin in the game, sized through IM and default fund requirement calculations, as a failure to do so could result in a capital loss to the CCP. By adding a meaningful amount of first-loss capital, prior to the non-defaulting clearing members, CCPs demonstrate their commitment to risk management and efficient default management, which will additionally help limit the accumulation of losses and reduce the risk of a default impacting their capital. Most CCPs are completely transparent about this contribution and its usage, allowing participants to fully evaluate the risks and incentives of the CCP, and choose their partners accordingly.

In the event of truly extreme default losses, greater than any experienced historically, which exceed the defaulted clearing member's IM and default fund contribution, as well as the CCP's contribution to the waterfall, the next layer is the mutualized default fund contributions of solvent clearing members. Mutualizing the remaining losses of a defaulted clearing member is a fundamental benefit of central clearing as it reduces the impact of a counterparty default to any single individual counterparty and mitigates systemic risk. Further, in a central clearing model, the capital available to manage the default of a counterparty is pre-funded and dedicated solely for this purpose, including clearing member contributions and the CCP's contribution to the waterfall. IM and default fund contributions are held by the CCP, who has a first priority unencumbered lien on the funds to ensure immediate access to collateral in a default scenario. This is unlike the capital maintained by a bank that is not dedicated to individual counterparties and has numerous creditor claims that are not transparent to the market.

Beyond the mutualized default fund, CCPs are able to call on unfunded contributions, sometimes called "assessments", which serve as a rules based recovery tool to provide funding to the clearinghouse in the event of a catastrophic default. Assessments act primarily as a recapitalization tool to ensure the CCP is fully funded and able to keep its markets open in the event of excessively large default losses, allowing the CCP to recover from and appropriately respond to a stress situation. CME Clearing strongly prefers recovery to resolution and has designed its assessments program to incentivize clearing members to meet their obligations and help avoid resolution. CME Clearing ensures clearing members are able to meet their assessment powers from a financial standpoint on an ongoing basis. On average, CME's bank-affiliated clearing member assessments represent less than 1% of the parent's Tier 1 capital. Further, CME Clearing ensures clearing members are incented to meet their assessment powers through its rules, which provide for clearing members who do not meet assessment calls to be declared in default, resulting in the unwinding and liquidation of their portfolio at the CCP. Assessment calculations, described in CCPs' rulebooks and other public documents, are based on the risk profile of the portfolio and are reported to the clearing members regularly to ensure members are fully aware of their responsibilities and can manage their risk exposures accordingly.

Recently, industry participants have recommended that CCPs remove the assessment powers layer of the waterfall and replace it with a pre-funded recapitalization fund – outside the control of the CCP, to be used in the event the pre-funded mutualized default fund is exhausted. We believe that this idea would accelerate resolution rather than promote recovery. It is important for capital, as a function of risk, to be available in the waterfall rather than for capital to be maintained away from the waterfall. If the intent of the suggestion is to make more prefunded capital available in the event of the failure of a

large Global Systemically Important Financial Institution (SIFI), CME Clearing recommends a targeted approach where Global SIFI clearing members that bring the largest concentration of clients and the largest risks put additional funds in the waterfall. This approach would ensure that large SIFI clearing members provide enough funds to resolve their potential default, further reducing the probability that the losses would impact mutualized contributions of the solvent clearing members while also promoting a recovery outcome, rather than a resolution. This approach would also ensure that the CCP maintains proper funding to cure losses associated with the defaulting firm's client clearing business. In a default situation, the funding contributed by the defaulter will be critical to ensuring the defaulter's clients are not impacted by the insolvency of their clearing member.

In addition to the waterfall structure and the incentives, described above, CME believes that these protections are further strengthened by the concentration margin required of clearing participants with large concentrated portfolios. By charging additional requirements to support these positions, CCPs can encourage clearing members to reduce concentrated positions in their portfolios, reducing the total risks brought to the CCP while ensuring that existing concentration risks are properly supported by the risk takers. Encouraging more balanced, less concentrated portfolios will result in less costly default management processes in the event of a clearing member default, as these portfolios will be easier to liquidate or auction. With this funding, deposited in the form of IM and immediately available to cure the losses of their potential default, and the benefits of an efficient default management process due to more balanced portfolios, CCPs can provide even greater protection to clearing participants through active concentration risk management. Additionally, concentration margin requirements also help defend the CCP against potential resolution by applying collateral requirements to clearing members that bring significant risks to the clearinghouse.

## **CCP Risk Management and Benefits to Market Security**

CME Clearing recognizes that the effectiveness of its risk management protections, including the waterfall, relies on the efficiency of the supporting risk management tools. CME Clearing utilizes a number of tools to monitor and limit the total risks facing its clearing members and customers. These tools include, but are not limited to: credit risk evaluations, transparent daily settlement processes, real-time risk monitoring and credit controls, liquidity risk management, and daily stress testing. These tools have been tested in recent stressed markets and have demonstrated their effectiveness against the worst financial crises in memory, with no major CCP, including CME, having to access their own capital or the mutualized capital of their clearing members to cure default losses.

The safeguards package and waterfall structure described in the previous section allows a CCP to limit the systemic impact of a failing clearing member. The safeguards package is part of a broader risk management framework employed by CCPs to mitigate systemic risk and reduce the likelihood of a clearing member default. All CCPs are designed primarily to provide risk management services for their participants and the markets they serve, reducing systemic risk and improving crisis management through their risk management practices and the waterfall structure.

## CCP Risk Management Standards

Unlike clearing members and market participants, CCPs do not bring market risk to the clearing system. However, CCPs do face unique risks themselves, including ensuring that the skin in the game of clearing members and participants are designed adequately to protect non-defaulting clearing members and customers from losses. Risk management standards for CCPs have been defined by local and international regulators, generally following the recommendations of the CPSS-IOSCO Principles for Financial Market Infrastructures (PFMIs)<sup>3</sup> to address the risks faced by CCPs specifically. Some CCPs, including CME,<sup>4</sup> have published public disclosures to these Principles, describing their risk management practices and compliance with international standards and best practices. This provides the market full transparency into each CCP's risk management philosophy and practices.

## CCP Skin in the Game and Improved Crisis Management

As correctly noted by industry participants, a CCP's book will be temporarily unmatched if one of its clearing members defaults. In the event of default, the goal of the CCP's default management process is to restore the matched book as quickly as possible. Therefore, it is imperative that the IM and default fund of the defaulted clearing member are sized appropriately to cure the default losses. Historically, CME has restored its matched book during a clearing member default within a matter of hours, including during the global financial crisis, and the IM of the insolvent clearing member has been sufficient to cure the losses without needing to use even the default fund of that clearing member. Additionally, CME has not needed to access its own capital layer, or the mutualized layer of non-defaulted clearing members, to satisfy the losses of a clearing member default.

Other than the extremely rare event of a clearing member default, CCPs support a matched book and do not have market exposure. CCPs themselves create no additional market risk that would necessitate the skin in the game support required of risk creators; therefore it is unreasonable to conclude that CCPs should contribute excessive amounts of capital to the default waterfall, as has been suggested by some in the industry.

## Balancing CCP Contributions to Reduce Risk

Recognizing the benefits of first-loss CCP waterfall contributions, it is important to consider the appropriate balance of the CCP contribution to ensure proper motivations and risk management among market participants. CCP waterfall contributions most effectively improve market security when sized to represent the risk of the waterfall and prevent contagion risk. Some industry suggestions for arbitrary, excessively large CCP contributions fail to

As CCPs bear all losses that are not associated with a clearing member default, it is important that CCPs maintain capital outside of the waterfall to manage potential losses. For-profit CCPs are typically better capitalized and better positioned to sustain losses.

<sup>3</sup> <http://www.cmegroup.com/clearing/risk-management/files/cme-clearing-principles-for-financial-market-infrastructures-disclosure.pdf>

<sup>4</sup> CPSS has been renamed CMPI  
<http://cmegroup.com/pfmidisclosure>

consider the negative incentive effects resulting from such large contributions, which would result in CCPs subsidizing their participants' risks. If a CCP contributes an extremely large amount to the waterfall, clearing members can take on more risks for the same amount of capital, creating moral hazard by separating risk creation from skin in the game.

For example, if CME were to increase its capital contribution to the waterfall to cover the shortfall for the largest potential defaulting clearing member, this would allow clearing members to increase their risk exposures by over 40% for the same level of default fund contributions they make today, with CME subsidizing the additional risk with its own funding and reducing the clearing members' skin in the game relative to their risk. Ensuring clearing members maintain default fund contributions reflective of their risk profile further incents mutual alignment of interests between the CCP and its clearing members, who participate in the CCP's risk management governance structure, to focus on reducing unfunded concentrations of risk among their peers.

Default fund contributions and IM motivate clearing members to manage their risk, by creating incentives to maintain balanced portfolios, and the risks of their clients. These contributions further motivate clearing members to actively participate in the default management process to ensure their default fund contributions are not utilized in a fellow clearing member default.

Clearing is the core function of a CCP, therefore CCPs have strong motivation to ensure clearing member contributions and their own capital contributions will be sufficient to avoid the mutualization of losses in a default situation. Unlike banks, risk management is the core market offering and franchise value of CCPs and utilization of non-defaulter resources in the waterfall would be seen as a failure of the CCP at its main offering – risk management.

## **Conclusion**

Skin in the game is at the core of a centrally cleared market and the most critical component of a CCP's ability to manage the default of a clearing member. The discussion of skin in the game should focus largely on the amount of skin in the game that each clearing member must contribute to the waterfall, including IM, concentration margin, default fund, and assessments. A clearing member's skin in the game should scale with the exposures they bring to the CCP. CCPs are market risk neutral and their role is to ensure that all market participants have the proper amount of skin in the game to create incentives for managing their exposures. Similarly, CCPs should align their own incentives with a meaningful first-loss capital contribution. These incentives clearly benefit markets through reduced systemic risk and prudent management of crisis events, as shown by the performance of CCPs during the 2008 financial crisis. CME Clearing believes that skin in the game requirements must be developed on principles that incentivize market participants to manage the risks they create.