



Central Clearing: Recommendations for CCP Risk Management



November 2018



Central Clearing: Recommendations for CCP Risk Management

CONTENTS

EXECUTIVE SUMMARY 2

INTRODUCTION 3

THE NASDAQ DEFAULT: A SUMMARY 4

ISSUES RAISED BY THE NASDAQ DEFAULT AND RECOMMENDATIONS 5

 1. Membership criteria 5

 2. CCP governance of self-clearing members..... 6

 3. Margin adequacy 6

 4. Regulatory oversight..... 8

 5. Risk management of members by CCPs 9

 6. Default management including design and testing 10

 7. Skin in the game 10

CONCLUSION 11

About FIA

FIA is the leading global trade organization for the futures, options and centrally cleared derivatives markets, with offices in Brussels, London, Singapore and Washington, D.C.

FIA's mission is to:

- *support open, transparent and competitive markets,*
- *protect and enhance the integrity of the financial system, and*
- *promote high standards of professional conduct.*

As the leading global trade association for the futures, options and centrally cleared derivatives markets, FIA represents all sectors of the industry, including clearing firms, exchanges, clearing houses, trading firms and commodities specialists from more than 48 countries, as well as technology vendors, lawyers and other professionals serving the industry.



EXECUTIVE SUMMARY

This paper is an update of FIA's Global CCP Risk Position Paper¹ ("FIA CCP Risk Paper") published in April 2015. In light of a recent default that touches upon several previous recommendations and that brings to light new topics, FIA is publishing this updated analysis to help inform the public discussion regarding the proper management of central counterparty ("CCP") risk.

On September 11, 2018, Nasdaq Clearing AB ("Nasdaq Clearing") placed a member of its Nordic market in default. The losses were sufficiently large to exceed the margin provided by the defaulter and the CCP's own skin in the game and require the use of the commodities default fund. This was the first use of a default fund by a major CCP since a default on KRX, the South Korean exchange, in 2013².

This paper summarizes the publicly disclosed facts of the default³ and makes recommendations in the following areas for CCP risk management, including:

- Membership criteria;
- CCP governance of self-clearing members;
- Margin adequacy (particularly in low-liquidity markets and in respect of concentration risk and correlation risk);
- Regulatory oversight;
- Risk management of members by CCPs;
- Default management including design and testing; and
- Skin in the game.

"These recommendations aim to improve the risk management of every clearinghouse globally and to support the betterment of the clearing system going forward."

- Walt Lukken, FIA President & CEO

1 https://fia.org/sites/default/files/content_attachments/FIAGLOBAL_CCP_RISK_POSITION_PAPER.pdf.

2 In contrast to this default, KRX did not have a prefunded CCP skin in the game layer.

3 <https://business.nasdaq.com/updates-on-the-Nasdaq-Clearing-Member-Default/index.html>



Central Clearing: Recommendations for CCP Risk Management

INTRODUCTION

CCPs are key institutions in the global financial system and their importance has only grown since the 2009 Pittsburgh summit when the G20 nations committed to mandatory clearing of certain products. The role of CCPs in centralizing and managing risk means that clearing of financial products can significantly improve financial stability, something recognized by the G20—though clearing of a product necessarily requires that the relevant CCP engage in strong risk management.

FIA has been developing best practices in risk management by CCPs for several years (See Box 1). In April 2015, FIA published a position paper on CCP Risk setting out recommendations for CCPs to manage risk in the most effective way.⁴ In this paper, we examine the Nasdaq default in line with FIA's 2015 recommendations, while highlighting considerations that will support international best practice for CCP risk management and what further recommendations we can develop from these events.

The 16 recommendations from the 2015 Position Paper:

- i) Transparency and consistent disclosures as overarching themes;
- ii) Pre-default data transparency;
- iii) Post-default transparency;
- iv) CCP rulebook structure consistency;
- v) Continuity as the ultimate goal;
- vi) Provision for non-default losses;
- vii) Prevention of CCP liquidity shortfalls;
- viii) Clearing Members—Limited liability;
- ix) Gains haircutting;
- x) Partial tear-up;
- xi) Conflicts of interest and CM input on CCP risk management decision-making;
- xii) Limits on CCP Risk assumption;
- xiii) Voluntary clearing and addressing the clearing of complex products;
- xiv) Initial margin;
- xv) Skin in the Game; and
- xvi) Protection of initial margin and collateral generally.

⁴ https://fia.org/sites/default/files/content_attachments/FIAGLOBAL_CCP_RISK_POSITION_PAPER.pdf



Central Clearing: Recommendations for CCP Risk Management

THE NASDAQ DEFAULT: A SUMMARY

Nasdaq Clearing is a central counterparty for clearing various derivatives. These products include Nordic derivatives contracts and certain other commodities contracts. Nasdaq Clearing divides its products between three services each with its own segregated default fund. This default took place in the commodities service.

In this case, a Nasdaq participant, Einar Aas, held a portfolio of proprietary positions that contained a large spread position between Nordic and German power contracts as well as some carbon credits. In addition, Mr. Aas was a natural person—not a legal entity—serving as a clearing member of Nasdaq Clearing, responsible for clearing his own trades. He did not have any financial institution intermediating his relationship with Nasdaq Clearing. It is noted that Nasdaq Clearing requires a significantly higher level of net worth from natural persons who wish to self-clear than the level of capital from financial institutions. In line with Nasdaq Clearing’s publicly disclosed margin concentration risk limit policy, Mr. Aas’ positions did not trigger a concentration risk margin add-on.

On Monday, September 10, 2018, there was a large movement in the Nordic and German power market (the spread between the two contracts rose to generate a margin requirement 1.4 times the level of initial margin held for the relevant contracts.) The spread margin level was set at more than twice the worst ever 2-day movement observed by Nasdaq Clearing. This movement and the consequent change in spread led to significant losses in Mr. Aas’s portfolio, generating an intra-day call for additional margin from him. Mr. Aas failed to meet the margin call on September 10. On the morning of Tuesday, September 11, 2018, at 8.24 am Nasdaq Clearing declared Mr. Aas to be in default. In accordance with its default management procedures, Nasdaq Clearing initiated an auction on Tuesday, September 11 to price and close-out Mr. Aas’s portfolio. The portfolio of transactions was closed out on Wednesday evening after a second auction process, the first process reportedly failing to produce adequate bids. The Margin Period of Risk that Nasdaq Clearing’s margin model applied to German and Nordic power was two days. Four members were considered suitable to bid in a closed auction. It should be noted that Nasdaq Clearing has signed agreements in place with six members for those members to participate in an auction. Following the auction, the close out of the portfolio resulted in a loss for Nasdaq Clearing that exceeded both Mr. Aas’s posted margin and his default fund contribution. The balance of remaining loss was thus absorbed by the mutualized default fund contributions of the non-defaulting members (approximately EUR 107 million) and the EUR 7 million “skin-in-the-game” contribution of capital from Nasdaq Clearing.

On September 14, 2018, Nasdaq Clearing temporarily contributed an additional SEK 200 million (approximately EUR 20 million) to its “skin in the game,” in addition to the EUR 7 million that Nasdaq Clearing already had replenished. The non-defaulting members of Nasdaq Clearing also fully replenished the commodities default fund.

Following the conclusion of its default process, Nasdaq Clearing has made claims against Mr. Aas as a claimant and has recovered some sums, for the purpose of passing on to its non defaulting members in compensation for their default fund contributions.

Nasdaq Clearing has subsequently instructed Oliver Wyman, a consultancy firm, to review its risk and default management processes in light of the default.

This default has highlighted certain areas of CCP risk management that deserve further attention. Particular sources of concern are i) risk management of self-clearing members; ii) whether given margin collected properly reflects concentration risk; iii) whether the Margin Period of Risk properly reflects the volatility of given products; iv) whether auction processes are effectively designed to minimize losses to the clearing system; v) whether CCPs have sufficient skin in the game to align incentives to minimize the risk of such defaults. FIA supports full transparency of default analyses from CCPs to enable the improvement of risk management going forward. FIA



Central Clearing: Recommendations for CCP Risk Management

below examines some of the issues earlier described in the FIA CCP Risk Paper that may relate to this default. FIA below examines some of the issues earlier described in the FIA CCP Risk Paper that may relate to this default.

ISSUES RAISED BY THE NASDAQ DEFAULT AND RECOMMENDATIONS

In the 2015 FIA CCP Risk Paper, FIA made a series of recommendations on best practice for CCPs to manage risks effectively, taking into account the views of FIA clearing members as risk managers with cross-product and cross-market insight. This default highlighted some new issues. In response, FIA has developed further recommendations below for best practice for the benefit of all clearinghouses:

1. Membership criteria

The admission of a clearing member who is not eligible for full clearing membership in order for them to solely clear their own trades (“self-clearing”) in the CCP requires a higher level of scrutiny by the CCP. A self-clearing member does not have the buffer of a financial intermediary carrying out risk monitoring. Any market participant that is not capable of having in place meaningful trading and risk controls and credible, separated business functions (such as risk, compliance, trading, operations) which are independent of one another should not be permitted to be a clearing member of a CCP. This issue goes beyond natural persons and implicates some small entities that lack independent risk management capabilities as well.

RECOMMENDATIONS:

1. Participants who lack independent risk management capabilities must be intermediated by a clearing member capable of risk-management the participant’s portfolio. It should be noted that CCP members are not just trading participants but risk managers alongside the CCP—their risk management role is essential in relation to entities which themselves lack their own risk management capacity.
2. CCP membership criteria should not be solely based on financial considerations but also objective assessment of specific capabilities (e.g. risk management, operational capability to monitor and control position, ability to participate in default management, if required, and have independent functions).
3. CCP membership criteria should be fully transparent, detailed and specific in accordance with FIA’s previous calls for transparency.

2. CCP governance of self-clearing members

Self-clearing members may not have the capabilities of full (“general”) clearing members for complex risk management. Even where they have sufficient capability to participate directly in the CCP, they will not have the benefit of an intermediary risk-managing their portfolio. CCPs must thus apply greater scrutiny to self-clearing members and more enhanced and active risk management of such self-clearing members calibrated to the self-clearing members’ risk management capability and level of liquid assets. In cases where a self-clearing member is accepted, CCPs should impose heightened standards on such members and the risk management role of the CCP in respect of such a member should be reflected across the CCP’s rulebook, risk framework and governance.

RECOMMENDATIONS:

1. CCPs who wish to include self-clearing members should develop more stringent provisions in their rulebook, risk framework and their governance to account for the nature of these members.
2. CCPs should not rely exclusively on external credit ratings for monitoring membership but have a robust internally developed credit framework (whether it is outsourced or applied by the CCP’s risk function) for reviewing creditworthiness of participants as well as their access to intra-day and overnight liquidity on an ongoing basis which should be fully transparent to members.
3. There should be clear procedures for managing members whose credit profile deteriorates before default is triggered, utilizing position limits, calling for enhanced margin and/or requiring members to reduce positions (including the imposition of caps) in order to prevent a default.

3. Margin adequacy (particularly in less liquid markets and in respect of concentration risk and correlation risk)

FIA supports CCPs ensuring the defaulter’s initial margin is the primary source of funds to meet the CCP’s loss upon a default. FIA’s position follows the standards set out in CPMI-IOSCO guidance on margin.⁵ There is a place for further structured governance around initial margin models, bringing the quantitative and risk management experience and resources of clearing members into the CCP’s process for developing and enhancing margin models.

Margin should cover market risk over the period that it would take to liquidate a defaulting participant’s positions. A distinction of the risks associated with

5 <https://www.bis.org/cpmi/publ/d163.pdf> - sections 5.2.6 and 5.2.10

the underlying asset should be considered in the margin model of each cleared product. For example, margin models for credit default swaps should have a component addressing liquidity profile and the potential risk of moving from liquid to illiquid market conditions, specific to that market. The length of this period should be based on the ability of the CCP to realistically close-out portfolios given the products' liquidity in stress conditions and be justified by the CCP using metrics such as average daily volume.

Concentration risk must be accounted for by CCPs, and this is best dealt with as part of margin methodologies as this is a direct way in which the CCP can provide incentives for the participants to reduce the size of their positions. In addition, cross-product netting of margin should be considered from the perspective of risk management and underlying economic rationale, not margin efficiencies. Members should know the size of portfolio margin offsets for correlated but non-convertible products⁶ in relation to the total margin posted and also what amounts would have to be covered by the default waterfall if the two members with the largest amounts of such portfolio margin offset defaulted.

An appropriate price history should be considered to capture periods of both low and heightened volatility. In the absence of such historic events, CCPs should consider modelling hypothetical stress events in their margin framework.

RECOMMENDATIONS:

1. Realistically determined Margin Periods of Risk and liquidity add-ons are essential to prudent margin frameworks. Margin frameworks should consider position concentration relative to product liquidity in determining the amount of concentration related add-on that should be charged and should be justified using credible metrics.
2. Current involvement of member employees in risk committees is inadequate for ensuring reliable and sufficiently robust margin methodologies; CCPs should ensure a high level of transparency of their margin methodology with members and establish fora whereby input from members on the margin methodology can be considered; CCPs should be transparent about i) the amount of the total margin posted; ii) the two largest amounts of concentration margin; iii) the total amount of portfolio margin offset given for correlated but non-convertible products; and iv) the two largest amounts of members portfolio margin offsets for correlated but non-convertible products that would have to be covered by the default waterfall in case correlations broke down and the member defaulted.

⁶ 'Non-convertible products' are derivatives on underlying instruments or underlying commodities, which are correlated, but cannot simply be converted into each other. For example futures on the same equity index with different contract sizes would be considered as 'convertible products' whereas futures regarding two different commodities would be considered 'non-convertible products'.

3. In addition, independent validation of margin models should be mandated on an annual basis with results shared with the member inclusive risk committee to support enhanced due diligence.

4. Regulatory oversight

Regular and granular level assessment of CCPs is a critical component of CCP supervision by regulatory authorities. In addition to ensuring CCPs align to minimum regulation, the authorities should be providing collaborative thematic reviews with peers across the globe to establish best practice across all aspects of their risk management framework. Stress testing by regulators is an essential aspect of supervising CCPs and thus ensuring financial stability. It is important that regulatory stress testing consider the impact of defaults across a range of scenarios with regard to the resources available to a CCP at various stages of default management as a way to test the resilience of individual CCPs. Though it is important to know that a CCP can ensure its own solvency using special measures (such as assessments on non-defaulting members), it is also important for supervisors to assess if the standard level of resources available to a CCP are also adequate to cover losses in accordance with the CCP's defined coverage model.

Regulatory benchmarking of CCPs on a periodic basis will support best practice across peers globally. We encourage supervisory authorities to consider enriched assessment of CCPs in order to identify and remediate shortfalls in risk policies.

RECOMMENDATION:

Regulators should regularly assess the resources of CCPs in relation to default scenarios utilizing the best practice developed at supra-national level. The use of international standards and tool-kits is particularly important for regulators that are not supervising CCPs based in major global financial centers. Regulators should assess the models and practices of CCPs with regard to risk management standards taking into account the intended outcomes of standards rather than simple compliance with minimum criteria.

5. Risk management of members by CCPs

The role of a CCP is to guarantee the terms of a trade between two parties. This responsibility is supported by specific pillars of risk management. CCPs should have regard to each of these pillars in relation to both their margin model and the sizing of their default fund.

Credit risk management is the pillar which CCPs leverage when initially reviewing a potential clearing member. In addition, it supports the ongoing monitoring of the clearing member's credit quality. CCPs should enhance their monitoring of clearing members to ensure any deviation from the minimum criteria is penalized with additional financial obligations, while supporting access to clearing.

Market risk management is the pillar on which CCPs leverage the financial protection necessary to safeguard themselves and other participants from potential systemic risk following the idiosyncratic risk associated with a member (mitigated by credit risk monitoring) or adverse market movements. An appropriate level of price history should be observed when determining the initial margin levels and aggregate financial safeguards, which should be supported with periods of significant stress to model the shortfall. We welcome efforts by CCPs to optimize their market risk controls in the context of the underlying products they clear.

Liquidity risk management is the pillar on which CCPs leverage to monitor the adequacy of the financial resources available to address potential liquidity shortfalls. A heightened level of focus is necessary to ensure the CCP clearing members have access to liquid assets in periods of stress, i.e. cash and cash equivalent securities. Expansion of their liquidity risk measures on clearing members will mitigate against risk of default.

RECOMMENDATION:

Each CCP should demonstrate the suitability of its entire risk management framework. Further where there is more uniform distribution of risk, the CCP should consider a higher coverage model or should require the larger members to contribute additional margin if their stress loss exceeds a certain threshold, to prevent risk from building up significantly. Similarly, in designing a coverage model, CCPs should consider unsynchronized stress testing results to ensure they have sufficient resources for their defined coverage model.

6. Default management including design and testing

The design and transparency of default management processes, including use of auctions, is critical in minimizing losses. Issues such as the number of participants in an auction, how the defaulter's portfolio is arranged for sale and whether an auction is needed in light of the nature of the product (e.g. for listed, CCP liquidation on exchange is often preferable) are of critical interest to non-defaulting members since they are required to absorb losses resulting from the defaulter's portfolio. Predictability of auction processes and portfolio data sharing will optimize the success of default management and minimize the potential of mutualized risk. Members should be allowed to play a role in deciding the size and composition of the auction group and allowed to weigh the potential benefits of a larger group producing better bids against the potential costs of information leakage.

RECOMMENDATION:

CCPs should consider inviting some member representatives to provide advice to key decision-making bodies for default management (e.g. default management committees), including in respect to size and composition of auction groups (and, if relevant, price setting using loss allocation powers). This advice from members would result in higher quality default management due to the market experience and incentives of members to minimize loss and maintain market stability. However, member participation as advisors should not be mandated under the rules given limited capacity to provide trading resources in some markets.

7. Skin in the game

FIA believes CCP skin in the game should align the interests of CCPs with those of its members. A CCP's contribution to the default resources should therefore be an amount that is calculated by reference to the level of risk being managed by the CCP. Also, for skin in the game to act as an incentive, a significant portion of it should be used ahead of any non-defaulting member resources in the default waterfall. The skin in the game should also be correctly sized for the potential default of self-clearing members taking into account: i) whether self-clearing members are required to provide default fund contributions under the same calculation as other clearing members and ii) the fact that many self-clearing members do not have the financial resources in stressed scenarios which large financial institutions do. In addition, CCP skin in the game must be dynamic and aligned with the level of risk in the CCP's system and recalibrated periodically to account for the changing level of the default fund. All participants, including clearing members and CCPs, aim to manage risk in the clearing system. CCPs' decisions in respect of margin methodology, default fund sizing and other risk tools have direct impacts on the level of risk in the system and also the level of

business from which CCPs generate profits. In the interests of fairness to non-defaulting members, sizing of skin in the game should be a reflection of the CCP's confidence in its own risk management framework and incentivize best practice. CCPs should not reduce member contributions in response to an increase in skin in the game and so increases in skin in the game should not lead to fewer resources provided by non-defaulters.

RECOMMENDATIONS:

1. CCPs should establish an appropriate amount of skin in the game with the intention of calculating a skin in the game layer in a way that reflects the level of risk in the CCP's system rather than maintaining a fixed amount. De minimis amounts of skin in the game which are justified on the basis of providing an incentive to employees of the CCP to be prudent are sub-optimal since they are not dynamic and reflective of the CCP's level of activity and risk profile.
2. CCPs should provide skin in the game at a level determined with regard to fairness towards non-defaulters and robustness of the CCP, not only to the minimum level currently required by regulation where it exists.
3. Where a CCP allows self-clearing membership, the skin in the game amounts should realistically take into account the possibility of default by self-clearing members. Since for such self-clearing members the CCP must effectively act as a general clearing member or first line of defence, in terms of trading oversight and risk management for the self-clearing member, the CCP should be more stringent in ensuring it has sufficient financial resources available to cover defaults of self-clearing members.

CONCLUSION

FIA and its members are strong proponents of a healthy and safe clearing system that mitigates systemic risk for the cleared derivatives business. These recommendations provide a roadmap for regulators, policy makers and clearinghouses to strengthen the clearing system and minimize risk to the public.



BRUSSELS

Office 621
Square de Meeûs 37
1000 Brussels, Belgium
+32 2.791.7572

LONDON

Level 28, One Canada Square
Canary Wharf
London E14 5AB
Tel +44 (0)20.7929.0081

SINGAPORE

Level 21, Centennial Tower
3 Temasek Avenue
Singapore 039190
Tel +65 6950.0691

WASHINGTON

2001 Pennsylvania Avenue NW
Suite 600
Washington, DC 20006
Tel +1 202.466.5460