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OTC Market Infrastructure Reform: Opportunities and Challenges

The financial crisis revealed important weaknesses in many areas of our financial system. In response, governments around the world have undertaken a variety of far-reaching regulatory reforms that, I would argue, can be grouped into three categories: those intended to strengthen institutions; those aimed at strengthening financial markets; and those that take steps to reinforce and, in some cases, build new market infrastructures.

The reform effort seeks to address each of these areas in a comprehensive manner that recognizes the interplay among them. For instance, enhanced capital and liquidity regulations will strengthen the ability of financial institutions to withstand both credit losses and liquidity shocks. Stronger financial institutions, along with enhanced risk management and supervision, will strengthen market infrastructures. And new rules to improve the functioning of markets, such as those that require greater transparency of over-the-counter (OTC) derivatives markets through trade repositories and swap execution facilities, will strengthen financial institutions and infrastructures alike. Moreover, greater post-trade transparency will improve competition and make it easier for market participants to make informed choices about which OTC derivatives are best suited to their needs.

Today I will focus on the third aspect of this effort—reforms intended to strengthen financial market infrastructures. Specifically, I will look at measures to improve the clearing of OTC derivatives through the expanded use of central counterparties (CCPs) and the introduction of margin requirements for those OTC derivatives that remain bilateral. In the United States, several agencies are working together to implement these reforms. The Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) are responsible for establishing the regulatory regime for and supervising CCPs as well as determining which swaps must be centrally cleared. The Federal Reserve and six other agencies are responsible for establishing margin requirements for derivatives that are not cleared through a CCP.¹ The Federal Reserve shares with the other members of the Financial Stability Oversight Council (FSOC) an interest in CCP regulation and central clearing from a broader financial stability perspective. The Fed also plays a role in supervising financial market utilities that are designated as systemically important under Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank).

The financial crisis involved significant failures in the functioning, regulation, and supervision of OTC derivatives markets. These failures were well illustrated by the widespread and destabilizing effects of large losses by American International Group (AIG) on its OTC structured finance and credit derivative positions. In the absence of government intervention, AIG's failure would have exposed its counterparties to significant losses at a time of widespread financial stress. Further, the lack of transparency in OTC derivatives markets at that time led to a wave of uncertainty about who was exposed to AIG and the extent of that exposure. This fundamental lack of information fueled concerns about potential losses and drove a cycle of escalating pressure on large financial institutions around the globe. Government intervention was deemed necessary to stop this cycle and contain the threat to the financial system. AIG's failure revealed systemic problems in the OTC derivatives market that went well beyond the failure of a single market participant.

The Group of Twenty governments responded by committing that all standardized derivatives would be moved to central clearing and that derivatives that are not centrally cleared would be subject to margin requirements.² Progress has been made on both of these fronts. Since credit default swaps clearing was introduced in 2009, the notional value of cleared credit derivatives has grown to more than \$6 trillion. The notional value of interest rate swaps that are centrally cleared has more than doubled since 2009 and now stands at more than \$400 trillion.³ These amounts will surely increase further in the coming years. And international standards on margin requirements for derivatives that are not centrally cleared have recently been finalized.⁴ I would like to briefly discuss how these reform efforts are intended to reduce systemic risks and offer my views on how to ensure that they are effectively implemented.

The Enhanced Role of Central Counterparties in OTC Derivatives Markets

By design, central clearing offers important advantages over a bilateral market structure in which no participant can know the full extent of its counterparties' risk exposures. The hub-and-spoke structure of central clearing enables the netting of gains and losses across multiple market participants, which has the potential to significantly reduce each participant's aggregate counterparty risk exposure. Central clearing can also improve transparency, which is important in reducing incentives for market participants to pull away from other institutions in times of stress. Rather than trying to assess its exposure to all of its trading partners, a market participant would need to manage only its exposure to the central counterparty. And CCPs can also reduce risk by imposing more effective risk controls on clearing members. Since their origins in the 19th century, CCPs have evolved significantly, and that evolution has allowed them to survive and continue functioning through many crises, including the most recent one.⁵

Of course, the other side of this coin is that concentrating risk in a central counterparty could create a single point of failure for the entire system. Given their heightened prominence in the financial infrastructure, if CCPs are to mitigate systemic risks they must hold themselves to—and be held to—the highest standards of risk management. In many respects, CCPs are the collective reflection of the financial institutions that are their members and the markets that they support. The credit and liquidity risks borne by a CCP arise from the clearing activities of its members. Those risks materialize when a clearing member defaults. Most of the financial resources to cover risk exposures will come from a CCP's members. And a member's default will require the CCP to work with surviving members in the context of prevailing market conditions. CCPs play a critical role in ensuring a robust risk management regime that fully takes account of this interplay among markets, institutions, and infrastructure. Regulators, clearing members, and their clients also must be engaged in making sure CCPs are safe and effective at managing the risks, interactions, and interdependencies inherent in the clearing process.

I will now turn to some key aspects of the regulatory framework for CCPs that will strengthen the financial system and help reduce systemic risk.

Three Keys to Ensuring Central Counterparties Are Effective in Mitigating Systemic Risks

There are three key dimensions to making the reform program work in practice: enhancing supervision and regulation of CCPs, strengthening CCP risk management and governance, and promoting the stability of clearing members.

Enhancing Central Counterparty Supervision and Regulation

The decision to require central clearing of standardized derivatives as a foundation for reform has raised the stakes for CCPs, clearing members, regulators, and the general public. At the international level, financial regulatory authorities addressed this challenge by updating, harmonizing, and strengthening the minimum risk management standards applied to financial market infrastructures, including CCPs. The new Principles for Financial Market Infrastructures, commonly referred to as the PFMI, set a higher bar for risk management to strengthen these core market infrastructures and promote financial stability.⁶ Just last week, the CFTC finalized its adoption of the PFMI for the derivatives clearing organizations it regulates and supervises.⁷

The PFMI require that a CCP develop strategies to cover its losses and continue operating in a time of widespread financial stress. In particular, the PFMI require that a CCP maintain financial resources sufficient to cover its current and potential future exposures to each participant fully with a high degree of confidence. CCPs must maintain additional resources to cover the failure of the clearing member with the largest exposure under extreme but plausible market conditions. In the case of CCPs with more complex risk profiles or those that are systemically important in multiple jurisdictions, the CCP must have adequate resources to handle the failure of the two clearing members with the largest exposures. Finally, the PFMI require a CCP to identify scenarios that may potentially prevent it from being able to continue operations, including so-called end-of-default waterfall issues, and develop detailed plans for recovery or orderly wind-down. Regulators and industry groups are working to establish minimum expectations for CCP transparency of both qualitative and quantitative information that will allow key stakeholders to assess a CCP's risk management.⁸

This international strategy for strengthening CCPs has been complemented by several domestic initiatives to introduce regulatory frameworks for OTC derivatives and to enhance supervision of systemically important CCPs. The two most notable developments are the passage of the European Market Infrastructure Regulation and Dodd-Frank, notably titles VII and VIII. Both laws establish a framework for reporting, regulating, and clearing OTC derivatives transactions; call for international coordination; and emphasize enhanced risk management standards for CCPs. Differences of implementation have emerged, however, and it will be important to engage with other governments to ensure that such differences do not lead to regulatory arbitrage or weakened standards.

Central Counterparty Risk Management and Governance

The two primary risks facing a CCP are credit risk (the potential for the CCP to incur losses after it closes out a defaulter's positions) and liquidity risk (the possibility that a CCP will not have sufficient cash on hand to meet its payment obligations in a timely manner). While credit risk and liquidity risk are interrelated, they are also distinct and need to be measured and managed separately.

To promote sound credit risk management, the PFMI require that a CCP collect variation margin from its members to limit the buildup of current exposures. In addition, CCPs must also calculate and collect initial margin sufficient to cover potential changes in the value of each participant's position between the last collection of variation margin and the final closeout of a participant's position should it default to the CCP. This process involves modeling potential price movements with an appropriate confidence threshold, determining the closeout period in the event the participant defaults, and numerous other factors. Given the complexity of this modeling, it is important that CCPs rigorously back-test and stress-test the adequacy of their margin models under a wide range of extreme yet plausible scenarios. More broadly, a CCP should test the sufficiency of its total financial resources—initial margin, default funds and capital—to cover potential credit losses, taking into account evolving market volatility and liquidity conditions.

An important lesson from the financial crisis is that liquidity is extremely important in ensuring ongoing viability and resilience during a period of financial stress. No amount of resources can guarantee that a CCP will be able to meet its payment and settlement obligations, unless those resources can be converted to cash with certainty and within a very short time frame. CCP liquidity is especially important, since a failure to meet required payment obligations could undermine market confidence at precisely the moment when it is most fragile and trigger run-like behavior as financial institutions seek to reduce their exposure to the CCP and its members.

To measure and manage its liquidity risks, the PFMI require a CCP to have effective methodologies to estimate its funding exposures under a variety of stressed conditions, to identify available cash resources, and to establish mechanisms for converting its noncash collateral to cash. The need to assure adequate liquidity presents a number of challenges. CCPs will need to mobilize cash within a matter of hours on the day of a large clearing member's default. Cash balances on deposit at a bank can be quickly accessed, but CCPs often put their cash resources in overnight investments to earn a return. The nature and mechanics of such investments, as well as prevailing market conditions, can critically affect the ability of a CCP to unwind those investments quickly enough to meet its cash needs. A similar challenge will arise with the need to convert noncash collateral, such as initial margin collateral, to cash. The PFMI require CCPs to have in place prearranged and highly reliable funding sources to address this need.

Managing credit and liquidity risks requires effective governance. One important aspect of CCP governance is a commitment to transparency. Clearing members bear primary responsibility for understanding the risks associated with participating in a CCP, including their potential exposures in the event of a default. This will require the CCP to provide relevant and even firm-specific information to facilitate the members' analysis. Clearing members and their clients, regulators, and the broader public require transparency so that they can assess the adequacy of a CCP's risk

management and its overall risk profile.

Promoting the Stability of Central Counterparty Members

So far, I have focused on CCPs. Now I would like to turn to the critical role played by clearing members of those CCPs. A CCP ultimately draws its strength and resilience from that of its members. And it is not a one-way street, since strong CCPs enable clearing members and their clients to significantly reduce their exposure to counterparty credit risk. Effective risk management by both a CCP and its clearing members need to work in concert.

As a general matter, enhanced capital and liquidity requirements have substantially improved the overall risk position of the banks that constitute many of the major clearing members. For example, Tier 1 common equity capital ratios at the largest U.S. banks have nearly doubled since 2007.⁹ In addition, new requirements address the specific interactions that banks have with CCPs and derivatives markets in order to promote both the use of central clearing and strong CCP risk management.

Under Basel III, capital requirements for bank exposures to a CCP are sensitive to the risk management standards applied by the CCP. These requirements acknowledge that CCPs that adhere to the PFMI present lower risks to their members. Exposures to such qualifying CCPs require less capital.¹⁰ The capital rules also recognize that a CCP requiring more initial margin from its members exposes those members to less default risk, and therefore require less capital. On the liquidity front, the recently proposed liquidity coverage ratio (LCR) recognizes the liquidity-intensive nature of derivatives transactions. Under the LCR, a bank is required to maintain high-quality liquid assets that are sufficient to withstand an extreme yet plausible margin call from its derivatives counterparties.¹¹ Importantly, the liquidity requirement depends on the member's net derivatives position with the CCP--if the position is hedged, the liquidity requirement will be appropriately attenuated.

Ensuring the Stability of OTC Derivatives Markets That Are Not Centrally Cleared: Margin Requirements for Noncleared Derivatives

While central clearing is important and is expected to increase substantially over time, a significant portion of nonstandardized, bespoke derivatives will never be suitable for central clearing. This bilaterally cleared part of the market was a principal source of systemic risk during the crisis. For noncentrally cleared derivatives, margin requirements will serve as the main tool to mitigate systemic risks. The Basel Committee on Banking Supervision (Basel Committee) and the International Organization of Securities Commissions (IOSCO) have recently finalized a framework for margin requirements on noncentrally cleared derivatives that provides for harmonized rules and a level playing field, which is important given the global nature of derivatives markets. Regulatory authorities in participating countries are now in the process of developing margin rules for noncleared derivatives in light of the international framework.

The framework requires both financial firms and systemically important nonfinancial firms that trade derivatives to collect both variation margin and initial margin, as is the case for centrally cleared derivatives. The initial margin requirements represent a significant change to existing market practice and will undoubtedly impose some costs on market participants. As originally proposed, the new framework would have required most market participants to collect initial margin from the first dollar of exposure. The International Swap Dealers Association estimated that roughly an additional \$1.7 trillion in initial margin would have been required globally.¹² In light of this concern, the framework was released for public consultation on two separate occasions and the Basel Committee and IOSCO conducted a detailed impact study to determine the potential liquidity costs of the new requirements.¹³

The final version of the framework addressed these concerns by allowing firms to begin collecting initial margin only as potential future credit exposures rise above \$65 million for a particular counterparty. According to the impact study, this revision reduced the estimated global liquidity requirement from roughly \$2.3 trillion to \$900 billion.¹⁴ The result is a margin regime that will protect the financial system from the largest and most systemic exposures while also reducing overall liquidity costs and providing relief to smaller derivatives market participants.

It should also be noted that these margin requirements are new to the market and their effects cannot be fully understood before they become effective. There is simply no substitute for experience. Accordingly, the Basel Committee and IOSCO have established a monitoring group that will evaluate the effects of the margin requirements. The evaluation will focus on the consistency of the margin standards with related regulatory initiatives such as the implementation of the LCR and potential minimum haircuts on repurchase transactions. Based on the findings of this monitoring group, the Basel Committee and IOSCO will jointly determine whether any modifications to the margin requirements are necessary or appropriate. In this way, regulators are taking an experience-based approach to managing systemic risk that looks across the combined effect of a number of related regulatory initiatives.

Conclusion

The financial crisis revealed significant flaws in the structure of the OTC derivatives markets that are now being addressed as part of a worldwide reform effort. Increased central clearing and margins for noncleared derivatives are foundational elements of the program. Together, these reforms can help create a system in which the OTC derivatives market infrastructure acts as a pillar of strength in the next crisis. To achieve this goal, it is imperative that international standards such as the PFMI and the margining framework for noncentrally cleared derivatives be forcefully and consistently implemented across the globe.

Implementation of the new framework will present some real-world challenges. National rules still need to be written, including rules for margin requirements on noncentrally cleared derivatives. These national rules will need to deal with local legal regimes and markets, yet also be internationally consistent to ensure a level playing field. More broadly, international cooperation will be needed to ensure that the new framework works in practice.

1. In addition to the Federal Reserve, the CFTC, FDIC, FHFA, FCA, OCC and SEC are responsible for establishing margin requirements on derivatives that are not cleared through a CCP. [Return to text](#)

2. See Group of Twenty (2009), "[The G20 Pittsburgh Summit Leaders' Statement \(PDF\)](#)," ¶ item 13 under "Strengthening the International Financial Regulatory System" (Pittsburgh, PA: G-20, September); and Group of Twenty (2011), "[Cannes Summit Final Declaration--Building Our Common Future: Renewed Collective Action for the Benefit of All](#)," item 24 under "[Meeting Our Commitments Notably on Banks, OTC Derivatives, Compensation Practices and Credit Rating Agencies, and Intensifying Our Monitoring to Track Deficiencies \(DOC\)](#)" ¶ (Cannes, France: G-20, November). [Return to text](#)

3. Interest rate derivatives cleared volumes reflect notional amounts as of November 8, 2013, reported for LCH.Clearnet's SwapClear service. Credit default swap cleared volumes reflect notional amounts as of November 8, 2013, reported by the Depository Trust and Clearing Corporation's Trade Information Warehouse. [Return to text](#)
4. See Basel Committee on Banking Supervision and the Board of the International Organization of Securities Commissions (2013), [Margin Requirements for Non-Centrally Cleared Derivatives](#), [PDF](#) report (Basel, Switzerland: Bank for International Settlements, September). [Return to text](#)
5. See Ben S. Bernanke (2011), "[Clearinghouses, Financial Stability, and Financial Reform](#)," speech delivered at the "2011 Financial Markets Conference: Navigating the New Financial Landscape," sponsored by the Federal Reserve Bank of Atlanta, held in Stone Mountain, Ga., April 4-6. [Return to text](#)
6. See Committee on Payment and Settlement Systems and the International Organization of Securities Commissions (2012), [Principles for Financial Market Infrastructures](#), [PDF](#) report (Basel, Switzerland: Bank for International Settlements, April). [Return to text](#)
7. See [Derivatives Clearing Organizations and International Standards \(PDF\)](#), 17 C.F.R. pts. 39, 140, and 190 (2013). [Return to text](#)
8. See Committee on Payment and Settlement Systems and the International Organization of Securities Commissions (2012), "[Disclosure Framework and Assessment Methodology for Their Principles for Financial Market Infrastructures Issued by CPSS-IOSCO](#)," [PDF](#) press release, December 14; Committee on Payment and Settlement Systems and the International Organization of Securities Commissions (2013), [Public Quantitative Disclosure Standards for Central Counterparties: Consultative Report](#), [PDF](#) report (Basel, Switzerland: Bank for International Settlements, October); and Payments Risk Committee (2013), [Recommendations for Supporting Clearing Member Due Diligence of Central Counterparties \(PDF\)](#), report (New York: Federal Reserve Bank of New York, February). [Return to text](#)
9. The Tier 1 common equity ratio for the 18 largest bank holding companies increased from 5.9 percent in December of 2007 to 11.3 percent in September of 2013. For more information, see the FR Y-9C "[Consolidated Financial Statements for Holding Companies \(PDF\)](#)" reporting form. [Return to text](#)
10. See Board of Governors of the Federal Reserve System (2013), "[Federal Reserve Board Approves Final Rule to Help Ensure Banks Maintain Strong Capital Positions](#)," press release, July 2. [Return to text](#)
11. See Board of Governors of the Federal Reserve System (2013), "[Federal Reserve Board Proposes Rule to Strengthen Liquidity Positions of Large Financial Institutions](#)," press release, October 24. [Return to text](#)
12. Documents on initial margin requirements are available on the International Swap Dealers Association [website](#). [Return to text](#)
13. See Basel Committee on Banking Supervision and the International Organization of Securities Commissions (2013), [Margin Requirements for Non-Centrally Cleared Derivatives: Second Consultative Document](#), [PDF](#) report (Basel, Switzerland: Bank for International Settlements, February). [Return to text](#)
14. The Basel Committee-IOSCO impact study reports all results in terms of euros. The results above have been converted to U.S. dollar amounts by multiplying by the euro-dollar exchange rate of 1 euro=1.35 dollars as of November 15, 2013. [Return to text](#)

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