

Chicago Fed Letter

Managing risk in global financial markets: CCP governance, supervisory stress testing, and default management auctions

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The second annual Symposium on OTC Derivatives was held in Shanghai on June 26, 2018. This event was cosponsored by the People's Bank of China and the Federal Reserve Bank of Chicago and hosted by CCP12 (The Global Association of Central Counterparties). Its three panels focused on central counterparty (CCP) governance, supervisory stress testing, and default management auctions.

The 2018 symposium attracted a distinguished group of speakers and attendees. This event was held under the Chatham House Rule to encourage free and frank discussion. Therefore, with the exception of those who gave keynote speeches, speakers are not identified by name.

The symposium opened with welcome remarks from Tang Zhiping, secretary-general, Shanghai Municipal People's Government, and Charles Evans, president and CEO, Federal Reserve Bank of Chicago. Serving as the master of ceremonies, Lee Betsill, chair, CCP12, introduced two keynote speakers: Anna Paulson, senior vice president, associate director of research, and director of financial markets, Federal Reserve Bank of Chicago, and Ji Zhihong, director general of the Financial Market Department, People's Bank of China. In

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addition, Kay Swinburne, member, European Parliament, and vice chair of its Committee on Economic and Monetary Affairs, delivered a keynote address.

Paulson's speech centered on the continuous change and resilience of financial markets; her remarks focused on the post-crisis reform to the money market mutual fund industry in the United States.¹ Zhihong's speech highlighted the quick expansion of China's financial derivatives market and the key role of central clearing in its continued growth. Finally, Swinburne's speech was on current European efforts related to clearing and their cross-border implications.

Central counterparty governance

The first panel explored the meaning of CCP governance, the aim of CCP governance policies, and their implications.

When considering the appropriate models of CCP governance, the panelists noted it was important to specify who has the power, why they have it, and how they exercise it. Power can lie with different

constituencies at CCPs, including board members, clearing members and end-users, and even technology providers. Because of this, CCPs have a multiplicity of corporate goals that affect their governance models, making it challenging to determine which CCP governance model is best, noted one speaker.

Another speaker pointed out that regulators and governments also exert influence on CCP governance. As an example, that individual highlighted the industry impact that the *Principles for Financial Market Infrastructures* (PFMIs) have had. The PFMIs were issued in 2012 by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO)—two highly influential standard-setting bodies.² Key public sector goals set by organizations such as CPMI–IOSCO include protecting investors; ensuring fair, efficient, and transparent markets; and reducing systemic risk. Other public sector goals may include wanting to promote a particular financial center or to minimize societal costs in the event something goes wrong with a CCP. The challenge, however, is that there are limits to what CCP governance can achieve. And according to this speaker, there is no evidence that any single governance model best accomplishes any particular public sector goal. What should regulators and governments do in light of this realization? The speaker argued that they should allow for experimentation in governance choice while both minimizing the probability of CCP failure and maximizing private sector payouts if a CCP fails.

The panel also briefly discussed the additional recommendations, often referred to as the “PFMIs 2.0,” put forth by CPMI–IOSCO.³ One speaker argued against espousing a single CCP governance model, explaining that a particular jurisdiction’s model should not necessarily be prescribed in another’s. The speaker added that as far as large CCPs go, resolving the failure of one of these will ultimately be a political issue dealt with at the national level (despite its global repercussions). Another panelist pointed out that there appears to be an “internal inconsistency” in CPMI–IOSCO’s additional recommendations. According to the panelist, despite the prescriptiveness of the PFMIs 2.0 on governance issues, CPMI–IOSCO also includes an explanatory note that says no single set of governance arrangements is appropriate in all market jurisdictions.

The panelists then offered their views on what the aim for CCP governance policies should be. One panelist, citing decades of experience in the industry with various governance models, argued that the aim of CCP governance was less about designating a specific model and more about having a solid understanding of the four fundamental aspects of risk management: who clears, which products, with how much margin, and the nature and extent of default resources. Another panelist noted governance policies are not only about managing risk effectively but also about managing the interests of various constituencies. A third panelist agreed with the other two, but added that governance is also about addressing three other broad issues: conflicts of interest, a principal-agent problem, and an asymmetric information problem.⁴

Ultimately, panelists agreed that different CCPs may need different governance structures, depending on the market in which they operate. They also noted that the ownership structure of a CCP could influence its governance structure.⁵

One audience member asked about the merits of including central banks in the process of designing CCP governance structures. Panelists cautioned against involving a central bank that does not have legal authority—otherwise there could be a conflict between the supervisory authority over the CCP and the central bank. Moreover, a panelist cautioned that if the central bank has never supervised a CCP, it could impose views gained from the supervision of banks, which could be problematic.

Finally, the panelists commented on how CCP governance actually works, with much attention paid to how CCP risk committees operate. Panelists noted that risk committees serve CCPs primarily in two ways. The first is by doing what someone called “business-as-usual activities,” which include

reviewing policies, products, models, and risk-management procedures; the other involves deciding how to respond during a crisis. While discussing risk committee activities, panelists disagreed about committee member independence. One panelist, who sat on a risk committee and was employed at a clearing member firm, said that risk advice that committee members give is independent of their employer's interests. But another panelist questioned whether it is truly feasible to have "a Chinese wall within oneself."

Supervisory stress testing

The second panel opened with a mapping exercise and discussion about CCP interconnectedness. According to one speaker, mapping the links across CCPs, as well as between their clearing members, is the first step toward developing comprehensive global stress tests. The mapping exercise showed that the degree of interconnectedness across and within CCPs is significant. For instance, one financial institution was connected to 458 others through its memberships at various CCPs.

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The mapping exercise also revealed a number of other aspects of interconnectedness in the system. For one, the exercise showed that some globally systemically important banks (G-SIBs) are important in some regions but less so for the system worldwide. It also revealed that the degree of interconnectedness varies depending on whether the focus is on clearing

members at the subsidiary or parent level; the clearing system appeared more interconnected at the parent level.

After highlighting some of the largest clearing members across different regions, the presenter demonstrated how publicly available data on CCP memberships can also be used to run simulations that aid in stress testing. It was noted that simulations are especially helpful for liquidity optimization in the financial system. For instance, one simulation considered the default of a major clearing member and how liquidity demands would impact other players in the system. The presenter went on to explain that existing simulations of CCP markets are generally run within small pieces of the system or within individual CCPs.

CCP representatives on the panel then provided an overview of how stress tests are run within their respective CCPs. At least two panelists pointed out that their CCPs run hundreds of stress tests every day on each clearing member's portfolio, as well as across the financial products traded through them. In addition to running traditional tests to measure potential default losses and subsequent liquidity needs, CCPs also use stress testing for other purposes, a panelist observed. For instance, stress tests are used to understand a CCP's ability to transfer positions away from a defaulted member, as well as to measure the impact of nondefault losses resulting from different types of stress events (e.g., a cyberattack).

Panelists also discussed existing stress test frameworks and standards. One panelist suggested existing standards have improved the resilience at the individual CCP level. Others agreed that the internal stress tests that CCPs already carry out are adequate, but contended CCPs ought to find a way to better disclose the results. Additionally, most panelists concurred that instead of developing more stress testing at the individual CCP level, new supervisory stress testing at the macroprudential level would add greater value. Macroprudential stress testing would examine the response of the entire clearing system to a range of common stresses, including any event that led to the collective drawdown of financial resources or the loss of a common service provider.

Further, one panelist noted that supervisory stress tests are more beneficial in terms of liquidity management, given that liquidity risk is much more quickly subject to contagion than credit risk.

Expanding on this point, another panelist distinguished between “financial liquidity risk”—which refers to whether there is enough cash available in the system, as discussed on this panel—and “market liquidity risk”—which refers to whether there are enough bids and offers in the market when one is looking to liquidate positions. (The latter concept was discussed in the next panel.)

Panelists then turned to two key aspects of how stress tests are (or should be) designed—namely, their frequency and scope. With regard to the frequency of stress tests, one panelist contended that a macroprudential test would be most useful if it were run as frequently as possible. Another panelist did not agree, arguing that the frequency of testing was not the issue. Citing the year-long lags in the reporting of existing tests, that speaker said what matters more is how soon stress test results are reported.

With regard to the scope of stress tests, panelists disagreed about the type and quantity of data needed for a stress test to be useful. One panelist made the case for sharing as much data as possible, while a different panelist countered that massive amounts of data are not necessary. The latter cautioned about “turning this into a big problem,” given that we have “a pretty good idea what’s going on” in the clearing system with the data already available. Another speaker agreed about not wanting to “overengineer” the process by using vast amounts of data; rather, this individual favored a two-tier assessment, entailing a core assessment that is not too complex and a supplemental assessment that delves deeper into particular questions.

During the panel’s question-and-answer period, one audience member asked if crisis management groups (CMGs)⁶ should have a role in assisting global systemically important CCPs given that these groups are already assessing cross-border issues ex ante. One of the panelists conceded that leveraging existing cooperative arrangements was an excellent place to start the process of enabling information flow and cooperation to improve CCP stress testing. However, another panelist pointed out that while CMGs may be able to facilitate the sharing of data and improve communication, they lack real power to determine the protocol for assigning losses in the event of a crisis.

Default management auctions

The final panel centered on the incentives present throughout the default management process for different actors. It opened with a presentation of a theoretical model to illustrate several aspects of this process; a brief overview of CCP recovery and resolution resources; and a discussion about how a CCP’s response might impact these resources.

The panelists then discussed three possible scenarios following a clearing member default. For instance, the defaulter’s resources and the CCP’s resources are sufficient to cover the loss, in which case there is no need to dip into the mutualized pool of guaranty funds. Alternatively, the defaulter’s resources and the CCP’s resources are insufficient, and some of the mutualized guaranty fund (made up of surviving clearing members’ deposits) is used but not exhausted. And finally, the entire mutualized guaranty fund is depleted. The panelists observed that the incentive to participate in a default management auction tends to be the strongest in the second scenario.

The panelists went on to discuss the impact of “juniorization.” In the context of CCP risk management, juniorization refers to the extent to which less competitive bidders in an auction for a defaulting clearing member’s portfolio are subject to greater loss attribution, as determined by the CCP. In other words, because of juniorization, when a surviving clearing member’s bid is relatively less aggressive, the CCP can opt to use that clearing member’s guaranty fund contribution first. According to one speaker, juniorization is a key incentive for clearing members to participate in an auction given that bidders want to 1) make a profit and 2) minimize the use of their portion of the guaranty fund.

It was also pointed out that what happens before an auction can affect the auction itself. That is, before an auction, when the CCP hedges the defaulting member's portfolio to protect itself against any further market moves, it is actually competing against itself in the future. According to one speaker, the question then is whether clearing members want to be involved with the CCP's default management process during the hedging or auction stage, given that providing more resources at one stage means providing less at the other. Incentivizing early participation in the default management process can reduce the use of resources by clearing members and, ultimately, the CCP. Moreover, added the speaker, the hedging stage may be the most natural place to incentivize end-users who would otherwise not have an incentive to participate, given that they have no guaranty fund to lose.

CCP representatives then discussed the steps CCPs take when a default occurs. One panelist explained the default management process will vary based on three factors: the market, the CCP, and the jurisdiction served. However, it was noted that regardless of the reasons for member defaults, CCPs follow their respective governance frameworks and rule books.

On the question of whether there are times when a CCP might hesitate to declare a default, one panelist representing a CCP noted that since the Lehman Brothers default, resolution authorities have played a role in determining whether an event is a default or not. Another speaker agreed that there is some room to make discretionary decisions. However, because a CCP's priority is to protect the surviving clearing members—and speed is of the essence when a member default occurs—it is unlikely a CCP would accept a regulator's request to delay declaring a member in default for 48 hours or more.

In the same vein, the moderator then asked panelists about the importance of communication during the default management process. When there is panic in the marketplace, how are stakeholders informed by CCPs and brought into the process? One panelist representing a clearing member perspective noted that after the default of a clearing member in 2017, there was a high level of engagement by CCPs with surviving members throughout the auction process.

Turning back to the auction process itself, the moderator asked panelists to comment on what makes for a successful auction process and what kinds of conflicts might arise from current contingency plans. One panelist representing a CCP highlighted specific policies in their "playbook" that were found useful. One particular policy is to use in-house expert staff or on-call traders during the default management process. The panelist said CCPs coordinate with each other to ensure that no single trader is called on at the same time to advise on different auctions. Moreover, traders are not permitted to trade on the information gained by advising a CCP on an auction.

In thinking about how to make an auction successful, one panelist representing a bank-affiliated futures commission merchant (FCM) mentioned issues related to its capacity to participate in an auction and take on positions. Namely, the panelist pointed out the associated costs (and capital implications of margin) for bank-affiliated clearing members that take on new positions.

Commenting from the end-user perspective, another panelist agreed about the benefits of including end-users in the auction process. The end-user representative mentioned that as part of his firm's liquidity framework, it maintains a certain level of cash on hand for these types of events. The speaker argued "at worst, we're not super competitive, but at best we can increase the overall level of revenues for the auction system"—which would alleviate the pressure on bank-affiliated FCMs to participate. Countering this point, another panelist representing a clearing member's perspective cautioned against allowing all end-user clients to participate in auctions; this speaker argued that CCPs should only allow "qualified bidders" in the process to avoid having end-users take on positions they cannot manage.

In closing, the panelists touched on how much flexibility CCPs need in order to tailor their response to various crises. Panelists noted that to date, CCPs have had a fair amount of flexibility in such matters but that CPMI–IOSCO is now looking into how clearing member defaults should be dealt with. Because it remains unclear “which direction CPMI–IOSCO is going to go,” noted one speaker, “CPMI–IOSCO is not in a position to set detailed guidance for these kinds of processes at this stage.”

Conclusion

The second annual Symposium on OTC Derivatives attracted over 100 representatives from regulatory authorities, CCPs, financial services institutions, market participants, and academic circles. The three panels of this year’s event covered CCP governance, supervisory stress testing, and default management auctions. In closing, Jin Penghui, executive vice president, Shanghai Head Office, People’s Bank of China, summarized some of the topics discussed and extended his gratitude to all the guests and speakers.

¹ Paulson’s full speech is available online, <https://www.chicagofed.org/publications/speeches/2018/06-26-2018-market-resiliency-evidence-from-money-market-mutual-fund-reform-paulson>.

² The PFMI were originally issued by the Committee on Payment and Settlement Systems (CPSS)—the predecessor to the CPMI.

³ The PFMI 2.0 are available online, <https://www.bis.org/cpmi/publ/d163.htm>.

⁴ A definition of the principal-agent problem is available online, <http://lexicon.ft.com/term?term=principal-agent-problem>. A definition of the asymmetric information problem is available online, <http://lexicon.ft.com/Term?term=asymmetric-information>.

⁵ There are various types of CCP ownership structures, including instances where the CCP is owned, in whole or in part, by clearing members. The major types of CCPs and their ownership structures are described in Robert T. Cox and Robert S. Steigerwald, 2016, “‘Incomplete demutualization’ and financial market infrastructure: Central counterparty ownership and governance after the crisis of 2008–9,” *Journal of Financial Market Infrastructures*, Vol. 4, No. 3, March, pp. 25–38. Crossref, <https://doi.org/10.21314/JFMI.2016.057>

⁶ A definition of crisis management groups is available online, <http://www.fsb.org/what-we-do/policy-development/effective-resolution-regimes-and-policies/key-attributes-of-effective-resolution-regimes-for-financial-institutions/#8crisismanagementgroups>.

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