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1. Introduction

Key Takeaways on CCP Risk Management

1. Central counterparties (CCPs) become a buyer to every seller and seller to every buyer for each derivatives contract they clear. In this role, they are market risk neutral counterparties that guarantee the performance of both parties to each contract they clear. A CCP's core function is risk management – not trading, lending, or other types of risk creation.
2. CCPs utilize risk management and counterparty credit mitigation tools that, among other things, incentivize their market participants to effectively manage their risks. These tools include the daily exchange of funds for mark-to-market movements (i.e., settlement variation) and collection of initial margin, all of which implement a “defaulter pays” model through which market participants are incentivized to manage their risks and meet their obligations to the CCP.
3. CCPs also collect financial resources from their clearing members that may be utilized in the event of a fellow clearing member default (i.e., a pre-funded default fund or Guaranty Fund in case of the CME Clearing). These mutualizable resources implement a “survivor pays” model through which clearing members are incentivized to actively participate in the default management process in a manner that is aligned with the best interest of the broader clearing system.
4. CCPs are inherently incentivized to effectively manage the risks of their market participants, regardless of contributing resources to managing a clearing member default (i.e., commonly referred to as a CCP's skin in the game), since their franchise value is dependent on their ongoing ability to guarantee the performance of the contracts they clear and maintain a matched book. A CCP's skin in the game does, however, demonstrate its confidence in its risk management practices.

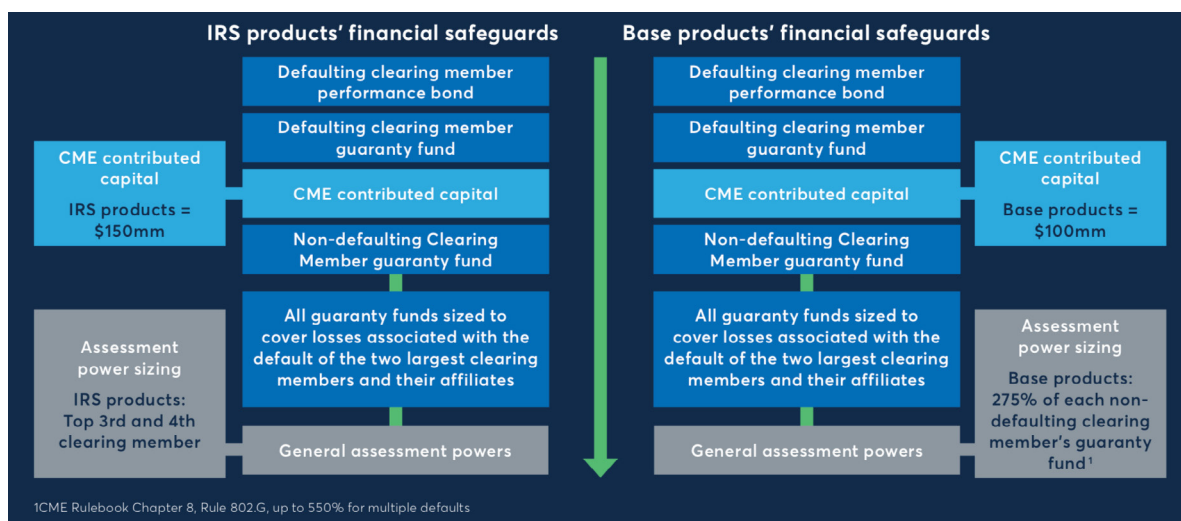
Our view at CME Clearing¹ is that sound risk management is underpinned, in part, by the belief that market participants must be incentivized to manage the risks they create. The importance of these incentives, while not new, were more prominent following the 2008 Global Financial Crisis during which lenders repackaged and offloaded their loans via securitizations, separating risk creators from the responsibilities of risk bearing. Notably then, securitization caused some lenders to lack the incentive to conduct appropriate due diligence on these loans, as the lenders were not subject to losses if the securitized loans were not repaid. For this type of securitized lender, as well as other risk creators, skin in the game should be used to ensure these parties pay to support their market activity. Risk management incentives have been and continue to be applied in derivatives markets that are cleared by a CCP, as participants' skin in the game and the structure of the financial safeguards waterfall (or default management waterfall) motivates them to actively manage their risks – see Figure 1. This includes incentivizing customers to diversify their exposures across clearing members and clearing members to build balanced portfolios, particularly in markets where they provide customer access. The importance of these risk management incentives was demonstrated again in 2021 when certain prime brokerage market participants experienced losses that accumulated in concentrated, uncleared positions where the market structure does not always employ similar incentive tools.²

1 CME Group Inc. is the parent company of Chicago Mercantile Exchange Inc. (“CME”), which provides clearing services for listed futures and options and cleared swaps. In its capacity as a CCP (i.e., “CME Clearing”), CME is registered with the Commodity Futures Trading Commission (“CFTC”) as a derivatives clearing organization (“DCO”).

2 See Credit Suisse Group AG, Credit Suisse Group Special Committee of the Board of Directors Report on Archegos Capital Management, (July 2021) (noting, Credit Suisse incurred approximately \$5.5 billion in losses following the March 2021 default of Archegos Capital Management, which “are the result of a fundamental failure of management and controls in CS’s [“i.e., Credit Suisse’s”] Investment Bank and, specifically, in its Prime Services business.”), available at <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/investor-relations/financial-disclosures/results/csg-special-committee-bod-report-archegos.pdf>.

A CCP's core function is risk management – not trading, lending, or other types of risk creation. A CCP is fundamentally a risk manager responsible for the stability of the markets it clears. The franchise value of a CCP is dependent on the integrity of its markets, which is predicated on its success as a risk manager, including mitigating the risk of loss to non-defaulting clearing members and their customers in the event a fellow clearing member defaults in meeting an obligation to the CCP. As such, a CCP is inherently incentivized to rigorously manage the risks of its market participants whether or not it makes an ex ante capital contribution in managing a clearing member default. Where a CCP does make a capital contribution, it is part of the financial safeguards waterfall available in the event the loss caused by the defaulted clearing member exceeds the available resources of that clearing member.³ A CCP's contribution is not meant to be a significant loss absorbing resource,⁴ but rather, a meaningful, pre-funded, first-loss contribution that demonstrates the CCP's confidence in its risk management practices without undermining the incentives for market participants to manage their risks and actively participate in the default management process.

Figure 1: CME Clearing's Financial Safeguards Waterfalls



Some market participants suggest that a CCP's skin in the game should be sized using arbitrary percentages of the mutualizable default fund. This is not supported by empirical evidence and fails to consider the role and risk profile of a CCP and the negative impacts an overly large skin in the game can have on market participants' incentives to effectively manage their risks. To ensure that CCPs continue to support financial stability and reduce systemic risk, the historical successes of the centrally cleared market structure cannot be ignored and the built-in incentives established by the financial safeguards waterfall and other risk management tools must be preserved.

CME Clearing has long advocated for meaningful, pre-funded contributions to a CCP's financial safeguards waterfall that would be used in advance of the mutualizable default fund to demonstrate the CCP's confidence in its risk management practices. CME Clearing has affirmed its commitment to this with its own dedicated skin in the game. CME Clearing maintains a capital contribution to each of its financial safeguards waterfalls that is generally equal

- 3 It is important to clarify that a CCP's skin in the game does not protect customers of a defaulted clearing member from fellow customer risk.
- 4 See Central Counterparty Risk and Governance Subcommittee of the CFTC's Market Risk Advisory Committee, DCO Capital and Skin In the Game Areas for Discussion (July 2021) (noting, the Subcommittee is comprised of representatives from both DCOs and market participants and the report stated, "the primary purpose of DCO SITG [(i.e., skin in the game)] is to incentivize management of market and other risks, rather than serve as a significant resource to absorb losses arising from a clearing member's default"), available at https://www.cftc.gov/media/6181/MRAC_CRGCapitalSITGFinalPaper071321/download.

to at least the median of the default fund requirement calculated for each of its clearing members. CME Clearing contributes \$100 million and \$150 million to its Base (i.e., primarily futures and options) waterfall and IRS waterfall, respectively. Each capital contribution is held in highly liquid assets on CME's balance sheet and set aside for this purpose. The role of a CCP and the financial safeguards waterfall is further explained below.

2. Financial Safeguards Waterfall: Purpose and Incentives

For over 100 years, CCPs have provided crucial risk management and transparency benefits to their markets, which has supported the significant growth of liquid central limit order books. For example, CCPs' successful management of the 2008 Global Financial Crisis prompted policy-makers across the globe to implement clearing mandates for certain over-the-counter derivatives to further support financial stability and reduce systemic risk. However, some market participants have inappropriately focused on a misconception that central clearing results in the undue concentration of risks. In fact, central clearing serves as a firewall to mitigate the contagion effects that could otherwise occur if the concentrated risk-taking by market participants remained in opaque, uncleared markets. More specifically, this misconception fails to recognize that, as central clearing transfers certain obligations with respect to derivatives contracts from clearing members to a CCP, the CCP facilitates the exchange of settlement variation and collects initial margin, which reduces the accumulation of debt in the system and collateralizes potential future exposures, respectively. By requiring clearing members to have sufficient skin in the game to cover their risk-taking through the financial safeguards waterfall, CCPs provide incentives to those members to effectively manage their risks. Central clearing does not concentrate risk, but promotes the management of risks in a manner that supports financial stability and reduces systemic risk.

The majority of CCPs follow a similar approach in structuring their financial safeguards waterfalls for addressing potential clearing member default losses. The resources and tools comprising the financial safeguards waterfall create a pre-defined and transparent system of protections established in a CCP's public rulebook that align market participants' incentives with the CCP's financial stability interests. The financial safeguards waterfall is designed to promote these incentives in business-as-usual and stressed market conditions, while ensuring that clearing members' participation in the default management process, if necessary, is aligned with the best interest of the broader central clearing system. A CCP balances the size of its skin in the game against the moral hazard risk of market participants not paying for their risk-taking. As noted above, a CCP's skin in the game indicates the CCP's confidence in its risk management practices and should not be sized as a significant loss-absorbing tool. Further, given CCPs' public rulebooks and the regular disclosures that are made to clearing members from CCPs, members are able to assess their potential liabilities in the event of a clearing member default – information that is largely unavailable outside of a centrally cleared market structure.

2.1 Waterfall Layers Encourage Prudent Risk Management

Except in the extremely rare event of a clearing member default, a CCP maintains a matched book. Thus, since a CCP's core function is to manage risk, not create risk, it is inappropriate to suggest that a CCP's skin in the game should be sized in the same manner as risk-takers. Clearing members' default fund contributions are sized based on their own and their customers' risk-taking, which is designed to incentivize them to manage the risks they bring to the CCP. In contrast, supporting financial stability is inherent to a CCP's role, since its franchise value is based on its success as a risk manager. This includes the ability to mitigate the risk of loss to non-defaulting clearing members and their customers in event of a clearing member default.⁵ This arguably negates the need for CCPs' skin in the game, yet many CCPs still contribute capital to their financial safeguards waterfalls. When evaluating a CCP's skin in the game, the focus must be on preserving the balanced incentives of the historically successful central clearing model for market participants to effectively manage their risks.

⁵ *The negative ramifications to a CCP's franchise value of a default event that results in mutualization is discussed in Section 3 below.*

The carefully calibrated structure of the rules-based financial safeguards waterfall is designed to maintain this balance:

• **Settlement Variation & Initial Margin:**⁶ The once daily, or more frequent, exchange of settlement variation and collection of initial margin by a CCP incentivizes market participants to understand and actively manage both their current risk exposures (i.e., mark-to-market) and their potential future risk exposures. The exchange of settlement variation also limits the accumulation of debt in the system, which serves to minimize potential losses in the event a clearing member fails to meet its obligation to the CCP. Initial margin is designed to cover at least 99% of a portfolio's potential future exposures in liquidating a defaulted clearing member's portfolio. In addition to minimizing the risk of loss, the exchange of settlement variation and collection of initial margin are important risk management incentives for both clearing members and their customers because the timeliness of the obligations require clearing members and customers to constantly manage their risk exposures on a daily basis. This is particularly true where customer gross margin (i.e., one customer's exposures cannot offset another unaffiliated customer's exposures) is collected by a CCP, as is the case at CME Clearing, since customer exposures are independently collateralized by each customer taking the risk. In contrast, customer net margining, particularly where it is financed, undermines incentives for customers to manage their risks, while also reducing the amount of initial margin collateral held at a CCP.

CME Clearing's initial margin requirements are designed to be commensurate with the risks of each portfolio. For example, CME Clearing imposes additional initial margin requirements for concentration risk, which are designed to ensure that market participants with concentrated exposures are properly supporting and actively managing them, while also accounting for potential additional related close-out costs.⁷ In addition, CME Clearing imposes additional initial margin requirements on clearing members with large potential stress exposures to address tail risks that are captured via its stress testing. The adequacy of CME Clearing's initial margin requirements has been repeatedly validated in periods of stress, including during the 2008 Global Financial Crisis and COVID-19 market volatility in March and April 2020.⁸

• **CCP Skin in the Game:** In the event of a clearing member default, the defaulter's pre-funded resources – initial margin and default fund contributions – would be used first to cure the loss. In the unlikely event these resources do not cover all of the loss, in accordance with the CCP's rulebook, a CCP would use its own contributed capital to satisfy the loss. At CME Clearing, losses of this magnitude would require market stresses well beyond those experienced during the 2008 Global Financial Crisis and the COVID-19 market volatility in March and April 2020 to occur. By making pre-funded, first-loss capital contributions that would be used prior to the non-defaulting clearing members' default fund contributions, CME Clearing and other CCPs demonstrate their confidence in their risk management practices and default management process.⁹ CCPs are transparent about the size of their contributions and their usage (i.e., as defined in their rulebooks), allowing clearing members and customers alike to evaluate their risks and select their CCPs accordingly.

6 Initial margin is also commonly referred to as "performance bond" in the CME Rulebook and other CME Clearing documentation.

7 Compare with Credit Suisse Group AG, Credit Suisse Group Special Committee of the Board of Directors Report on Archegos Capital Management, (July 2021) (noting, the failure to implement dynamic margining for Archegos Capital Management's swaps portfolio that would have addressed the substantial concentration risk of the portfolio), available at <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/investor-relations/financial-disclosures/results/csg-special-committee-bod-report-archegos.pdf>.

8 See CME Group, Stability in Times of Stress: CME Clearing's Anti-Procyclical Margining Regime (May 2021) (noting, during the COVID-19 pandemic, CME Clearing maintained robust initial margin coverage, as the portfolio-level backtesting coverage for the 12-month period ending on June 30, 2020 stood at 99.97% for Base products and 99.85% for IRS products), available at <https://www.cmegroup.com/clearing/files/stability-in-times-of-stress-cme-clearings-anti-procyclical-margining-regime.pdf>.

This paper examines how despite unprecedented volatility in March and April 2020, CME Clearing successfully performed its core risk management functions in a manner that supported financial stability and reduced systemic risk, a result due, in part, to its anti-procyclical margin methodologies. In particular, the paper illustrates the appropriateness of CME Clearing's initial margining practices by evidencing the relatively modest size of initial margin increases as compared to the unprecedented volatility observed in March and April 2020.

9 More information about the appropriate approach to sizing a CCP's skin in the game is provided in Section 3 below.

- **Pre-funded Mutualizable Default Fund:** In the unlikely event losses remain uncovered after the application of the defaulted clearing member's pre-funded resources and the CCP's capital contribution, a CCP would use the mutualizable default fund contributions of non-defaulting clearing members. Participating in the benefits of the central clearing model, including price transparency, multi-lateral netting, and counterparty risk mitigation, requires a level of loss mutualization among clearing members for potential tail risk events. Mutualization itself is a fundamental benefit of central clearing as it reduces the impact of a counterparty default to any single individual counterparty. Importantly, it also encourages clearing members to actively participate in a default management process by submitting quality bids in an auction to efficiently close-out the defaulter's portfolio in order to reduce the likelihood that any losses persist that may trigger the use of their default fund contributions. The requirement to post pre-funded default fund resources also further incentivizes clearing members to actively manage their own and their customers' positions in the derivatives contracts they carry on their books. Ultimately, the default fund creates risk management incentives that are aligned with the best interests of the broader central clearing system to support financial stability and reduce systemic risk.

CME Clearing's default funds are designed to cover the tail risk, defined as the potential stress losses in excess of initial margin under extreme but plausible market conditions (i.e., stress shortfall). These potential losses are measured by stress tests that capture the unique risks of its clearing members' portfolios. Stress test scenarios include historical and hypothetical scenarios that are selected, in part, based on the derivatives contracts cleared by a CCP. Historical scenarios commonly include: the 2008 Global Financial Crisis, the 1987 crash, the Long-Term Capital Management failure, and the COVID-19 market volatility in March and April 2020. Hypothetical scenarios extend beyond historical events by breaking assumptions of correlations and risk offsets that are used to calculate initial margin requirements. CME Clearing, like all systemically important DCOs, sizes its default funds to cover, at a minimum, the losses caused by the simultaneous default of the two clearing members (and their affiliated clearing members) with the largest shortfalls (i.e., a Cover 2 standard). Each clearing member's specific default fund requirement is sized based on the risk exposures it brings to CME Clearing itself and on behalf of its customers. Pre-funded default fund requirements increase and decrease, respectively, as a clearing member's risk-taking changes. Additionally, similar to a CCP's skin in the game, the default fund is pre-funded and dedicated to covering losses associated with a clearing member's failure.¹⁰

- **Assessment Powers:** In addition to the pre-funded default fund, a CCP is able to call its clearing members for additional resources, commonly called "assessments." Assessments are a transparent, rules-based tool that provides funding to the CCP in the unprecedented event the pre-funded layers of the financial safeguards waterfall are exhausted with uncovered losses outstanding. A CCP's assessment powers further incentivize clearing members to actively participate early in the default management process by submitting quality bids in an auction to efficiently close-out the defaulter's portfolio in order to reduce the likelihood that any losses persist that may trigger calls for assessments. Failure to meet an assessment call could itself result in a clearing member being declared in default, resulting in the liquidation of its portfolio at the CCP and potential impacts to the risk profile of the firm due to positions being unwound.

CME Clearing's assessment powers are designed to support the ongoing continuity of its clearing services if at least four of the largest clearing members were to simultaneously default, a scenario that would require the failure of multiple global systemically important banks.¹¹ Each clearing member's specific potential assessment obligation is transparent to it and based on the risk exposures it brings to CME Clearing itself and on behalf of its customers. CME Clearing evaluates a clearing member's ability to meet its assessment obligation on an ongoing basis. On average, the assessment obligations of CME Clearing's bank-affiliated clearing members represent less than 1% of the bank's Tier 1 capital.

¹⁰ Notably, CME Clearing also has a first priority unencumbered lien on the funds it holds for initial margin and default funds, which is designed to provide prompt access to collateral in the event a clearing member fails.

¹¹ Consistent with the views of the majority of global policy-makers, CME Clearing believes recovery is preferable to resolution and has designed its assessments powers to incentivize clearing members to avoid such a negative result.

- **Other Rules-Based Tools:** After assessments, a CCP's other default management tools available to satisfy any remaining uncovered losses and restore a matched book provide further incentives for market participants to actively participate early in the default management process. Variation margin gains haircutting ("VMGH") allocates losses fully across all market participants with net residual portfolio gains to minimize the impact to any one market participant while maintaining continuity of a CCP's clearing services. The risk of a haircut to net residual gains incentivizes those with potential gains on contracts opposite the defaulter's position to actively participate in the default management auction to avoid a reduction of their residual gains on their portfolio. Similarly, the ability of a CCP to tear up a subset of positions to re-establish a matched book incentivizes market participants to actively participate in the default management auction to avoid the forced liquidation of their positions used to risk manage their exposures.

CCP Risk Management Standards

Risk management principles for CCPs have been defined by the Committee on Payments and Market Infrastructures (CPMI) and International Organization of Securities Commissions (IOSCO) in the Principles for Financial Market Infrastructures.* The PFMI have been adopted by local regulators into laws and regulations, including by the CFTC. CCPs, such as CME Clearing, publish public qualitative and quantitative disclosures relating to the PFMI which describe and provide data related to their risk management practices. These disclosures provide the market transparency into each CCP's risk management philosophy and practices.**

* CPMI-IOSCO, *Principles for financial market infrastructures* (Apr. 2012).

** See <http://cmegroup.com/pfmidisclosure> and <http://www.cmegroup.com/clearing/cpmi-iosco-reporting.html>.

Market participants must effectively manage the risks in their cleared portfolios, which is the core of the design of the financial safeguards waterfall. A CCP deploys a number of other proactive risk management tools to support the financial safeguards waterfall that are designed to monitor, manage, and mitigate these risks. They include, among others, credit risk evaluations and monitoring of clearing members and other counterparties, real-time risk monitoring and credit controls, liquidity risk management, and daily stress testing. The entire risk management framework employed by CCPs aims to support the stability of the broader financial system and mitigate systemic risk, in part, by reducing the likelihood and impact of a clearing member default. Given that the franchise value of a CCP is dependent on the integrity of its markets and consequently, its success as a risk manager, the risk management protections CME Clearing provides are dependent on the effectiveness of these risk management tools, including the financial safeguards waterfall.

3. Appropriately Sizing a CCP's Skin in the Game

The franchise value of a CCP is dependent on the integrity of its markets. A CCP and its owners benefit from financial stability in any and all market conditions. Franchise value and reputational risk are intrinsic incentives for a CCP to employ prudent risk management practices, whether in establishing initial margin levels or sizing its default fund. A lack of confidence in a CCP's overall risk management would likely deter clearing members and clients from participating in the markets it clears.

While a default fund mutualization event has never occurred at a U.S.-domiciled DCO, there have been rare instances when default losses have been mutualized by non-defaulting clearing members at CCPs located in non-U.S. jurisdictions. The only relatively recent event was idiosyncratic in nature, rather than a result of a broader market stress event, and the financial impact on the CCP, including its parent,¹² dwarfed the size of any potential capital contribution to its financial safeguards waterfall that has been contemplated or proposed to date.¹³ The costs accruing to the CCP in this event exemplify why a CCP has such strong motivation to mitigate the likelihood of a mutualization event. In performing its risk management function, a CCP's commercial interests and incentives are inherently tied to effectively managing risk in a manner that reduces negative consequences for non-defaulting clearing members and supports financial stability.¹⁴

However, a CCP's first-loss contribution to the financial safeguards waterfall is important as it can instill market participants' confidence in the CCP's risk management practices. In sizing a CCP's skin in the game, it is important to avoid subsidizing the risk-taking of market participants in a manner that undermines the carefully calibrated risk management incentives for market participants that are otherwise present in the centrally cleared market structure. Therefore, the following principles should drive any decision by a CCP to make a skin in the game contribution:

- **Preservation of Risk Management Incentives:** The size of a CCP's skin in the game cannot undermine the incentives created by the centrally cleared market structure for market participants to effectively manage their risks; and
- **Market Risk Neutral Risk Manager:** The size of a CCP's skin in the game must recognize that on a day-over-day basis, a CCP is market risk neutral and operates a matched book – CCPs are risk managers, not risk-takers.

12 See John McParland, *Challenging Skin in the Game*, WFE Focus (Apr. 2021), (noting, "Nasdaq stock declined approximately 14.6% in the aftermath of the Einar Aas default in September of 2018"), available at <https://focus.world-exchanges.org/articles/risk-default-governance>.

13 Following the member default at Nasdaq Clearing in September 2018, the CCP was fined \$36 million*, a loss 3.4 times larger than the \$8.1 million U.S. Dollar-equivalent of the CCP's skin in the game that was already lost due to the member default. In addition to regulatory fine imposed on the CCP, a recent industry paper analyzing CCPs' skin in the game noted Nasdaq's stock declined approximately 14.6% in the immediate aftermath of the default. *Id.*

If the 14.6% stock decline occurred immediately following the default on September 11, 2018, multiplying Nasdaq's market cap on that day (i.e., \$15.42 billion) by the 14.6% associated decline, results in a \$2.25 billion loss to Nasdaq's shareholders. When combining the skin in the game used in managing the default (i.e., \$8.1 million)**, the subsequent fine (i.e., \$36 million), and the resulting loss in stock value (i.e., \$2.25 billion), the default resulted in a loss of approximately \$2.3 billion U.S. Dollar-equivalent, roughly 11 times larger than the CCP's entire default fund on that day.*** To put this into context of broader market trends at the time, the S&P 500 financials index only declined by 4% over the same period.**** In addition to the financial impact outlined publicly, Nasdaq has also disclosed that they had to retain experts to assist in the overall improvements of the risk management practice.

* According to the following disclosure on Nasdaq's website: <https://www.nasdaq.com/solutions/nasdaq-clearing-risk-management>.

** According to the following disclosure on Nasdaq's website: <https://www.globenewswire.com/fr/news-release/2018/09/14/1571199/0/en/Nasdaq-Statement-Regarding-Member-Default.html>.

*** The size of the default fund on the day of default was estimated to be \$206.7 million U.S. Dollar-equivalent and \$124.1million U.S. Dollar-equivalent was utilized in the wake of the default, roughly 60% of the default fund according to this disclosure on Nasdaq's website: <https://www.nasdaq.com/solutions/nasdaq-clearing-risk-management>.

**** According to the following historical data on the S&P 500's website: <https://www.spglobal.com/spdji/en/indices/equity/sp-500-financials-sector/#overview>.

14 See John McParland, *Challenging Skin in the Game*, WFE Focus (Apr. 2021) (noting, the question, "[h]ow much Skin in the Game is enough to accomplish conservative behaviour?" to which the answer is, "[n]one. Senior CCP executives at major global CCPs are clearly and sufficiently motivated by the incentive compensation programs of their employers. If Skin in the Game were zero, CCP executives at major CCPs would be more than motivated to be prudent and conservative. Publicly available data speaks for itself. Analysing CCPs' levels of Skin in the Game for statistically significant levels of behavioural attributes is a fool's errand"), available at <https://focus.world-exchanges.org/articles/risk-default-governance>.

Clearing member's default fund requirements are sized based on the risk they bring to the CCP, whereas a CCP does not bring risk to their markets. Consequently, the size of a CCP's skin in the game should be equivalent to the size of the minimum clearing member contribution to the default fund, which would be applied to a clearing member that is market risk neutral. However, to demonstrate confidence in their risk management practices, many CCPs have decided to go beyond the minimum contribution that is dictated by their market risk neutral position. Thus, a CCP's skin in the game is commonly equivalent to at least the median and/or average contribution of clearing members to the default fund.

Suggestions by certain market participants that CCPs should make arbitrary, excessively large skin in the game contributions, driven by the risk-taking of market participants' exposures, are inappropriate. In particular, some market participants have made misguided suggestions that a CCP's skin in the game should be sized as a function of the aggregate size of its default fund, which is driven by market participants' risk-taking. These suggestions fail to consider a CCP's market risk neutral role, the successes of the central clearing model, and the moral hazard created by out-sized CCP contributions. In particular, employing out-sized CCP contributions would reduce incentives for market participants to actively manage their risks and participate in the default management process, since non-defaulting clearing members' default fund resources would not be reasonably at risk in a default. In a stress event, when appropriate incentives and, in turn, a successful default management process are paramount, this misalignment of incentives is likely to have negative implications on financial stability and systemic risk.

4. Conclusion

Skin in the game for risk-takers is at the core of risk management throughout the financial system and fundamental to the success of the centrally cleared model. Any discussion of CCPs' skin in the game must ensure that the risk management incentives imposed by the central clearing model for market participants are maintained. A clearing member's skin in the game should scale with the risks it brings to the CCP and should reasonably be at risk in an extreme stress event to preserve their risk management incentives. In contrast, a CCP's skin in the game should demonstrate the CCP's confidence in its risk management practices without reducing market participants' risk management incentives. Central clearing, and the incentives it provides to market participants, have consistently supported financial stability and reduced the risk of contagion, particularly those arising in uncleared markets during past stress events. Examples include the 2008 Global Financial Crisis and COVID-19 market volatility in March and April 2020. The failure to recognize these historical successes by suggesting that a CCP's skin in the game should be based on market participants' risk-taking will reduce their risk management incentives and in turn, could undermine financial stability.

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