DERIVATIVES CLEARINGHOUSES: CLEARING THE WAY TO FAILURE

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ABSTRACT

One of the major components of Dodd-Frank was a comprehensive regulatory framework for over-the-counter derivatives. A key feature of this framework is a requirement that many of these derivatives be cleared through central counterparty clearinghouses. Clearinghouses have long played a stabilizing force in many markets, but Dodd-Frank's regulatory mandate may adversely affect the way they operate. Risk management by clearinghouses and market participants could suffer, and improper risks could find their way into clearinghouses. If a clearinghouse were to fail, there would be tremendous pressure for the government to bail it out in the name of financial stability. Dodd-Frank's derivatives framework should be reconsidered before it destabilizes the financial system. A better approach would empower market participants to decide whether to use clearinghouses and would allow clearinghouses the regulatory latitude to effectively manage their risks.

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INTRODUCTION

The remaking of the United States derivatives markets is among the most celebrated pieces of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank").[1] The Dodd-Frank reform, however, has unnecessarily destabilized the financial markets through mandatory reliance on central counterparties ("CCPs"), which are financial institutions that collect derivatives transactions from many market participants and manage the associated risks. A better approach would be to abandon the central clearing mandate and the associated trading mandate and allow the derivatives markets to develop through market—not regulatory—mechanisms. Combined with principles-based regulation for CCPs and robust regulatory reporting, an organically developed market structure would enable the derivatives markets to mitigate risk—including through the voluntary use of CCPs—without undermining financial stability.

Derivatives are financial contracts that derive their value from the price of something else, such as a commodity, stock, bond, index, or currency. These contracts—which include futures, forwards, swaps, and options—enable companies and individuals to shift risks to parties willing to bear that risk. Financial and non-financial companies use derivatives to manage a wide array of risks, including foreign exchange risk, interest rate risk, and counterparty risk.

Many derivatives trade on exchanges and are cleared through CCPs, which are often affiliated with the exchange.[2] These derivatives adhere to a standard set of terms governing each aspect of the contract. Derivatives also can be executed off-exchange in a bilateral transaction between a dealer (usually a large bank)[3] and another dealer or customer. These bilateral transactions afford substantial flexibility in contract terms to accommodate the unique needs of the customer. Accordingly, risks that are particular to the specific transactions or to a specific company are typically managed through bilateral transactions and are not cleared through CCPs.

Reform advocates often cite uncleared, over-the-counter ("OTC") derivatives (also referred to as "swaps" in this article) as a core cause of the crisis and posit mandatory central clearing as a key solution.[4] Their theory is that large banks and

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[1] Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of 5, 7, 12, 15, 22, 26, 28, 31 & 42 U.S.C.).

[2] In the United States futures markets, exchanges typically are vertically integrated with clearinghouses, whereas clearinghouses in the equities and options markets are independent of exchanges. *See* Neal L. Wolkoff & Jason B. Werner, *The History of Regulation of Clearing in the Securities and Futures Markets and Its Impact on Competition*, 30 REV. BANKING & FIN. L. 313, 346-47 (2010) (discussing why these markets developed differently).

[3] The United States derivatives market is concentrated; four commercial banks—JPMorgan Chase Bank, Bank of America, Citibank, and Goldman Sachs—have approximately ninety percent of the banking industry's derivatives. OFFICE OF THE COMPTROLLER OF THE CURRENCY, OCC'S QUARTERLY REPORT ON BANK TRADING AND DERIVATIVES ACTIVITIES THIRD QUARTER 16, 17 (2015), http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq315.pdf [hereinafter OCC QUARTERLY REPORT].

[4] When discussing derivatives, Treasury Secretary Jacob Lew remarked that:

other large financial firms were dangerously bound together through a non-transparent web of derivatives exposures. Dodd-Frank proffered mandatory central clearing, which substitutes a central clearinghouse for the bilateral relationship between the parties to an OTC transaction, as the best way to bring order to the chaos of the large OTC derivative markets. To complement central clearing, Dodd-Frank imposes trading and reporting mandates with the goal of making the OTC markets more transparent and competitive.[5]

This Article argues that the combination of clearing mandates, government prescriptions regarding clearinghouse design, and government support for CCPs threatens financial stability. As Professor Craig Pirrong warned, "a wholesale re-engineering of the structure of derivatives markets via legislative fiat is fraught with danger."[6] A preferable approach would eliminate government backstops and leave

> During 2008, when Lehman Brothers went under and AIG nearly collapsed, the complex web of bilateral derivatives contracts was a critical driver of the financial meltdown. But there was no statutory authority to set standards for this market. Wall Street Reform changed that . . . . Opaque bilateral trading is being replaced by central clearing and transparent trading. And all trades must be reported.

Jacob L. Lew, Secretary, Dept't of Treasury, Remarks at the Brookings Institution (July 8, 2015), http://www.treasury.gov/press-center/press-releases/Pages/Remarks-by-Treasury-Secretary-Jacob-J.-Lew-at-The-Brookings-Institution.aspx. Chairman Gary Gensler, also in support of OTC derivatives, stated that:

> A key measure included in the financial reform bill currently being debated in the Senate would require standard over-the-counter derivatives to be cleared by central clearinghouses. This will greatly reduce risk, interconnectedness and the need for future bailouts. Financial institutions would be freer to fail with limited effects on the broader economy.

Gary Gensler, *Clearinghouses Are the Answer*, WALL ST. J. (Apr. 21, 2010), http://www.wsj.com/articles/SB10001424052748704671904575194463642611160.

[5] *See, e.g.*, *A Transformed Marketplace – Remarks of Chairman Gary Gensler's Before the FIA 2013 Futures & Options Expo*, U.S. COMMODITIES FUTURES TRADING COMMISSION (Nov. 6, 2013), http://www.cftc.gov/PressRoom/SpeechesTestimony/opagensler-151 ("Now, as a result of reforms, swap execution facilities (SEFs) are required to provide all market participants with impartial access. They must provide dealers and non-dealers alike the ability to make and respond to bids, offers and requests for quotes. This is a basic tenant [*sic*] that Adam Smith and so many economists have laid out – that access and transparency promote competition and benefit the economy."); Ilya Beylin, A Reassessment of the Clearing Mandate: How the Clearing Mandate Affects Swap Trading Behavior and the Consequences for Systemic Risk 51-52 (Oct. 20, 2015) (unpublished manuscript), http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2613779_code701120.pdf?abstractid=2612755&mirid=1 (discussing the potential for the combination of trading and clearing mandates to diminish dealers' hold on the swaps market). The trading mandate is falling short of this goal due to implementation problems. *See, e.g.*, *Statement from Commissioner J. Christopher Giancarlo Reconsidering the CFTC's Swap Trading Rules for Greater Effectiveness in the Global Economy*, U.S. COMMODITY FUTURES TRADING COMMISSION (Nov. 12, 2014), http://www.cftc.gov/PressRoom/SpeechesTestimony/giancarlostatement111214 ("The CFTC's flawed SEF framework is causing a range of unintended adverse consequences. For one, it is ensuring that big platforms get bigger and small platforms get squeezed out because of the sharply increased legal and compliance costs of registering and operating a SEF.").

[6] CRAIG PIRRONG, THE INEFFICIENCY OF THE CLEARING MANDATE, POLICY ANALYSIS 33 (2010), http://object.cato.org/sites/cato.org/files/pubs/pdf/PA665.pdf [hereinafter PIRRONG, INEFFICIENCY].

decisions about which products should be centrally cleared and how CCPs should operate to private decision-makers. The current regulatory framework would be replaced by a principles-based regulatory approach and mandatory reporting of swaps transactions.

The Article proceeds as follows. Part I briefly describes OTC derivatives and clearinghouses and how they are regulated under Dodd-Frank. Part II describes why this framework is problematic. Part III posits an alternate framework.

I. OTC DERIVATIVES, CLEARINGHOUSES, AND THEIR NEW REGULATORY FRAMEWORK

Derivative contracts include a wide array of financial instruments subject to different regulatory regimes. The uniting theme is that a derivative is a "contract between two parties providing for a payoff from one party to the other determined by the price of an asset, an exchange rate, a commodity price, or an interest rate."[7] The financial instruments on which derivatives are based include currencies, interest rates, commodities, and debt and equity securities. Derivatives contracts typically do not call for immediate performance; these contracts can last for weeks, months, or even years. Options, futures, forwards, and swaps are types of derivatives.[8] Of particular interest after the financial crisis, credit default swaps ("CDS"), protect buyers from negative credit events such as corporate or sovereign bond defaults.[9] American International Group's ("AIG") notorious crisis-era CDS transactions[10]

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[7] DON M. CHANCE & ROBERT BROOKS, AN INTRODUCTION TO DERIVATIVES AND RISK MANAGEMENT 625 (7th ed. 2004); *see also* Viral V. Acharya et al., *Derivatives: The Ultimate Financial Innovation*, *in* RESTORING FINANCIAL STABILITY: HOW TO REPAIR A FAILED FINANCIAL SYSTEM 233 (Viral V. Acharya & Matthew Richardson eds., 2009) ("Derivatives are financial contracts whose value is derived from some underlying asset. These assets can include equities and equity indices, bonds, loans, interest rates, exchange rates, commodities, residential and commercial mortgages, and even catastrophes like earthquakes and hurricanes."); JOHN HULL, OPTIONS, FUTURES, AND OTHER DERIVATIVES 1 (7th ed. 2009) ("A derivative can be defined as a financial instrument whose value depends on (or derives from) the value of other, more basic, underlying variables."); BRUCE TUCKMAN, IN DEFENSE OF DERIVATIVES: FROM BEER TO THE FINANCIAL CRISIS, POLICY ANALYSIS 2 (2015) ("A *derivative* is a contract between two parties that [c]ommits to exchange cash, goods, or securities in the future; [r]equires little or nothing in the way of an up-front payment; and [i]s written in a legal form that allows for swift remedial action in the event of a default—that is, without the approval of a bankruptcy court.").

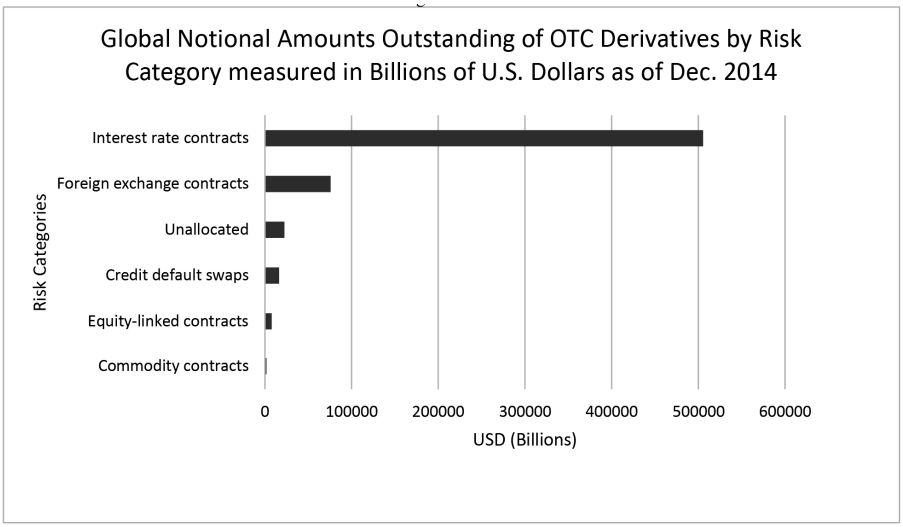
[8] *See Product Descriptions and Frequently Asked Questions*, INT'L SWAPS & DERIVATIVES ASS'N, http://www.isda.org/educat/faqs.html#10 (last visited Feb. 6, 2016).

[9] More precisely, a "credit default swap is a credit derivative contract in which one party *(protection buyer)* pays [a] periodic fee to another party *(protection seller)* in return for compensation for default (or similar *credit event*) by a *reference entity*." *Id.* CDS received negative attention because some financial institutions engaged in these transactions without adequate risk controls and positive attention because CDS provided useful information to regulators and market participants trying to assess particular financial institutions' well-being during the turbulent time of 2007 through 2009.

[10] Although the narrative about AIG's troubled CDS business drove much of the push for central clearing, contrary to the popular narrative, there were significant non-derivatives contributors to AIG's crisis. *See, e.g.*, Hester Peirce, *Securities Lending and the Untold Story in the Collapse of AIG* (Mercatus Center, George Mason Univ., Working Paper No. 14-12,

obscure the valuable informational role other CDS played during the crisis.[11] In any case, as the following chart shows, CDS make up only a small subset of OTC derivatives.

Figure 1[12]



Derivatives are popular with financial and non-financial companies and with certain individuals. Nearly all large companies use derivatives to protect themselves from risks such as changes in commodity prices, interest rates, and foreign exchange rates.[13] A key use of derivatives is to transfer risk from someone who does not want it to someone who is better able and more willing to bear the risk. Another important role derivatives play is price discovery and liquidity: Derivatives provide

May 2014), http://mercatus.org/publication/securities-lending-and-untold-story-collapse-aig (explaining the role that securities lending played in AIG's crisis).

[11] Acharya et al., *supra* note 7, at 239 ("[D]uring the current crisis, CDSs and other credit derivatives have played a very important role in disseminating information to both the public and to regulators. Due to the complexity of financial firms' capital structures, it is difficult to infer general credit quality from the secondary market in underlying bonds, especially given that some of the bonds rarely trade. In contrast, from very early on during the financial crisis, the CDS market has judged the quality of financial firm's bankruptcy prospects in a remarkably prescient way.").

[12] *Detailed Tables on Semiannual OTC Derivatives Statistics at End-December 2014*, BANK INT'L SETTLEMENTS (Apr. 30, 2015), http://www.bis.org/statistics/derdetailed.htm.

[13] *See, e.g.*, News Release, International Swaps and Derivatives Association, Over 94% of the World's Largest Companies Use Derivatives to Help manage their Risks, According to ISDA Survey (Apr. 23, 2009), http://www.isda.org/press/press042309der.pdf; *see also* TUCKMAN, *supra* note 7; Edmund Parker & Geoffrey Parker, *A History of Derivatives: Ancient Mesopotamia to Trading Places*, YOUTUBE (Dec. 17, 2014), https://www.youtube.com/watch?v=kd2pE5s33Qg (explaining the long history of derivatives).

information about the products or financial instruments on which they are based and can improve liquidity in the markets for those products or financial instruments.[14]

A. OTC Derivatives in a Changing Regulatory Landscape

OTC derivatives are widely used risk management tools because they can be designed to precisely match a specific risk. By one measure, OTC derivatives were a $600 trillion market in 2008.[15] Thus, OTC derivatives understandably caught the attention of post-crisis policymakers. More than seventy-five percent of OTC derivatives are interest rate derivatives, just over sixteen percent are foreign exchange derivatives, and approximately four percent are credit derivatives.[16] OTC derivatives are also often called swaps "because many OTC deals involve cash flows, or obligations, that are swapped or exchanged between two parties at defined intervals."[17] Before Dodd-Frank, OTC derivatives generally were bilaterally executed and not centrally cleared. Clients interacted with dealers—usually big banks—and these dealers entered into contracts with one another to shift risks among themselves. This structure, pictured below, enabled firms to trade discreetly and hedge their risks precisely, which brought risk management benefits and favorable accounting treatment.[18] Rapid innovation was possible in the OTC markets as new products were designed in response to client needs and could be tested on a small-scale.

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[14] Acharya et al., *supra* note 7, at 234.

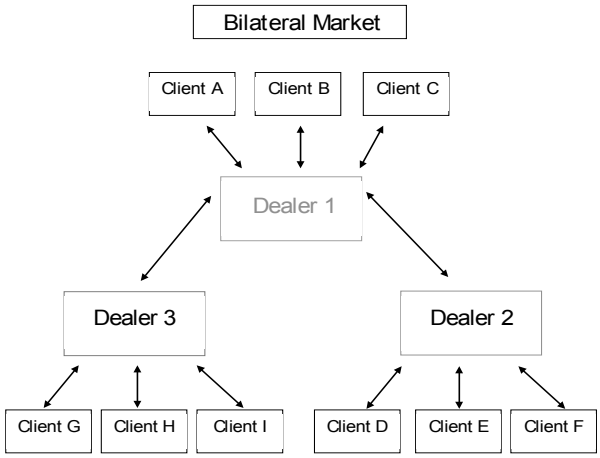
[15] $600 trillion is an attention-catching number, but some contend that representing the size of the market by reference to the notional value is potentially misleading. *See, e.g.*, Jon Skinner, *How Big is OTC Really?*, OTC SPACE (Mar. 22, 2013), http://www.theotcspace.com/2013/03/22/how-big-is-otc-really. Others point out the lack of a direct link between the notional value of the market and its risk to the financial system. *See, e.g.*, Miguel A. Segoviano & Manmohan Singh, *Counterparty Risk in the Over-the-Counter Derivatives Market* 5 (Int'l Monetary Fund, Working Paper No. 08/258, Nov. 2008), https://www.imf.org/external/pubs/ft/wp/2008/wp08258.pdf ("Notional amounts are defined as the gross nominal value of all OTC derivative deals concluded and not yet settled on the reporting date. These amounts provide a measure of the size of the market, but do not provide a measure of risk.").

[16] OCC QUARTERLY REPORT, *supra* note 3, at 10 ("Interest rate contracts continue to represent the lion's share of the derivatives market at 76.9% of total derivatives. FX and credit derivatives are 16.7% and 4.3% of total notionals, respectively. Commodity and equity derivatives collectively are only 2.1% of total notional derivatives.").

[17] Richard Heckinger et al., *Over-the-Counter (OTC) Derivatives*, *in* UNDERSTANDING DERIVATIVES—MARKET INFRASTRUCTURE 27 (2014).

[18] *Id.* at 27-29 (discussing the reasons for using the OTC derivatives markets).

Figure 2[19]



As a consequence of the dispersed, less standardized nature of the transactions, regulators had less comprehensive insight into swaps markets than, for example, into the futures market. Moreover, to provide legal clarity for the developing swaps markets,[20] in the Commodity Futures Modernization Act of 2000 ("CFMA") Congress deliberately exempted these over-the-counter transactions from most of the requirements of the Commodity Exchange Act and securities laws.[21] In so doing, the CFMA provided legal certainty for these transactions, but exempted them from most regulatory requirements applicable to futures contracts and securities.[22] These statutory exemptions, like the complex patchwork of prior regulatory exemptions on which they were built, also provided incentives not to standardize or clear swaps contracts.[23]

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[19] Author's Rendering

[20] *See id.* at 35-38 (providing a helpful chronology of OTC derivative regulation).

[21] Swaps between eligible contract participants that were individually negotiated and not executed on a trading facility were generally excluded from most provisions of the Commodity Exchange Act. 7 U.S.C. § 2(g) (2006), *amended by* Pub. L. No. 111-203, 124 Stat. 1376 (2010). The justification for the exclusion was:

> [R]egulation of such transactions under the [Commodity Exchange Act] was unnecessary to achieve the act's principal objectives of deterring market manipulation and protecting investors. Such transactions are not readily susceptible to manipulation and eligible counterparties can and should be expected to protect themselves against fraud and counterparty credit losses. Exclusion of these transactions resolved long-standing concerns that a court might find that the CEA applied to these transactions, thereby making them legally unenforceable.

Commodity Futures Modernization Act of 2000: Hearing Before the S. Comm. on Banking, Housing, and Urban Affairs, 109th Cong. (2005) (testimony of Patrick Parkinson, Deputy

Although many observers blame the CFMA for creating a "regulatory black hole,"[24] there were other regulatory and market constraints in place. First, certain antifraud laws continued to apply.[25] Second, the participants in the OTC markets had to meet threshold criteria designed to ensure these markets were open only to sophisticated, institutional participants.[26] Third, because large banks were and are active OTC dealers,[27] bank regulators monitored much of the market activity.[28] Fourth, privately developed standards, including master agreements and other standardized contract documentation developed by the International Swaps and Derivatives Association ("ISDA"), governed key aspects of relationships between swap dealers and their customers.[29] Fifth, firms had taken steps to consolidate and

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Dir., Div. of Research & Statistics), http://www.federalreserve.gov/boarddocs/testimony/2005/20050908/default.htm.

[22] For a detailed analysis of the CFMA, see Memorandum from Cravath, Swain & Moore to ISDA Members, Commodity Futures Modernization Act of 2000 (Jan. 5, 2001), http://www.isda.org/speeches/pdf/analysis_of_commodity-exchange-act-legislation.pdf.

[23] *See, e.g.*, *The Effective Regulation of the Over-the-Counter Derivatives Market: Hearing Before the Subcomm. on Capital Markets, Insurance, and Government Sponsored Enterprises of the H. Comm. on Financial Services,* 111th Cong. 164 (June 9, 2009) (statement of Christian Johnson, Professor, S.J. Quinney Coll. of Law, Univ. of Utah) ("Until recently, the U.S. regulatory structure effectively prevented clearing OTC derivatives" and "even the [CFMA] left regulatory barriers to clearing OTC derivatives.").

[24] Christopher Cox, Chairman, Sec. & Exch. Comm'n, Speech at the SEC's Roundtable on Modernizing the Securities and Exchange Commission's Disclosure System (Oct. 8, 2008), https://www.sec.gov/news/speech/2008/spch100808cc.htm; *see also* BETTER MKTS, THE COST OF THE CRISIS: $20 TRILLION AND COUNTING (2015), http://www.bettermarkets.com/sites/default/files/Better%20Markets%20-%20Cost%20of%20the%20Crisis.pdf ("[I]n 2000, Congress passed the Commodity Futures Modernization Act at the urging of financial industry lobbyists, which effectively prohibited the regulation of derivatives. This statute tied regulators' hands and prevented them from engaging in any meaningful oversight, regulation, or enforcement in the swaps derivatives markets.").

[25] *See, e.g.*, 7 U.S.C. § 2(h)(2) (2008), *amended by* Pub. L. No. 111-203, 124 Stat. 1376 (2010); *Derivatives*, SEC. & EXCH. COMM'N, https://www.sec.gov/spotlight/dodd-frank/derivatives.shtml (last modified May 5, 2015) ("The CFMA explicitly prohibited the SEC and CFTC from regulating the over-the-counter (OTC) swaps markets, but provided the SEC with antifraud authority over 'security-based swap agreements,' such as credit default swaps.").

[26] Under the CFMA, the OTC market was limited to "eligible contract participants," which were generally financial institutions and nonfinancial entities meeting certain asset thresholds. 7 U.S.C. § 1a(12)(2006), *amended by* Pub. L. No. 111-203, 124 Stat. 1376 (2010).

[27] *See supra* note 3.

[28] *See, e.g.*, COMPTROLLER OF THE CURRENCY, RISK MANAGEMENT OF FINANCIAL DERIVATIVES: COMPTROLLER'S HANDBOOK 2 (1997) ("This guidance is intended to provide a framework for evaluating the adequacy of risk management practices of derivative dealers and end-users.").

[29] *See, e.g.*, Christopher L. Culp, *OTC-Cleared Derivatives: Benefits, Costs, and Implications of the "Dodd-Frank Wall Street Reform and Consumer Protection Act,"* 20 J. APPLIED FIN., 103, 108 (2010) ("[T]he use of master agreements provides contract language that is generally accepted amongst OTC derivatives participants. The most popular such

bring order to their derivatives positions through multilateral compression and the tearing up of redundant contracts.[30] Sixth, parties in these OTC transactions had reason to choose their counterparties carefully and thereafter to monitor their creditworthiness because, unless there was a subsequent overriding transaction, these parties would remain in relationship with one another for the duration of the contract. Finally, starting before the crisis, policymakers were working with market participants on fortifying some of these market mechanisms for regulating derivatives markets.[31]

After the crisis, there was an international effort to impose a new, more formal regulatory structure on the OTC derivatives markets. The Group of Twenty (G-20) nations, meeting after the crisis, made "[i]mproving over-the-counter derivatives markets" a key element of their post-crisis regulatory reform plans:

> All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.[32]

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master agreements are the ISDA Master Agreements."); Stephen H. Moller et al., *Section 2(a)(iii) of the ISDA Master Agreement and Emerging Swaps Jurisprudence in the Shadow of Lehman Brothers*, 7 J. INT'L BANKING L. & REG. 313, 314 (2011) ("For over 20 years, over-the-counter swaps and other derivative contracts have been documented using the provisions prescribed by the forms of standard terms documents and master agreements and the related transaction architecture, all of which have been designed by ISDA."); Frank Partnoy, *Second-Order Benefits from Standards*, 48 B.C. L. REV. 169, 185-88 (2007) (discussing role of ISDA as standard setter in OTC derivatives markets).

[30] *See, e.g.*, INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: MEETING NEW CHALLENGES TO STABILITY AND BUILDING A SAFER SYSTEM 93 (2010) [hereinafter IMF, GLOBAL FINANCIAL STABILITY REPORT] (discussing pre-Dodd-Frank multilateral compression and tear-up operations).

[31] *See, e.g.*, *OTC Derivatives Supervisors Group*, FED. RES. BANK N.Y., https://www.newyorkfed.org/markets/otc_derivatives_supervisors_group.html (last visited Mar. 13, 2016) ("The OTC Derivatives Supervisors Group (ODSG) originated in 2005, when the New York Fed hosted a meeting with representatives of major over-the-counter (OTC) derivatives market participants and their domestic and international supervisors, in order to address the emerging risks of inadequate infrastructure for the rapidly growing market in credit derivatives. The group is chaired by the New York Fed and meets annually with other supervisors and signatories to a series of 'commitment letters'. Commitments made by signatories signify their collective agreement to work with other signatories and their counterparties (whether signatories or not) to deliver structural improvements to the OTC derivatives market across asset classes in the interest of financial stability."); *The Effective Regulation of the Over-the-Counter Derivatives Market*, *supra* note 23, at 164 (noting "the good work that is being done in the credit default swap market as the regulators have nudged participants to clean up the area and to try and reduce systemic risk").

[32] *Leaders' Statement at the Pittsburgh Summit*, DEP'T TREASURY (Sept. 24-25, 2009), http://www.treasury.gov/resource-center/international/g7-g20/Documents/pittsburgh_summit_leaders_statement_250909.pdf.

The agreed-upon "improvements" represented an ambitious plan to remake a massive market. The G20 agreement became the basis for ongoing reform efforts in the United States, European Union, and Asia.

In the United States, the G-20 commitments took shape in Title VII of Dodd-Frank. This section, spanning more than 150 pages, introduced a complex new regulatory structure for the OTC derivatives markets and participants in those markets. Title VII buckets OTC derivatives into two main categories; swaps regulated primarily by the Commodity Futures Trading Commission ("CFTC") and security-based swaps regulated primarily by the Securities and Exchange Commission ("SEC").[33] Most of the affected OTC derivatives are within the CFTC's jurisdiction.[34] The new framework requires active market participants to register and standardized OTC derivatives to be cleared, traded on an exchange or exchange-like platform, reported to data repositories, and publicly reported. Implementation of these interlinking pieces is a multi-year process with rolling deadlines for registration, reporting, clearing, and trading, depending on the type of OTC derivative and the type of market participant involved. Proponents look to the new swaps framework to enhance financial stability, reduce complexity, increase transparency, and foster competition.

The CFTC and SEC share most of the responsibility for writing Dodd-Frank's implementing rules. The two agencies are writing parallel, and sometimes inconsistent,[35] sets of rules governing the markets and market participants. Bank regulators, as primary regulators for many market participants, also play a role, including with respect to the important issues of setting margin and capital

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[33] The agencies share jurisdiction for a third category—"mixed swaps." For simplicity and because the vast majority of OTC derivatives covered by Title VII fall under CFTC oversight, in this Article, the term "swap" is generally used interchangeably with "OTC derivative" and includes both swaps and security-based swaps. Dodd-Frank broadly defined "swaps" and "security-based swaps," but directed the CFTC and SEC to define these terms more precisely. 15 U.S.C. § 8302(d) (2012). Regulators deferred this task until after many of the other Dodd-Frank rules were written, thus complicating efforts to understand how other rules would work.

[34] *See, e.g.*, GIBSON DUNN, U.S. SEC IMPLEMENTS DODD-FRANK ACT TITLE VII: REPORTING AND PUBLIC DISSEMINATION RULES FOR SECURITY-BASED SWAPS 1 (2015), http://www.gibsondunn.com/publications/Documents/SEC-Implements-Dodd-Frank-Title-VII--Reporting-and-Public-%20Dissemination-Rules--Security-Based-Swaps.pdf ("Under the Dodd-Frank Act, the CFTC has jurisdiction over foreign exchange, interest rate, and other commodity derivatives, as well as credit default and equity derivatives based on indices, two or more loans, and a broad-based (10 or more) group of securities. The SEC's jurisdiction is limited to credit default and equity derivatives based on a single security or loan or a narrow-based (9 or fewer) group or index of securities (including any interest therein or the value thereof), or events relating to a single issuer or issuers of securities in a narrow-based security index.").

[35] *See, e.g.*, *id.* at 17 ("Though Final Regulation SBSR provides a mechanism for substituted compliance, the lack of harmonization between the CFTC and SEC rules, as well as the rules of foreign jurisdictions, will only increase the complexity of the global reporting landscape.").

requirements.[36] Domestic regulations operate alongside, and sometimes in conflict with, the international rules adopted under the G-20 principles.[37]

The Dodd-Frank Act swaps framework includes several key features. First, it identifies the major market participants—"swap dealers" and "major swap participants,"[38] requires them to register with the CFTC or SEC,[39] and subjects them to certain business conduct requirements.[40] Second, Dodd-Frank requires the CFTC and SEC to identify OTC derivatives or categories that are subject to a clearing mandate.[41] In making these determinations, the agencies must consider factors such as the size of the market, its liquidity, the availability of pricing data, the adequacy of the infrastructure supporting the swap, systemic risk considerations, competitive considerations, and legal certainty.[42] Third, Dodd-Frank mandates these swaps—except for those involving nonfinancial companies hedging their business risks—are

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[36] *See, e.g.*, Margin and Capital Requirements for Covered Swap Entities, 80 Fed. Reg. 74839 (Nov. 30, 2015) (to be codified at 12 C.F.R. pts. 45, 237, 349, 624 & 1221).

[37] *See* FIN. STABILITY BD., OTC DERIVATIVES MARKETS REFORMS: NINTH PROGRESS REPORT ON IMPLEMENTATION (2015), http://www.fsb.org/wp-content/uploads/OTC-Derivatives-Ninth-July-2015-Progress-Report.pdf. Both the SEC and CFTC have attempted to define the extraterritorial reach of their rules. *See, e.g.*, Interpretive Guidance and Policy Statement Regarding Compliance with Certain Swap Regulations, 78 Fed. Reg. 45292 (July 26, 2013); Application of "Security-Based Swap Dealer" and "Major-Security-Based Swap Participant" Definitions to Cross-Border Security-Based Swap Activities, 79 Fed. Reg. 47278 (Aug. 12, 2014); Application of Certain Title VII Requirements to Security-Based Swap Transactions Connected with a Non-U.S. Person's Dealing Activity That Are Arranged, Negotiated, or Executed By Personnel Located in a U.S. Branch or Office or in a U.S. Branch or Office of an Agent, 80 Fed. Reg. 27443 (May 13, 2015).

[38] Dodd-Frank defines "swap dealers" and "major swap participants." Dodd-Frank Act § 721 (codified at 7 U.S.C. § 1a (2012)). A parallel provision defines "security-based swap dealer" and "major security-based swap participant." *Id.* at § 761 (codified at 15 U.S.C. § 78c(a) (2012)). Dodd-Frank directs the CFTC and SEC to further define all of those terms and "swap," "security-based swap," "eligible contract participant," and "security-based swap agreement." *id.* § 712(d)(1) (codified at 15 U.S.C. § 8302 (2012)). These definitions are important as they help to determine which transactions are subject to Dodd-Frank requirements.

[39] *Id.* § 731 (codified at 7 U.S.C. § 6s(a) (2012)) (providing for registration of swap dealers and major swap participants); *id.* § 764 (codified at 15 U.S.C. § 78o-10 (2012)) (providing for registration of security-based swap dealers and major security-based swap participants).

[40] *Id.* § 731 (adding 7 U.S.C. § 6s(h)) (imposing business conduct requirements on swap dealers and major swap participants); *id.* § 764 (adding 15 U.S.C. § 78o-8(h)(3)) (imposing business conduct requirements on security-based swap dealers and major security-based swap participants).

[41] *Id.* § 723(a) (codified at 7 U.S.C. § 2(h)(2) (2012)) (directing the CFTC to determine "on an ongoing basis" which swaps must be cleared); *id.* § 763(a) (codified at 15 U.S.C. § 78c-3(b) (2012)) (directing the SEC to determine "on an ongoing basis" which security-based swaps must be cleared).

[42] *Id.* § 723(a) (codified at 7 U.S.C. § 2(h)(2) (2012)) (setting forth clearing determination factors for the CFTC); *id.* § 763(a) (codified at 15 U.S.C. § 78c-3(b) (2012)) (setting forth clearing determination factors for the SEC).

cleared at clearinghouses registered with the SEC or CFTC.[43] Fourth, if a trading venue is available, cleared swaps must trade on an exchange or a swap execution facility ("SEF")—a new type of trading venue created by Dodd-Frank for the swaps markets.[44] Fifth, Dodd-Frank rules prescribe how, when, and by whom cleared and uncleared swap transactions must be reported to a swap data repository, another new entity created under Dodd-Frank to house swap transaction data.[45] Sixth, Dodd-Frank requires public transparency about swap transactions.[46] Finally, Title VII requires regulators to set capital and margin requirements in connection with cleared and uncleared swaps.[47] In bilateral transactions, collateral arrangements have been flexible; for example, dealers and certain ostensibly "safe" clients did not have to post collateral[48] and dealers sometimes accepted illiquid assets as collateral.[49] Therefore, the Title VII requirements mandating margin for uncleared transactions are a meaningful change. The impact is likely to be particularly significant because the statute directs regulators to set the capital and margin requirements for uncleared swaps with the key objective of "offset[ing] the greater risk to the swap dealer or major swap participant and the financial system arising from the use of swaps that

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[43] *Id.* § 723(a) (codified at 7 U.S.C. § 2(h) (2012)) (establishing swaps clearing requirement); *id.* § 763(a) (codified at 15 U.S.C. § 78c-3) (2012) (establishing security-based swap clearing requirement).

[44] *Id.* § 733 (codified at 7 U.S.C. § 7b-3 (2012)) (establishing swap execution facilities); *id.* § 723(a) (codified at 7 U.S.C. § 2(h)(8) (2012)) (requiring trade execution for swaps); *id.* § 763(a) (codified at 15 U.S.C. § 78c-3(h) (2012) (requiring trade execution for security-based swaps made available to trade); *id.* § 763(c) (codified at 15 U.S.C. § 78c-4) (2012)) (establishing security-based swap execution facilities).

[45] *Id.* §§ 727 (codified at 15 U.S.C. § 2(a) (2012)) (providing for swap data repository registration and requiring that all swaps be reported to a registered repository); *id.* § 729 (codified at 7 U.S.C. § 6r (2012)) (requiring reporting for uncleared swaps); *id.* § 763(i) (codified at 15 U.S.C. § 78(m), (n) (2012)) (providing for security-based swap data repository registration and requiring that all security-based swaps be reported to a registered repository); *id.* § 766 (codified at 15 U.S.C. § 78m-1 (2012)) (requiring reporting for uncleared security-based swaps).

[46] *Id.* § 727 (codified at 7 U.S.C. § 2(a) (2012)) (requiring public reporting of swap transaction data); *id.* § 763(i) (codified at 15 U.S.C. § 78(m) (2012)) (requiring public reporting of security-based swap transaction data).

[47] *Id.* § 731 (codified at 7 U.S.C. § 6s(e) (2012)) (providing for capital and margin requirements for swaps); *id.* § 764 (codified at 15 U.S.C. § 78o-8(e) (2012)) (providing for capital and margin requirements for security-based swaps).

[48] *See, e.g.*, Manmohan Singh, *Collateral, Netting and Systemic Risk in the OTC Derivatives Market* 5-6 (Int'l Monetary Fund, Working Paper 10/99, 2010), https://www.imf.org/external/pubs/cat/longres.cfm?sk=23741.0.

[49] *See, e.g.*, Anupam Chander & Randall Costa, *Clearing Credit Default Swaps: A Case Study in Global Legal Convergence*, 10 CHI. J. INT'L L. 639, 649 (2010) (observing that in certain bilateral transactions with end-users, dealers may "take unsecured risk . . . or may accept illiquid collateral, for example, business assets, to secure potential counterparty exposure.").

are not cleared."[50] This requirement hints at the value Dodd-Frank's drafters placed on central clearing—the subject of the next section of this Article.

B. What Clearinghouses Do

Mandated central clearing is a key aspect of the G-20 reform plan and, of the Dodd-Frank reform plan for derivatives. Policymakers, shaken by the large bilateral derivatives exposures that came into focus during the crisis, sought to take risk out of individual firms and house it in solidly managed and well-regulated clearinghouses.[51] Proponents of central clearing argue this arrangement reduces systemic risk by limiting big financial institutions' exposures to one another and replacing them with exposures to safe CCPs.[52] Advocates also point to the value of central clearing in enhancing transparency, introducing margin uniformity and discipline, mutualizing losses, and limiting the need for market participants to monitor one another.[53] If a member defaults, a properly functioning CCP can move clients of the defaulting firm to new counterparties with relative ease. Moreover, as one observer has noted, CCPs serve a valuable role in speeding payments to a subset of a failed clearing member's creditors without slowing payments to others.[54]

Clearinghouses have existed for centuries in different contexts. In essence, as Ed Nosal of the Federal Reserve Bank of Chicago explains, clearing is "a set of

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[50] Dodd-Frank Act § 731(codified at 7 U.S.C. § 6s(e)(3)(A) (2012)); *see also id.* § 764(a) (codified at 15 U.S.C. § 78o-7(e)(3)(A) (2012)) (comparable provision for security-based swaps). Former Treasury Secretary Timothy Geithner explained the rationale for stringent uncleared margin requirements:

> Imposing appropriate margin requirements on uncleared swaps will also help create incentives for market participants to use centralized clearing and standardized contracts so that they do not needlessly externalize risks to the financial system by avoiding central clearing. New margin requirements will also mitigate the increased risks presented by derivatives that are appropriately executed outside of central clearing, and therefore do not benefit from the protections of a central counterparty.

Timothy Geithner, Secretary, Dept't of Treasury, Remarks to the International Monetary Conference (June 6, 2011), http://www.treasury.gov/press-center/press-releases/Pages/tg1202.aspx.

[51] *See, e.g.*, *Treasury Secretary Timothy F. Geithner Written Testimony Before the Senate Committee on Agriculture, Nutrition and Forestry Hearing on OTC Derivatives Reform and Addressing Systemic Risk*, DEP'T TREASURY (Dec. 2, 2009), http://www.treasury.gov/press-center/press-releases/Pages/tg425.aspx ("With careful supervision and regulation of the margin and other risk management practices of clearinghouses, central clearing of a substantial proportion of OTC derivatives should help to reduce risks arising from the web of bilateral interconnections among our major financial institutions. This should reduce the prospect of threats to financial stability emerging from the derivative markets.").

[52] *See, e.g.*, Michael Greenberger, *Diversifying Clearinghouse Ownership in Order to Safeguard Free and Open Access to the Derivatives Clearing Market*, 18 FORDHAM J. CORP & FIN. L. 245, 249 (2013) (explaining the role that CCPs play in eliminating counterparty risk).

[53] *See, e.g.*, Janet L. Yellen, *Interconnectedness and Systemic Risk: Lessons from the Financial Crisis and Policy Implications*, BD. GOVERNORS FED. RES. SYS. 15, 16 (Jan. 4, 2013), http://www.federalreserve.gov/newsevents/speech/Yellen20130104a.pdf.

[54] *See generally* Richard Squire, *Clearinghouses as Liquidity Partitioning*, 99 CORNELL L. REV. 857 (2014).

institutional arrangements that are designed to enhance contractual performance."[55] Clearinghouses ensure that each side of the trade gets what the other side has promised it. In the United States, clearinghouses have long served the equities, options, futures, and fixed income markets.[56] However, their active presence in the OTC derivatives markets is more recent. Clearinghouses provide a range of post-execution services, including matching trades, confirming the terms of the transaction, netting, and settling trades.[57] Of particular importance, if a firm has multiple positions with a clearinghouse, positions and associated margin are netted, which allows for offsetting positions to cancel one another out.[58]

Some clearinghouses, including the ones at issue in this Article, also serve as CCPs.[59] Once a trade is executed, a CCP steps in as buyer for every seller and seller for every buyer. The original contract is novated,[60] which means it disappears and is replaced by two contracts with the CCP. Each party subsequently interacts only with the CCP. The CCP collects collateral from each party to protect itself. A key feature of CCPs is loss mutualization—if a party defaults and losses exceed the collateral provided by that party, all of the clearing members share any resulting losses. The following diagram models a CCP, its members, their clients, the settlement banks through which payments are made, and a second CCP with which the first CCP—most likely through shared clearing members—might also be connected.

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[55] Ed Nosal & Robert Steigerwald, *What Is Clearing and Why Is It Important?*, CHI. FED. LETTER, NO. 278, Sept. 2010, at 3.

[56] For a concise history of clearinghouses in the United States, see Ben S. Bernanke, Chairman, Fed. Res., Clearinghouses, Financial Stability, and Financial Reform, Speech at the 2011 Financial Markets Conference (Apr. 4, 2011), https://www.federalreserve.gov/newsevents/speech/bernanke20110404a.htm. In the United States equities and options markets, the CCP can be separate from the trading venue; a market participant can trade in one venue and clear the trade in another venue. In the futures markets, trading and clearing venues have typically been linked; trades executed on an exchange clear through the exchange's clearing venue. Felix B. Chang, *The Systemic Risk Paradox: Banks and Clearinghouses Under Regulation*, 2014 COLUM. BUS. L. REV. 747, 767-70.

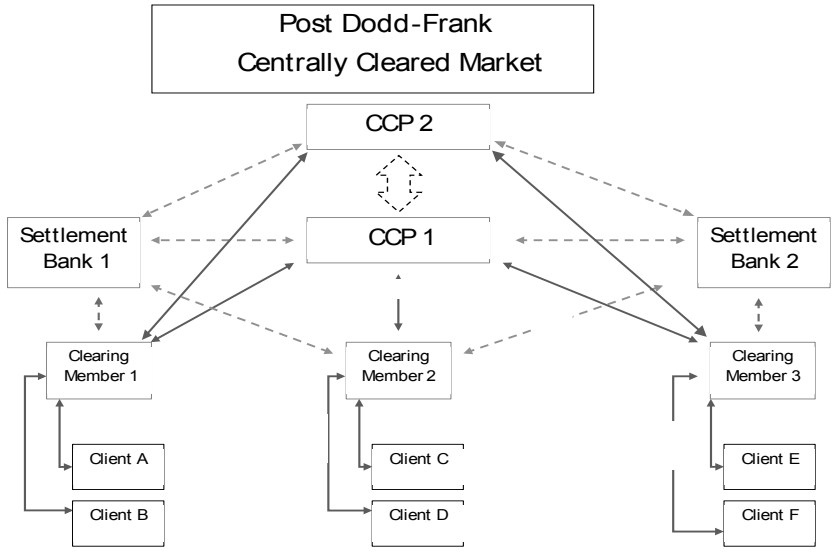
[57] *See, e.g.*, Raymond Knott & Alastair Mills, *Modelling Risk in Central Counterparty Clearing Houses: A Review*, FIN. STABILITY REV., Dec. 2002, at 162 n.2. These services need not be provided by a CCP. *See, e.g.*, Elisabeth Ledrut & Christian Upper, *Clearing Post-Trading Arrangements for OTC Derivatives*, BIS Q. REV., Dec. 2007, at 92 ("Given that CCP services have been limited to a restricted set of contracts, market participants have explored other avenues to obtain some of the benefits of CCPs [including] centralization of information or multilateral netting . . . .").

[58] *See, e.g.*, Robert R. Bliss & Robert S. Steigerwald, *Derivatives Clearing and Settlement: A Comparison of Central Counterparties and Alternate Structures*, 30 ECON. PERSP. 22, 26 (2006) (describing netting).

[59] In this article, "CCP" and "clearinghouse" are generally used interchangeably. CFTC-registered clearinghouses are "derivatives clearing organizations" ("DCOs"). SEC-registered clearinghouses are "clearing agencies." Those terms are also used. For a thorough introduction to CCPs, see JON GREGORY, CENTRAL COUNTERPARTIES: MANDATORY CENTRAL CLEARING AND INITIAL MARGIN REQUIREMENTS FOR OTC DERIVATIVES 236 (2014).

[60] *See* Robert S. Steigerwald, *Central Counterparty Clearing*, *in* UNDERSTANDING DERIVATIVES—MARKETS AND INFRASTRUCTURE 18-20 (2013). An alternative to novation is an "open offer" system, in which the counterparties enter into a contract directly with the CCP. Bliss & Steigerwald, *supra* note 58, at 28 n.11.

Figure 3[61]



Because each original party to the transaction is left with a contract with the CCP, for the remainder of the contract, the buyer and seller no longer have to worry about the other's creditworthiness.[62] The creditworthiness of the new counterparty—the clearinghouse—is all that matters, and—the assumption goes—the CCP ensures "minimal, near-zero counterparty risk."[63] In this way, a clearinghouse can protect large financial firms from one another by putting itself in between them. As Professor Adam Levitin explains, "[b]y separating counterparty risk from position risk in swaps transactions, the clearinghouse serves as a systemic-risk circuit breaker . . . ."[64] During the last crisis, financial institutions rushed to get out of derivatives

[61] Author's rendering.

[62] To say that clearing members have *no* need to worry may be too strong; if the CCP properly allocates losses among members, a problem at any counterparty to the CCP can expose every other counterparty to the CCP to losses. *See* Bob Hills et al., *Central Counterparty Clearing Houses and Financial Stability*, FIN. STABILITY REV. June 1999, at 128 ("Ideally the central counterparty should be structured in a way that gives market participants a continuing interest in the credit quality of the entities with which they trade and in the central counterparty's ability to monitor and control its credit risk.").

[63] Viral V. Acharya et al., *Centralized Clearing for Credit Derivatives*, *in* RESTORING FINANCIAL STABILITY: HOW TO REPAIR A FAILED SYSTEM 251 (Viral V. Acharya & Matthew Richardson eds., 2011).

[64] Adam J. Levitin, *Response: The Tenuous Case for Derivatives Clearinghouses*, 101 GEO. L.J. 445, 453 (2013).

contracts with weakening counterparties by interposing safer counterparties; a CCP would eliminate the need to run from failing counterparties.[65]

Because clearinghouses collect risk from the market, how they manage that risk is of great importance. A key component of risk management is the CCP's balanced book: The contract the CCP enters into with the original seller is offset exactly by the contract it enters into with the original buyer. This balance generally means that the CCP is protected from market risk, provided neither counterparty defaults on its obligations to the CCP. Because members do not always meet their obligations, however, CCPs employ other mechanisms to manage risks deriving from the members and the products they clear.

Clearing members (also known as clearing participants) have to meet the CCP's threshold requirements. These requirements may include indicia of financial strength, operational capabilities, and effective risk management.[66] In addition, clearing members have to open an account with at least one of the CCP's settlement banks, through which a clearing member satisfies its financial obligations (such as paying variation margin) to the CCP.[67] CCPs monitor their members and may impose risk-specific restrictions on them—including position limits—to prevent overexposure to any particular firm.[68] Upon joining a CCP, each member contributes to a guaranty (or default) fund, which can be drawn on if one or more members

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[65] For a discussion of this benefit, see Beylin, *supra* note 5, at 49.

[66] *See, e.g.*, CHI. MERCANTILE EXCHANGE, RULEBOOK Rule 901, http://www.cmegroup.com/rulebook/CME/I/9/9.pdf (last visited Mar. 16, 2016) (setting forth requirements for clearing members); ICE CLEAR CREDIT, CLEARING RULES Rule 201 (2015), https://www.theice.com/publicdocs/clear_credit/ICE_Clear_Credit_Rules.pdf (setting forth requirements for clearing participants).

[67] John W. McPartland, *Clearing and Settlement of Exchange Traded Derivatives*, CHI. FED LETTER, No. 267, Oct. 2009, at 2-3.

[68] *See, e.g.*, CHI. MERCANTILE EXCHANGE, RULEBOOK Rule 8F010, http://www.cmegroup.com/rulebook/CME/I/8F/8F.pdf (last visited Mar. 16, 2016) ("[I]f the Clearing House determines in good faith that, based on the exercise of prudent risk management standards, that [*sic*] an OTC Clearing Member poses undue risk to the Clearing House based on its OTC Derivatives portfolio, the Clearing House may take any or all of the following actions with respect to such OTC Clearing Member: 1) impose an additional performance bond requirement; 2) prohibit the addition of any new OTC Derivative positions, or 3) require the reduction or unwinding of OTC Derivatives positions."); ICE CLEAR CREDIT, *supra* note 66, at Rule 203(b) ("[F]or the protection of ICE Clear Credit and the Participants, ICE Clear Credit shall be authorized: (i) to impose such additional capital, Margin or other requirements on a Participant; (ii) to allow such Participant to submit Trades for liquidation only; (iii) to limit or restrict the type of Contracts that may be cleared by such Participant in any of its accounts with ICE Clear Credit; or (iv) to limit or restrict the aggregate notional or other reference amount of positions in Contracts that are permitted to be maintained by such Participant in any of its accounts with ICE Clear Credit.").

default and the defaulter's collateral proves inadequate.[69] A clearing member's contribution can be adjusted to reflect the risk posed by that member to the CCP.[70]

A firm that wants to or must clear its trades, but is not eligible to become a member of a CCP or chooses not to incur the cost, must clear through a clearing member. Because the burdens of CCP membership are high,[71] most swap market participants prefer indirect access through a clearing member or—even more indirectly—through a clearing member's client.[72] Few clearing members, however, offer client clearing, a development that may constrain the ability of market participants to trade derivatives subject to the clearing mandate.[73] Even swap dealers may not choose to become clearing members.[74]

CCPs protect themselves by carefully choosing products for clearing. CCPs assess the risk profile of an asset class or product before accepting it for clearing.[75] They use models to determine how to protect themselves from the risks associated with clearing these products. These models take into account such factors as how prices have moved over time and how one product might interact with other products cleared by the CCP.

Collecting initial margin, which is essentially collateral, is a key way that CCPs protect themselves. As the Clearing Timeline below shows, when a contract is first cleared, the CCP collects from the clearing member *initial margin* (also known as a

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[69] GREGORY, *supra* note 59, at 31 (explaining that a key to the CCP "loss mutualisation" model is the requirement that "all members pay into [a] default fund [and thus] all contribute to absorbing an extreme default loss").

[70] IMF, GLOBAL FINANCIAL STABILITY REPORT, *supra* note 30, at 107 ("Guarantee fund contributions should be related to the CM's market position and the nature of its exposures and be reevaluated regularly.").

[71] *See, e.g.*, Jo Braithwaite, *Legal Perspectives on Client Clearing* 9 (LSE Legal Studies Working Paper No. 14/2015, 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2629193 ("The membership criteria for clearing services for OTC derivatives are onerous, even by the standards of other clearing services. This is because a CCP faces more risk clearing OTC derivatives, which have very high values and long maturities compared to other cleared contracts (e.g., for commodities), while the operational complexities involved in clearing OTC derivatives are also far greater."); *see also* Joe Rennison, *Nomura Exits Swaps Clearing for US and European Customers*, FIN. TIMES (May 12, 2015), http://www.ft.com/intl/cms/s/0/e1883676-f896-11e4-be00-00144feab7de.html#axzz3hVR1yzZe. For an estimate of the costs of clearing, see Beylin, *supra* note 5, at 46. As Beylin points out, clearing indirectly is costly too. *Id.*

[72] *See* GREGORY, *supra* note 59, at 136 (explaining that some market participants, "particularly buy side and smaller financial institutions" either may not be eligible for membership or "may find the indirect clearing route more efficient").

[73] *See* Arshadur Rahman, *Over-the-Counter (OTC) Derivatives, Central Clearing and Financial Stability*, 55 BANK ENGLAND Q. BULL. 283, 290 (2015) ("[T]here are a relatively small number of clearing members for these CCPs, and fewer still that offer client clearing. Those clearing members that do offer client clearing become more important within the system because non-clearing member firms would otherwise be unable to access central clearing, hindering their ability to undertake OTC derivatives transactions (especially if these contracts become subject to the clearing obligation).") (internal citation omitted).

[74] Beylin, *supra* note 5, at 19 n.45.

[75] *See* GREGORY, *supra* note 59, at 236-37.

performance bond)—typically in the form of cash or other liquid assets, such as Treasury securities or gold.[76] The CCP adjusts the initial margin periodically over the term of the contract. Initial margin is designed to protect the CCP from most potential future losses should the member default leaving the CCP to wind down the defaulter's portfolio.[77] It "is designed to cover the worst-case close out costs (due to the need to find replacement transactions) in the event a member defaults."[78] The CCP uses models, assumptions, and historical data to set initial margin. An initial margin reflects—among other things—the historical price volatility of the product and is in proportion to the clearing member's net or gross position in that product.[79] Initial margin should be sufficient to allow the CCP the time it needs to terminate the relevant position if the clearing member defaults.[80] In setting an initial margin, regulators and market participants strive to cover all but the most extreme loss scenarios.[81] CCPs rely on complex models to achieve the targeted level of coverage.[82] As Knott and Mills explain, the "challenge faced by CCPs is to set initial

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[76] For a discussion of initial margin, see FED. RES. BANK OF N.Y., STAFF REPORT NO. 424, POLICY PERSPECTIVES ON OTC DERIVATIVES MARKET INFRASTRUCTURE 6-7 (2010) [hereinafter POLICY PERSPECTIVES ON OTC DERIVATIVES MARKET]; GREGORY, *supra* note 59, at 137.

[77] *See, e.g.*, Bliss & Steigerwald, *supra* note 58, at 25 ("Margining systems are designed to ensure that in the event that a clearing member fails to meet a margin call, sufficient funds remain readily available to close out the member's positions without loss to the CCP in most market conditions."); COMM. ON PAYMENT & SETTLEMENT SYS. & TECH. COMM. OF THE INT'L ORG. OF SEC. COMM'NS, PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES 52 (Apr. 2012), http://www.bis.org/cpmi/publ/d101a.pdf [hereinafter CPSS/IOSCO PRINCIPLES] ("A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements that are sufficient to cover its potential future exposures to participants in the interval between the last margin collection and the close out of positions following a participant default.").

[78] GREGORY, *supra* note 59, at 30.

[79] *See* McPartland, *supra* note 67, at 2; *see also* WALLACE C. TURBEVILLE, DERIVATIVES CLEARINGHOUSES IN THE ERA OF FINANCIAL REFORM 9-12 (2010), http://rooseveltinstitute.org/wp-content/uploads/2010/12/derivatives_clearinghouses_in_the_era_of_financial_reform.pdf.

[80] POLICY PERSPECTIVES ON OTC DERIVATIVES MARKET, *supra* note 76, at 7.

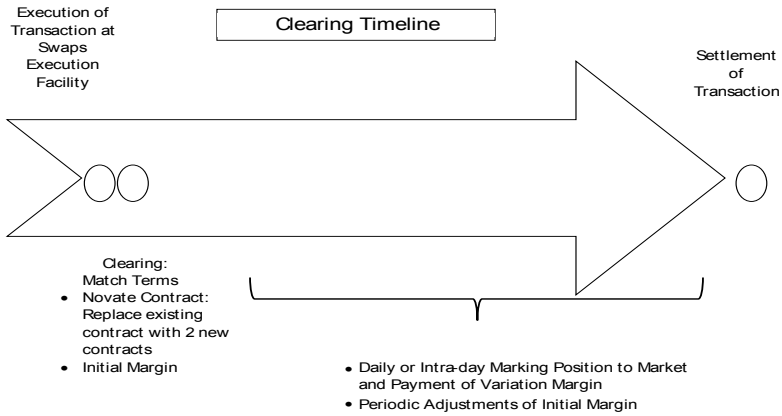
[81] *See, e.g.*, CPSS/IOSCO PRINCIPLES, *supra* note 77, at 52 (calling for a confidence level of "at least ninety-nine percent with respect to the estimated distribution of future exposure"); Stan Ivanov & Lee Underwood, *CDS Clearing at ICE: A Unique Methodology*, FUTURES INDUSTRY, Nov. 2011, at 33, https://www.theice.com/publicdocs/clear_credit/FIA_magazine_CDS_risk_management_article.pdf ("Because it can take several days for the market to absorb the shock of default in an OTC market such as such as CDS, the ICE CDS risk methodology has adopted a five-day risk horizon at a risk quantile of 99%. This means that margins are set to cover five days of adverse price/credit spread movements for the portfolio positions with a confidence level of 99%."); LCH.CLEARNET, CCP RISK MANAGEMENT, RECOVERY & RESOLUTION 12, http://www.lchclearnet.com/documents/731485/762448/final+white+paper+version+three.pdf/1d1700aa-a1ae-4a6c-8f6f-541eec9b7420 ("Dodd-Frank rules . . . require a minimum 99% confidence level for all products. In Europe, EMIR [European Market Infrastructure Regulation] requirements go further, with a minimum . . . 99.5% for OTC derivatives. LCH.Clearnet has chosen . . . to apply a confidence level of 99.7% across all our products.").

[82] To get a sense of the complexity of the margin analysis, see Ben Larah, *CCP Margin Models: Comparing Historic VaR and SPAN*, OTC SPACE (June 6, 2013),

margin at a level sufficient to provide protection against all but the most extreme price moves, but not so high as to damage market liquidity or discourage use of the CCP."[83]

Another way the CCP protects itself is by daily (or more frequently) collecting cash *variation margin* (also known as mark-to-market margin) from clearing members. Variation margin reflects daily changes in the market value of clearing members' portfolios.[84] Thus, whereas initial margin is collateral for the purpose of protecting the CCP against potential future exposures, variation margin is a payment that transfers actual market gains and losses between the CCP and its counterparties typically within a day of their occurrence.[85]

Figure 4[86]



As noted earlier, many firms are not direct CCP members. The clearing members through whom these firms clear are responsible for managing their customers' risk, guaranteeing their customers' contract performance, and collecting and passing on to the clearinghouse initial and variation margin for their customers.[87] The CCP

http://www.theotcspace.com/2013/06/06/ccp-margin-models-comparing-historic-var-and-span.

[83] Knott & Mills, *supra* note 57, at 166.

[84] *See, e.g.*, CPSS/IOSCO PRINCIPLES, *supra* note 77, at 54.

[85] *Compare* 17 C.F.R. § 1.3(ccc) (2016) (defining "initial margin" as "money, securities, or property posted by a party to a futures, option, or swap as performance bond to cover potential future exposures arising from changes in the market value of the position"), *with id.* § 1.3(fff) (defining "variation margin" as "a payment made by a party to a futures, option, or swap to cover the current exposure arising from changes in the market value of the position since the trade was executed or the previous time the position was marked to market").

[86] Author's rendering.

[87] For a discussion of client clearing, see GREGORY, *supra* note 59, at 127-29.

maintains customer collateral separately from the clearing member's proprietary (or house) collateral.[88] If the clearing member defaults, this collateral segregation protects customers and facilitates moving customer trades to other clearing members.

One of the key jobs of a CCP is to protect itself against and plan for member and customer defaults. A default destabilizes the CCP's normally matched book, pursuant to which there is one clearing member on one side of a trade and another clearing member on the other side of the trade. Planning for defaults requires considering operational, legal, and moral hazard issues, among others.[89] After a default, the CCP has to dispose of the defaulting member's own positions at the CCP and move customer positions and associated collateral.[90] The CCP must have enough available liquidity to meet all of its cash payout requirements during the default period.[91] To staunch immediate losses, the CCP can hedge some or all of the defaulting firm's portfolio with new positions in the market.[92] The CCP may opt to enter into offsetting positions, auction off the defaulting firm's positions, allocate them to non-defaulting clearing members, or tear up the offsetting transactions. The CCP may require members to participate in auctions, may open the auction to non-members, and may provide inducements to bid in the auction.[93] A CCP may borrow personnel—including traders with relevant expertise—from the clearing members to form a committee to assist CCP personnel managing a default. Given the complexities of managing a default, CCPs conduct dry runs of default processes to prepare members and CCP staff in advance.[94]

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[88] *See id.* at 223-26 (discussing separation of client and clearing member accounts at CCP).

[89] For an insightful discussion of the complexities of the default processes and preparing for a default, see generally Transcript of CFTC Market Risk Advisory Committee Meeting (Apr. 2, 2015), http://www.cftc.gov/idc/groups/public/@aboutcftc/documents/file/mrac_040215_transcript.pdf.

[90] *See* JASON QUARRY ET AL., OTC DERIVATIVES CLEARING: PERSPECTIVES ON THE REGULATORY LANDSCAPE AND CONSIDERATIONS FOR POLICYMAKERS 5 (2012), http://www.oliverwyman.com/media/OTC_Derivatives_Clearing.pdf (showing that Lehman default was managed without making it past Lehman's initial margin in the default waterfall); Natasha de Terán, *How the World's Largest Default Was Unravelled*, FIN. NEWS (Oct. 13, 2008), http://www.swapclear.com/Images/Lehman%202008%20Financial%20News_tcm14-59521.pdf (discussing how LCH.Clearnet managed the Lehman default, which included a swaps portfolio).

[91] *See, e.g.*, Transcript of CFTC Market Risk Advisory Committee Meeting, *supra* note 89, at 20 (statement of Ian Springle, ICE Clear Credit) (explaining that "part of our preparations are making sure that we have sufficient liquid resources to meet our daily cash payouts required during a default").

[92] For a default management timeline, see INTERCONTINENTAL EXCH., ICE CLEAR CREDIT: PREPARATIONS FOR A POTENTIAL CLEARING PARTICIPANT DEFAULT 5 (2015), http://www.cftc.gov/ucm/groups/public/@aboutcftc/documents/file/mrac040215presentations_ice.pdf.

[93] CME GROUP INC., CME DEFAULT MANAGEMENT 3, 6 (2015), http://www.cftc.gov/ucm/groups/public/@aboutcftc/documents/file/mrac040215presentations_cme.pdf.

[94] *Id.* at 5-7; INTERCONTINENTAL EXCH., *supra* note 92, at 7-8.

The defaulting member's initial margin should cover CCP losses during the default management process. If it does not, the CCP proceeds down a so-called default waterfall to absorb any remaining losses. A default waterfall typically includes the defaulter's margin, its contributions to the guaranty fund, non-defaulting members' contributions to the guaranty fund, and a contribution from the CCP itself. If the losses outstrip these resources, the CCP moves to the unfunded part of the waterfall by imposing additional losses on non-defaulting members through assessments for additional contributions or haircuts on non-defaulters' margin. If a clearing member's customer defaults, other customers' collateral typically is not applied to cover losses.[95] Under international guidelines, systemically important CCPs are supposed to be prepared to handle the simultaneous default of their two largest clearing members and their affiliates (the so-called "Cover 2" standard).[96]

The following table shows the waterfalls employed by several large OTC derivative CCPs in the event of a member default. The CCPs turn to the sources listed below in descending order.

Table 1: Default Waterfalls[97]

CME OTC IRS	CME OTC CDS	ICE Clear Credit—CDS	LCH Clearnet–OTC IRS	EurexOTC Clear
Defaulted clearing member's IRS fund performance bonds	Defaulted clearing member's CDS fund performance bonds	Defaulted clearing member's margin	Defaulted clearing member margin	Defaulted clearing member margin
Defaulted clearing member's IRS guaranty fund contribution	Defaulted clearing member's CDS guaranty fund contribution	Defaulted clearing member's guaranty fund contribution	Defaulter's default fund contribution	Defaulted clearing member clearing fund contribution

[95] *See* GREGORY, *supra* note 59, at 223-36 (discussing the CFTC's "legally segregated operationally commingled (LSOC)" approach for protecting clearing members' customers from one another).

[96] CPSS/IOSCO PRINCIPLES, *supra* note 77, at 36 ("[A] CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.").

[97] *Cleared OTC Financial Products*, CME GRP., www.cmegroup.com/trading/otc/cleared-otc-initiatives.html (last visited Apr. 23, 2016); INTERCONTINENTAL EXCH., *supra* note 92, at 3; Transcript of CFTC Market Risk Advisory Committee Meeting, *supra* note 89, (statement of Ian Springle, ICE Clear Credit); *Risk Management Overview*, LCH.CLEARNET, www.lchclearnet.com/risk-collateral-management/risk-management-overview (last visited Apr. 23, 2016); EUREX CLEARING, EUREXOTC CLEAR FOR IRS—EMIR (2014), http://www.eurexclearing.com/blob/305764/5913f4c9d5a51ed47e59d3a63f21c62b/data/eurex_otc_clear_services.pdf; *ICE Clear U.S.: Regulation*, INTERCONTINENTAL EXCH., https://www.theice.com/clear-us/regulation (last visited Apr. 23, 2016).

CME OTC IRS	CME OTC CDS	ICE Clear Credit—CDS	LCH Clearnet–OTC IRS	EurexOTC Clear
$150 M. CME designated working capital for IRS guaranty fund	$50 M. CME designated working capital for CDS guaranty fund	Defaulted member specific wrong-way risk guaranty fund component (if applicable)	$2 M. LCH. Clearnet LLC capital	EUR 50 M EUR Dedicated amount of Eurex Clearing AG
Non-defaulted clearing members IRS guaranty fund contributions	Non-defaulted clearing members CDS guaranty fund contribution	$50 M. ICE contribution[98]	$260 M. SwapClear US-Domiciled service default fund	Clearing fund contributions of other members
Assessment Powers (to cover 3rd and 4th largest clearing member shortfalls)	Assessment powers (to cover 3rd and 4th largest clearing member shortfalls)	Non-defaulted clearing members' guaranty fund contributions/ ICE Pro Rata guaranty fund contribution	Unfunded contributions – Assessments	Assessment to the clearing fund
		Assessments of non-defaulted clearing members	Service continuity - variation margin haircutting	Parental guaranty
			Service closure	Remaining equity of Eurex clearing AG

The default waterfall exposes members to potential losses from the risks taken by other members. This feature of CCPs is designed to inspire members to monitor one another and the way the CCP manages risks.[99] As the next section discusses, regulators also actively regulate and monitor CCPs.

C. How Swap Clearinghouses Are Regulated

Having placed clearinghouses at the center of OTC derivatives reform, United States and international regulators are engaged in an ongoing effort to rethink the way they regulate CCPs. Former Federal Reserve Chairman Ben Bernanke put it this way: "As Mark Twain's character Pudd'nhead Wilson once opined, if you put all your eggs in one basket, you better watch that basket."[100] Titles VII and VIII of Dodd-Frank, which address numerous aspects of CCPs, are a central part of that effort. In the five years since Dodd-Frank became law, regulators' focus on CCPs has grown as they have begun to ponder the potential consequences of a CCP failure.

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[98] This contribution is in two distinct parts: "The 10 first one is the $25 million ICE priority contribution, which we use before the nondefaulters' funding, guaranty fund. We also have a pro rata $25 million contribution, which we use prorated during the consumption of the nondefaulters, guaranty fund." Transcript of CFTC Market Risk Advisory Committee Meeting, *supra* note 89, at 28 (statement of Ian Springle, ICE Clear Credit).

[99] *See, e.g.*, Knott & Mills, *supra* note 57, at 172 ("[M]embers residual exposure to the uncovered losses of the CCP . . . creates an incentive for clearing members to take an active interest in the overall standard of a CCP's risk management.").

[100] Bernanke, *supra* note 56.

A key feature of the regulatory scheme for OTC derivatives is the registration and attendant regulation of CCPs. Clearinghouses that clear swaps must register with the CFTC as derivative clearing organizations (DCOs).[101] Clearinghouses that clear security-based swaps must register with the SEC as clearing agencies.[102] The statute allows the CFTC and SEC to exempt from registration CCPs that are supervised by the other commission or a foreign regulator.[103] DCOs and clearing agencies existed before Dodd-Frank to clear exchange-traded derivatives and securities, so Dodd-Frank did not have to create an entirely new regulatory framework for these entities.

Under both statutory regimes, CCPs are self-regulatory organizations ("SROs"), which means that—subject to oversight by the relevant commission—they are able to write and enforce rules applicable to their members. Clearing agencies are arguably subject to more exacting oversight than DCOs because of the statutory process by which rules are reviewed.[104] DCOs may seek prior CFTC approval[105] or may simply self-certify to the CFTC that their rules comply with the Commodity Exchange Act.[106] The CFTC may intervene before the rule takes effect and can disapprove a rule filing if the CFTC finds that the rule would violate the Commodity Exchange Act.[107] By contrast, the SEC routinely reviews and approves substantive clearing agency rule filings.[108] Additionally, both agencies retain some leverage over CCP rules by virtue of the need for CCPs not to alienate their regulators.

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[101] Dodd-Frank Act § 725(a) (codified at 7 U.S.C. § 7a-1 (2012)).

[102] *Id.* § 763(b) (codified at 15 U.S.C. § 78q-1(g) (2012)). Entities providing clearing services for securities must register with the SEC under, and meet the requirements set forth in, section 17A of the Securities Exchange Act of 1934 (codified at 15 U.S.C. § 78q-1(b)) and rule 17Ab2-1, 17 C.F.R. § 240.17Ab2-1 (2016).

[103] Dodd-Frank Act § 725(b) (codified at 7 U.S.C. § 7a-1(h) (2012)) (authorizing CFTC to exempt comparably supervised CCPs); *id.* § 763(b) (codified at 15 U.S.C. § 78q-1(k) (2012)) (authorizing SEC to exempt comparably supervised CCPs).

[104] *See, e.g.*, CFTC & SEC, A JOINT REPORT OF THE SEC AND CFTC ON HARMONIZATION OF REGULATION 27-32 (2009) (comparing and analyzing the relative merits of the CFTC and SEC procedures for SRO rule filings); Derek Fischer, Note, *Dodd-Frank's Failure to Address CFTC Oversight of Self-Regulatory Organization Rulemaking*, 115 COLUM. L. REV. 69, 89-93 (2015) (arguing that the SEC's standard of reviewing SRO rulemaking has more teeth than the CFTC's).

[105] 7 U.S.C. § 7a-2(c)(2) (2012).

[106] *Id.* § 7a-2(c)(1) (2012) ("[A DCO] may elect to approve and implement any new rule or rule amendment, by providing to the Commission . . . a written certification that the . . . new rule, or rule amendment complies with this chapter (including regulations under this chapter)."); 17 C.F.R. § 40.6 (2016) (setting forth self-certification process). For an example of a self-certification filing, see Letter from Julian Oliver, Chief Compliance Officer, LCH.Clearnet Ltd., to Christopher Kirkpatrick, CFTC (July 15, 2015), http://www.cftc.gov/filings/orgrules/rule071615lchltddco001.pdf.

[107] 7 U.S.C. § 7a-2(c)(2) & (5) (2012).

[108] Securities Exchange Act § 19(b)(1) (codified at 15 U.S.C. § 78s(b)(1) (2012)) (generally requiring SROs to file rule amendments with the SEC and the SEC to publish them for comment and consider whether to approve them); 17 C.F.R. § 240.19b-4 (2016) (setting forth procedures for proposed rule changes by SROs).

Dodd-Frank modified the existing regulatory structure for CCPs in a number of ways. First, Congress authorized the CFTC and SEC to write tailored rules for swaps CCPs.[109] Second, the statute directs the commissions to write rules governing conflicts of interest at CCPs if "necessary or appropriate to improve the governance of, or to mitigate systemic risk, promote competition, or mitigate conflicts of interest."[110] Third, Title VII prescribes an "open access" model for swaps CCPs pursuant to which they must accept swaps for clearing, regardless of where the transactions are executed.[111] Open access stands in contrast with the futures model in which DCOs are linked with a particular exchange. Fourth, Title VII includes a modified and expanded set of "core principles" for DCOs.[112] These core principles are intended to be guiding principles that afford DCOs "reasonable discretion" in compliance.[113] There are eighteen principles covering topics including; financial resources, participant and product eligibility, risk management, settlement procedures, default rules and procedures, rule enforcement, system safeguards, reporting, recordkeeping, public disclosure, antitrust, and governance.[114] Even though most of these topics were covered in the pre-Dodd-Frank core principles under the Commodity Exchange Act, Dodd-Frank expanded many to include more prescriptive detail.[115] Fifth, Dodd-Frank requires each CCP to have a chief compliance officer.[116]

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[109] Dodd-Frank Act § 725(c) (codified at 7 U.S.C. § 7a-1(c)(2)(A)(i) (2012)) (requiring DCOs to adhere to rules imposed by the CFTC pursuant to 7 U.S.C. § 12a(5)); *id.* § 763(b) (codified at 15 U.S.C. § 78q-1(i), (j) (2012)) (authorizing the SEC to write security-based swap clearing agency standards).

[110] *Id.* § 726 (codified at 15 U.S.C. § 8323 (2012)) (directing the CFTC to review the need for and adopt conflict-mitigating rules); *id.* § 765 (codified at 15 U.S.C. § 8343 (2012)) (providing a parallel provision to SEC); s*ee also id.* § 725(d) (2010) (codified at 7 U.S.C. § 7a-1 note (2012)) ("[Directing the CFTC to] adopt rules mitigating conflicts of interest in connection with the conduct of business by a swap dealer or a major swap participant with a [swaps DCO] in which the swap dealer or major swap participant has a material debt or material equity investment."). Congress considered limits on control and voting rights as a way to prevent large dealers from becoming too influential at CCPs. The statutory authority offers the agencies more leeway than the controversial Lynch Amendment would have. Its sponsor, Congressman Stephen Lynch, argued that proposed amendment would have "prevent[ed] those big banks and major swap participants, like AIG, from taking over the police station—these new clearinghouses . . . by limiting to a 20 percent voting stake the ownership interest in those banks and the governance of the clearing and trading facilities." 155 CONG. REC. 14711 (2009) (statement of Rep. Lynch).

[111] Dodd-Frank Act § 725(c) (codified at 7 U.S.C. § 7a-1(c)(2)(C)(iii)(III) (2012)) (requiring that DCO provide "fair and open access"); *id.* § 763 (codified at 15 U.S.C. § 78c-3(a)(2)(B) (2012)) (requiring that clearing agency must "provide for non-discriminatory clearing of a security-based swap executed bilaterally or on or through the rules of an unaffiliated national securities exchange or security-based swap execution facility").

[112] *Id.* § 725(c) (codified at 7 U.S.C. § 7a-1(c)(2) (2012)).

[113] 7 U.S.C. § 7a-1(c)(2)(A)(ii)) (2012).

[114] Dodd-Frank Act § 725(c) (codified at 7 U.S.C. § 7a-1(c)(2) (2012)).

[115] For example, compare 7 U.S.C. § 7a-1(c)(2)(D)(i) (2012) (requiring DCOs to ensure that they "possess[ ] the ability to manage the risks associated with discharging the responsibilities of the DCO through the use of appropriate tools and procedures" and setting

The final component of the Dodd-Frank changes for CCPs is in Title VIII of Dodd-Frank, which posits a more stringent regulatory regime for systemically important CCPs. Title VIII's focus on risk management was a natural response to the enhanced role CCPs would play under the new regulatory framework. Congress prefaced the title with the finding that financial market utilities ("FMUs") "may reduce risks for their participants and the broader financial system, but such utilities may also concentrate and create new risks" and thus enhanced regulation was warranted.[117] Under Title VIII, the Financial Stability Oversight Council ("FSOC")—a conclave drawn from other financial regulators—may designate systemically important FMUs (and those likely to become systemically important) for additional regulatory oversight.[118] FSOC has designated eight FMUs, including two swaps CCPs.[119]

Title VIII charges the SEC and CFTC with writing and enforcing heightened risk management standards for designated CCPs and gives the Board of Governors of the Federal Reserve System ("Federal Reserve") a back-up regulatory role.[120] These standards are for "promot[ing] risk management [and] safety and soundness," "reduc[ing] systemic risks," and "support[ing] the stability of the broader financial system."[121] The statute mentions a number of specific risk management areas, including margin and default procedures, but allows the regulators wide latitude to write standards covering other areas.[122] A designated CCP must seek pre-approval from its regulator for changes in rules, procedures and operations that would "materially affect, the nature or level of risks presented by" the CCP.[123]

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forth prescriptions for four risk management areas), with 7 U.S.C. § 7a-1(a)(2)(D) (2006), *amended by* Pub. L. No. 111-203, 124 Stat. 1376 (2010) (requiring DCOs to have "the ability to manage the risks associated with discharging the responsibilities of a derivatives clearing organization through the use of appropriate tools and procedures").

[116] Dodd-Frank Act § 725(b) (codified at 7 U.S.C. § 7a-1(i) (2012)) (requiring DCOs to designate a chief compliance officer); *id.* § 763(a) (codified at 15 U.S.C. § 78c-3(j) (2012)) (requiring clearing agencies to designate a chief compliance officer).

[117] *Id.* § 802(a) (codified at 12 U.S.C. § 5461(a) (2012)).

[118] Dodd-Frank Act § 804 (codified at 12 U.S.C. § 5463 (2012)). For a general overview of Title VIII, see Norbert J. Michel, *Financial Market Utilities: One More Dangerous Concept in Dodd-Frank*, HERITAGE FOUND. (Mar. 20, 2015), http://www.heritage.org/research/reports/2015/03/financial-market-utilities-one-more-dangerous-concept-in-doddfrank.

[119] Among the designated FMUs are the Chicago Mercantile Exchange, Inc. and ICE Clear Credit LLC, both of which clear swaps. *Fin. Stability Oversight Council: Designations*, DEP'T TREASURY (Apr. 3, 2015), http://www.treasury.gov/initiatives/fsoc/designations/Pages/default.aspx#FMU.

[120] Dodd-Frank Act § 805(a)(2) (codified at 12 U.S.C. § 5464(a)(2) (2012)) (relating to setting standards); *id.* § 807 (codified at 12 U.S.C. § 5466 (2012)) (relating to examination and enforcement).

[121] *Id.* § 805(b) (codified at 12 U.S.C. § 5464(b) (2012)).

[122] *Id.* § 805(c) (codified at 12 U.S.C. § 5464(c) (2012)).

[123] *Id.* § 806(e) (12 U.S.C. § 5465(e) (2012)).

Dodd-Frank directs the CFTC, SEC, and the Federal Reserve to develop a joint risk management supervisory framework for CCPs.[124] The Federal Reserve's supporting role in CCP oversight allows the SEC and CFTC to benefit from the Federal Reserve's pre-crisis regulatory CCP expertise. It also allows the Federal Reserve to have a window into CCPs that might one day avail themselves of Federal Reserve accounts, services, and discount window advances—privileges Dodd-Frank authorizes the Federal Reserve to make available to designated CCPs.[125]

Under Titles VII and VIII, the SEC, CFTC, and the banking regulators have engaged in extensive rulemaking, much of it related to CCPs.[126] U.S. CCP regulation draws heavily from international standards. Dodd-Frank directs the SEC and CFTC to "prescribe risk management standards [for systemically designated CCPs], taking into consideration relevant international standards and existing prudential requirements."[127] International standards governing FMUs predate the financial crisis,[128] but—as Dodd-Frank notes—have been "evolving" since the crisis.[129]

Most significant among the post-crisis efforts are the Committee on Payment and Settlement Systems ("CPSS") (subsequently renamed the Committee on Payments and Market Infrastructures ("CPMI")) and the International Organization of Securities Commissions ("IOSCO"). These organizations issued a revised set of standards for financial market infrastructures, including CCPs, in 2012.[130] As

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[124] *Id.* § 813 (12 U.S.C. § 5472 (2012)); *see also* BD. OF GOVERNORS OF THE FED. RESERVE SYS., SEC & CFTC, RISK MANAGEMENT SUPERVISION OF DESIGNATED CLEARING ENTITIES (2011), http://www.sec.gov/news/studies/2011/813study.pdf (joint report required by section 813).

[125] Dodd-Frank Act § 806 (codified at 12 U.S.C. § 5465); *see also* Financial Market Utilities, 78 Fed. Reg. 76973 (Dec. 20, 2013) (to be codified at 12 C.F.R. pts. 208, 217 & 225) (setting out standards under which FMUs can obtain privileges authorized by section 806).

[126] *See, e.g.*, Derivatives Clearing Organizations General Provisions and Core Principles, 76 Fed. Reg. 69334 (Nov. 8, 2011) (to be codified at 17 C.F.R. pts. 1, 21, 39 & 140); Customer Clearing Documentation, Timing of Acceptance for Clearing, and Clearing Member Risk Management, 77 Fed. Reg. 21278 (Apr. 9, 2012) (to be codified at 17 C.F.R. pts. 1, 23, 37, 38 & 39); Clearing Agency Standards, 77 Fed. Reg. 66220 (Nov. 2, 2012) (to be codified at 17 C.F.R. pt. 240); Standards for Covered Clearing Agencies; 79 Fed. Reg. 29507 (proposed May 27, 2014) (to be codified at 17 C.F.R. pt. 240); Derivatives Clearing Organizations and International Standards, 78 Fed. Reg. 72476 (Dec. 2, 2013) (to be codified at 17 C.F.R. pts. 39, 140 & 190); Enhanced Risk Management Standards for Systemically Important Derivatives Clearing Organizations, 78 Fed. Reg. 49663 (Aug. 15, 2013) (to be codified at 17 C.F.R. pt. 39); Clearing Requirement Determination Under Section 2(h) of the CEA, 77 Fed. Reg. 74284 (Dec. 13, 2012) (to be codified at 17 C.F.R. pts. 39 & 50).

[127] Dodd-Frank Act § 805(a)(2)(A) (2010) (codified at 12 U.S.C. § 5464(a)(2)(A) (2012)).

[128] *See, e.g.*, BANK FOR INT'L SETTLEMENTS, REPORT OF THE COMMITTEE ON INTERBANK NETTING SCHEMES OF THE CENTRAL BANKS OF THE GROUP OF TEN COUNTRIES (1990), http://www.bis.org/cpmi/publ/d04.pdf; COMM. ON PAYMENT & SETTLEMENT SYS. & TECH. COMM. OF THE INT'L ORG. OF SEC. COMM'NS, RECOMMENDATIONS FOR CENTRAL COUNTERPARTIES (2004), http://www.bis.org/cpmi/publ/d64.htm.

[129] *See* 15 U.S.C. §78q-1(i) (2012) (suggesting that the SEC "conform [security-based swap clearing agency] standards or oversight to reflect *evolving* United States and international standards") (emphasis added).

[130] CPSS/IOSCO PRINCIPLES, *supra* note 77.

required by Dodd-Frank and encouraged by Basel capital regulations, this lengthy list of principles informs United States regulation of CCPs.[131]

Drawing the appropriate balance between safety and access is a key theme of the CPSS/IOSCO standards. Included in the standards are twenty-four principles for establishing and running financial market infrastructures.[132] Covered matters include governance, credit and liquidity risk management, access, transparency, and default management. Table 2 sets forth the relevant principles[133] and some key applications to CCPs.

Table 2: CPSS/IOSCO Principles for Financial Market Infrastructures[134]

#	Principle	Key applications to CCPs
1	Legal Basis	A CCP should have a clear legal basis (in all relevant jurisdictions) for CCP actions, such as novation and netting, which provides essential certainty to market participants.
2	Governance	An effective governance arrangement, which balances the interests of a CCP's owners, board of directors, managers, clearing members, regulators, and "other stakeholders,"[135] allows a CCP to set appropriate goals, assess its performance, and manage risk. Boards bear responsibility for model validation and should include a risk committee, "composed mainly of, and, if possible, led by non-executive or independent directors."[136]
3	Risk management framework	A CCP should establish and test a risk management framework. A CCP should incentivize sound risk management by clearing members. A CCP should review its credit, liquidity, and operational risks and risks it poses to others. A CCP should assess the scenarios that will prevent it from operating normally and develop recovery or wind-down plans.
4	Credit risk management	A CCP should constantly assess and manage (using margin, prefunded guaranty fund contributions, and perhaps credit exposure limits) its current and future credit exposures to members. A CCP should have the ability to make intraday margin calls. A systemically important CCP should "maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include . . . the default of the two participants and their

[131] Dodd-Frank Act § 805(a)(1) (codified at 12 U.S.C. § 5464(a)(1) (2012)); s*ee also* Enhanced Risk Management Standards for Systemically Important Derivatives Clearing Organizations, 78 Fed. Reg. 49663 (Aug. 15, 2013) (to be codified at 17 C.F.R. pt. 39) (noting pressure to adopt international standards to enable CCP users to obtain favorable treatment under the Basel capital rules).

[132] CPSS/IOSCO PRINCIPLES, *supra* note 77, at 14, Table 1.

[133] Principles 11 and 24, which are not applicable to CCPs, are omitted

[134] Author's summary of CPSS-IOSCO Principles as they apply to CCPs.

[135] *Id.* at 26.

[136] *Id.* at 28 n.33.

#	Principle	Key applications to CCPs
		affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions."[137] (So-called "Cover 2"). A CCP should conduct daily multi-scenario stress tests, monthly assessments of the robustness of its stress tests, annual validations of its risk management models, and reverse stress tests to identify implausibly extreme market conditions. A CCP should develop rules for allocating losses and disclose its default waterfall.
5	Collateral management	A CCP should collect highly liquid collateral with low credit and market risks. A CCP should have an effective system for managing margin calls, disputes, reporting, deposits, withdrawals, substitutions, and liquidations. A CCP should think about what will happen to collateral if the member posting it defaults and during periods of market stress. A CCP should apply conservative, stable haircuts and be mindful of the potential for pro-cyclical haircuts to aggravate systemic risk. A CCP should consider the unique risks associated with cross-border collateral. A CCP should impose collateral concentration limits.
6	Margin	A CCP should establish, routinely assess, and backtest a margin system to protect itself from counterparty credit risks. A CCP's margin should reflect the risks of the relevant products and markets. "OTC derivatives require more-conservative margin models because of their complexity and the greater uncertainty of the reliability of price quotes."[138] A CCP should use reliable pricing data and appropriate historical sample periods. A CCP should collect initial margin that "meet[s] an established single-tailed confidence level of at least 99 percent of the estimated distribution of future exposure."[139] A CCP should collect variation margin at least daily, be equipped to collect intraday, and enforce timely payment. In setting margin, a CCP should consider close-out/hedging liquidity, cross-product correlations, jump-to-default risk, and tendency for margin to be procyclical. When netting across products, a CCP should assess correlations among the products and the stability of those correlations during times of market stress. A CCP that cross-margins with other CCPs should coordinate closely and continuously monitor the arrangements.

[137] *Id.* at 36.

[138] *Id.* at 51.

[139] *Id.* at 50.

#	Principle	Key applications to CCPs
7	Liquidity risk	"A [systemically important] CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of . . . the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions."[140] In assessing the sufficiency of its resources, a CCP should count "cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps . . . and repos, . . . , highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions," and routinely available central bank lending if the CCP has the necessary collateral. A CCP should have clear procedures for tapping its liquidity in ordinary circumstances and emergencies, replenishing depleted liquidity, and allocating liquidity shortfalls among its members. A CCP should assess its liquidity needs daily, and rigorously stress test its ability to meet liquidity demands, reverse stress test for extreme but implausible scenarios, and assess the reliability of its liquidity providers.
8	Settlement	A CCP should settle transactions at or before the end of the value date. A CCP's rules should provide clear rules about when a settlement is final.
9	Money settlements	A CCP should settle in central bank money, when possible, and otherwise in assets with low credit and liquidity risk and should monitor its settlement banks. A CCP should (if possible) use multiple commercial settlement banks.
10	Physical deliveries	A CCP should have clear rules with respect to physical deliveries and should identify, monitor, and manage the risks of physical instruments or commodities.
12	Exchange-of-value settlement systems	A CCP should ensure that, with respect to linked settlements, it conditions settlement of each linked obligation on the settlement of the other.
13	Participant default rules and procedures	A CCP should have clear rules and procedures and appropriate tools for identifying, managing, and containing the consequences of member defaults. These procedures should cover prompt close-out of the defaulter's positions, hedging, auctions, and seconding of member personnel to help manage defaults. Key aspects of the default rules should be public.

[140] *Id.* at 57.

#	Principle	Key applications to CCPs
		A CCP, working with its members, should test default procedures at least annually. A CCP should consider requiring members to participate in auctions and, if necessary, take a share of the defaulter's portfolio. A CCP should clearly set forth the order in which resources will be used to absorb default losses and the obligations of non-defaulting members.
14	Segregation and portability	A CCP should be able to identify, protect, and (in the event of default) move the positions and collateral of its members' customers. A CCP should segregate customer collateral from member collateral and may segregate customer collateral from other customer collateral. A CCP should strive for certainty under applicable legal frameworks. A CCP should disclose its segregation and portability arrangements, including whether customer accounts are protected on an individual or omnibus basis.
15	General business risk	A CCP should identify, monitor, and manage its general business risks. A CCP should have sufficient, high quality, equity-funded liquid assets to cover at least 6 months of operations and a board-approved plan for replenishing equity. When contemplating expansion, a CCP should carefully assess the risks.
16	Custody and investment risks	A CCP should hold its and its members' assets at sound, well-regulated, well-vetted custodians that have proper legal protections in place and should consider using different custodians to hold margin and guaranty fund assets. A CCP should employ a conservative investment strategy.
17	Operational risk	A CCP should identify, assess, and manage its operational risks (external events, information technology issues, etc.) and should ensure its operational capacity can accommodate increased volumes during a period of stress. A CCP should have a business continuity plan, including a back-up site, so it can resume halted operations within 2 hours of a disruption and settle by day's end. A CCP should employ the necessary personnel, set operational reliability objectives, and test its risk management framework. A CCP should assess its vulnerability to problems at members, service providers, and other market infrastructures and perhaps require them to meet minimum operational standards and should closely oversee critical service providers.
18	Access and participation requirements	A CCP' should permit "fair and open access" pursuant to reasonable, objective, published, risk-based criteria.[141] A CCP should strive for "the least restrictive impact on access" possible.[142]

[141] *Id.* at 101.

[142] *Id.*

#	Principle	Key applications to CCPs
		A CCP may impose operational, risk management, financial, and legal requirements on members, but should avoid sized-based requirements. A CCP can tailor participation limits to a member's risk. A CCP should monitor its members.
19	Tiered participation arrangements	A CCP should consider unique risks arising from market participants clearing through a clearing member, should require members to provide information about and manage risks of indirect participants, and should pay particular attention to high-volume indirect participants and interdependencies between members and indirect participants. A CCP may want to urge a high-volume indirect participant to become a member. A CCP should understand how its members handle indirect participant defaults.
20	Financial Market Infrastructure Links	A CCP should identify, monitor, and manage the credit, liquidity, legal, operational, and financial risks of linking with other financial market infrastructures. Risk management for CCP-to-CCP links should be tailored depending on whether it is a peer-to-peer or participant link, should consider "potential spill-over effects from the default of the linked CCP,"[143] should include daily should mark-to-market, should consider risks associated with end-of-the-waterfall loss allocations, and should consider risks associated with providing margin to or participating in the default fund of the other CCP.
21	Efficiency and effectiveness	A CCP should set objectives for meeting members' needs efficiently and effectively, should test whether it is meeting those objectives, and should consider direct and indirect costs (including the opportunity cost of member assets).
22	Commun-ication	A CCP should communicate with its members using "internationally accepted communication procedures and standards."[144]
23	Disclosure of rules, key procedures & market data	A CCP should clearly and publicly disclose changes in rules and procedures and relevant information, such as its system design, operations, risk management framework, financial condition, procedures, rules, membership risks, fees and other participation costs, and transaction data.

This list provides useful insight into the complexity of CCP management and the tensions between open access and risk management. Proper CCP management requires careful consideration and balancing of an array of risk management questions and important operational and legal issues. These standards reflect the reality that "[a financial market infrastructure] and its participants may generate significant negative externalities for the entire financial system and real economy if

143 *Id.* at 109.

144 *Id.* at 119.

they do not adequately manage their risks."[145] The CPSS/IOSCO report notes that with respect to CCPs, clearing mandates have underscored the importance of both access to CCPs[146] and "the objectives of safety and efficiency are even more pertinent because national authorities have required or proposed the mandatory use of centralised clearing" in markets, including the OTC derivatives markets.[147] Ironically, while the current regulatory framework is nominally incorporating these risk management principles, it also undermines CCPs' ability to adhere to them.

II. PROBLEMS WITH THE CURRENT REGULATORY FRAMEWORK

The central clearing mandate and the regulatory infrastructure that has risen up around it, although well-intentioned, threaten financial stability. Academic observers, especially including Professor Craig Pirrong, have raised concerns about CCPs' potential deleterious effects on financial stability.[148] While citing the risk-reducing aspects of CCPs, recent annual reports of the Office of Financial Research and Financial Stability Oversight Council also identified CCPs as a potential source of systemic risk.[149]

Carefully designed and operated central clearinghouses can facilitate risk management by firms and contribute to broader financial stability. Design, however, matters greatly.[150] Regulatory micro-interference in clearing, which can upset careful designs, is harmful to individual firm risk management and to financial stability. Together, the clearing mandate, the regulatory influences on the design and operation of CCPs, and the implicit government backstop threaten to destabilize CCPs, individual firms' risk management, and the broader financial system.

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[145] *Id.* 11.

[146] *Id.* 15.

[147] *Id.* at 11.

[148] *See, e.g.*, Craig Pirrong, *A Bill of Goods: Central Counterparties and Systemic Risk*, 2 J. FIN. MKT. INFRASTRUCTURES 55 (2014) [hereinafter Pirrong, *Bill of Goods*]; Craig Pirrong, *The Clearinghouse Cure*, REG., Winter 2008-2009, at 44; s*ee also* Levitin, *supra* note 64, at 453; Mark J. Roe, *Clearinghouse Overconfidence*, 101 CALIF. L. REV. 1641 (2013); Serge Wibaut & D. Sykes Wilford, *Markets for CCPs and Regulation: Considering Unintended Consequences*, 34 INST. J. FIN. TRANSACTIONS 105 (2012).

[149] FIN. STABILITY OVERSIGHT COUNCIL, 2015 ANNUAL REPORT 111 (2015), https://www.treasury.gov/initiatives/fsoc/studies-reports/Documents/2015%20FSOC%20Annual%20Report.pdf (identifying CCPs as a "potential emerging threat and vulnerability"); OFFICE OF FIN. RESEARCH, 2014 ANNUAL REPORT 66 (2015), https://financialresearch.gov/annual-reports/files/office-of-financial-research-annual-report-2014.pdf (noting that "[b]anks could face significant losses if a CCP experienced losses and transmitted them to clearing members" and highlighting potential liquidity effects of margin requirements).

[150] *See, e.g.*, Hamed Amini et al., *Systemic Risk and Central Counterparty Clearing* 31 (Swiss Fin. Inst. Research, Working Paper No. 13-34, 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2275376 (finding that "a CCP does not always reduce systemic risk," but that they can reduce systemic risk if their fee and guaranty fund policies are properly designed).

A. Potential for Expanded CCPs to Destabilize the Financial System

By nature, CCPs are deeply interconnected with large financial companies and potentially with other CCPs. CCPs have direct relationships with clearing members and settlement banks, which tend to be large firms, and indirect relationships with clearing members' customers, which may also be large firms. The intricacy of these relationships makes it difficult for market participants and regulators to get a good understanding of the risks associated with CCPs.[151] Pirrong has warned that "clearing has turned out to be the Mother of All Interconnections, because every big financial institution is connected to all big CCPs, and because pretty much everyone has to funnel the bulk of their derivatives trades through clearinghouses."[152] Because CCPs are so large, interconnected, and integral to the operation of the financial markets, many market observers have identified them as Dodd-Frank's addition to the too-big-to-fail ranks.[153] Taking it a step further, one expert noted that they ought to be categorized as "V-SIFIs"—very important systemically important financial institutions[154]—to distinguish them from their too-big-to-fail brethren—the systemically important financial institutions that are designated for special Federal Reserve oversight in Title I of Dodd-Frank.

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[151] *See, e.g.*, Steigerwald, *supra* note 60, at 23 ("CCPs provide enhanced transparency for cleared financial contracts. Such transparency is beneficial, but it comes packaged in an institutional form that also contains undeniable, and perhaps, irreducible opacity.").

[152] *See* Craig Pirrong, *The Fifth Year of the Frankendodd Life Sentence*, STREETWISEPROFESSOR.COM (July 21, 2015), http://streetwiseprofessor.com/?p=9472; *see also* Colleen M. Baker, *The Federal Reserve's Supporting Role Behind Dodd-Frank's Clearinghouse Reforms*, 3 HARV. BUS. L. REV. ONLINE 177, 186 (2013) ("[W]ell-intentioned reforms of OTC derivatives markets could ultimately create an impossibly interconnected, concentrated, international web of clearinghouses, central banks, and swap lines resulting in a solution potentially worse than the original problem.").

[153] *See, e.g.*, Julia Lees Allen, Note, *Derivatives Clearinghouses and Systemic Risk: A Bankruptcy and Dodd-Frank Analysis*, 64 STAN. L. REV. 1079, 1100 (2012) ("[T]he mandatory clearing provisions . . . in reality force the creation of a new wave of too-big-to-fail financial institutions: derivatives clearinghouses."); Frances Coppola, *It's Not Just Banks That Are Too Big to Fail*, FORBES (Apr. 30, 2014), http://www.forbes.com/sites/francescoppola/2014/04/30/its-not-just-banks-that-are-too-big-to-fail/ ("CCPs are unquestionably too big to fail. In seeking to end "too big to fail" in OTC derivatives trading, we may actually have made the problem worse."); McPartland, *supra* note 67, at 3 ("Bringing even more derivatives instruments into clearing and settlement systems will concentrate market and operational risk even more than today, making it all the more important that CCPs function flawlessly."); Hester Plumridge, *What If a Clearing House Failed?*, WALL ST. J. (Dec. 2, 2011), http://www.wsj.com/articles/SB10001424052970204397704577074023939710652 ("Clearing houses may be the next too-big-to-fail institutions . . . . [T]hey are about to take on a lot more risk, and there is no plan in place to deal with a big player failing. That should set alarm bells ringing."); James Rundle, *Helping Clearing Houses Avoid a Crash*, FIN. NEWS (May 20, 2015), http://www.efinancialnews.com/story/2015-05-20/helping-rescuers-avoid-turbulence-clearing-houses ("Having been given such a level of systemic importance by world leaders, the scenario that some clearers may, in fact, become too big to fail, ironically a state of play that the regulators have been trying to stamp out among clearing members, is very real.").

[154] Manmohan Singh, *Making OTC Derivatives Safe—A Fresh Look* 18 (Int'l Monetary Fund, Working Paper No. 11/66, 2011), https://www.imf.org/external/pubs/ft/wp/2011/wp1166.pdf.

To attract users, CCPs have an incentive to be large and to clear multiple product types. Seeking to maximize their ability to net positions and economize on initial margin and guaranty fund contributions, users favor a CCP that enables them to net across many counterparties and multiple products. CCPs face strong pressure to clear multiple products or link with other CCPs because the alternative to central clearing—bilateral netting—occurs across asset classes. Professors Darrell Duffie and Haoxiang Zhu show that"[r]elative to the case of fully bilateral netting (no clearing), substantial [counterparty risk reduction] benefits can be obtained by the joint clearing of the four major classes of derivatives" and call for "the joint clearing of standard interest-rate swaps and credit default swaps in the same clearinghouse."[155] Risk management, already complex for CCPs clearing OTC derivatives, is even more difficult in large, multi-product CCPs.

An alternative to clearing products in the same CCP is linking CCPs. International Monetary Fund economist Manmohan Singh explains that the "ideal 'first-best' solution" would be a "single CCP with an adequate multicurrency central bank liquidity backstop that is regulated and supervised and spans the broadest range of derivatives."[156] He explains that interoperability—a process by which CCPs link together for the convenience of their clearing members—is "a proxy for [this] 'first-best' solution."[157] Regulators, recognizing these netting efficiencies and drawn to the ease of overseeing a few large CCPs rather than many smaller ones, may also favor large, interlinked CCPs.[158] To date, however, calls for interoperability of derivatives CCPs have mostly not materialized, in part because of the thorny risk management issues such linkages produce.[159]

CCPs function by making and receiving payments according to a strict timeline. For example, after marking positions to market, the CCP collects variation margin from the accounts of losing parties and credits it to the accounts of winning parties. Adherence to a strict timeline of payments is important to keep the system working. During a crisis, CCPs likely would face significant liquidity strains.[160] Professor

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[155] Darrell Duffie & Haoxiang Zhu, *Does a Central Clearing Counterparty Reduce Counterparty Risk?*, 1 REV. ASSET PRICING STUD. 74, 76, 83 (2011).

[156] Singh, *supra* note 154, at 5; s*ee also* INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY, *supra* note 70, at 93 ("A single global CCP for OTC derivatives would provide maximum economies of scale and systemic counterparty risk reduction, but similar efficiencies can be achieved by linking multiple CCPs . . . .").

[157] Singh, *supra* note 154, at 7.

[158] Regulatory territorialism may act as a brake on CCP size and interoperability. The CFTC and its European counterparts, for example, have been struggling over whether U.S. CCPs will be recognized in Europe. *See, e.g.*, Joint Statement of CFTC Chairman Timothy Massad and European Commissioner Jonathan Hill (May 7, 2015), http://www.cftc.gov/PressRoom/SpeechesTestimony/massadstatement050715 (providing progress update on "discussions on a possible equivalence decision by the European Commission for central counter parties (CCPs) that are regulated and supervised by the CFTC").

[159] For a concise discussion of the costs and benefits of interoperability, see GREGORY, *supra* note 59, at § 8.5.1.

[160] *See, e.g.*, Paul Tucker, *Central Counterparties in Evolving Capital Markets: Safety, Recovery and Resolution*, 17 BANQUE DE FRANCE FIN. STABILITY REV. 179, 183 (2013) (highlighting likely liquidity needs of a CCP managing a default); Transcript of CFTC Market Risk Advisory Committee Meeting, *supra* note 89, at 83 (statement of Susan McLaughlin,

Mark Roe points out "the collateral available to one creditor, namely the clearinghouse, is value denied to other creditors."[161] If those other creditors are also systemic, the CCP may not serve to reduce systemic risk.[162] Knott and Mills note that a CCP could destabilize the financial system by making protective margin calls that cause members "to sell assets in a second market, driving down prices there."[163] They further explain that if margin payments are delayed, "the CCP may redistribute part of its risk to liquidity providers such as banks."[164] A CCP without adequate liquidity to pay its counterparties would cause those counterparties in turn to miss payments.[165] Pirrong explains numerous ways in which the clearing mandate contributes to systemic risk, including (as Roe also argues) by shifting risk from derivatives counterparties to other creditors of failed firms, increasing borrowing to meet margin requirements, creating large demands for liquid assets during times of great stress, and imposing losses on firms through the default fund at times when those firms can least bear them.[166]

Fed. Reserve Bank of N.Y.) ("[I]f a CCP were for some reason unable to perform on the defaulting member's payment obligations in a timely manner and in the expected currency, its surviving members would face liquidity shortfalls that would quickly trigger a cascade of failures on their obligations to their counterparties beyond the CCP, transmitting liquidity risk more broadly to a wider set of market participants.").

161 Roe, *supra* note 148, at 1664.

162 *Id.* at 1671-72. *But see* Squire, *supra* note 54, at 891 (arguing that CCPs are stability enhancing because they ensure that some creditors get paid quickly without slowing down payments to other creditors).

163 Knott & Mills, *supra* note 57, at 164; *see also* Dietrich Domanski et al., *Central Clearing; Trends and Current Issues*, BIS Q. REV., Dec. 2015, at 72, http://www.bis.org/publ/qtrpdf/r_qt1512g.pdf ("[E]xtreme price movements in cleared financial instruments could result in large variations in the exposure of clearing members to the CCPs and therefore in the need for some of them to make correspondingly large variation margin payments. Such payments can be large, even if margin requirements remain unchanged. But they may be exacerbated if the CCP increases initial margins and/or tightens collateral standards in the face of unusually large price movements. The interaction of such sudden and large shifts in collateral flows with the wider financial system is untested . . . . The demands and dispositions of CCPs could lead to big shifts in collateralised markets, adding to risk aversion and increasing pressure to reduce leverage in a procyclical manner.").

164 Knott & Mills, *supra* note 57, at 164.

165 *See, e.g.*, Patrick M. Parkinson, Speech to Federal Reserve Bank of Chicago Annual Over the Counter Derivatives Symposium: CCP Liquidity Risk Management and Related Failure Management Issues (Apr. 11, 2014) (noting that "central concern with respect to CCP liquidity risk is that a failure of one or more clearing members to meet variation margin calls on time could cause the CCP itself to be unable to meet its own payment obligations as and when expected" and that "[s]uch a failure could jeopardize the ability of its nondefaulting clearing members to meet their payment obligations when expected and thus is a potential vector for financial contagion").

166 Pirrong, *Bill of Goods*, *supra* note 148, at 62-74; *see also* Daniel K. Tarullo, Speech at the Office of Financial Research and Financial Stability Oversight Council's 4th Annual Conference on Evaluating Macroprudential Tools: Complementarities and Conflicts: Advancing Macroprudential Policy Objectives (Jan. 30, 2015), http://www.federalreserve.gov/newsevents/speech/tarullo20150130a.htm (raising concerns about, among other things, CCPs imposing losses on large firms during times of crises).

Further complicating matters, clearing members are likely to be large financial institutions that play multiple roles and have multiple relationships with each CCP. Clearing members may themselves be or may be affiliated with settlement banks or the providers of lines of credit on which CCPs rely.[167] Prearranged lines of credit might not materialize during a crisis, particularly if the lending bank is a clearing member.[168] Federal Reserve Governor Powell points out that "[t]he failure of a large clearing member that is also a key service provider could disrupt the smooth and efficient operation of one or multiple CCPs, and vice versa."[169] The CCP has to consider the full scope of its relationship with clearing members when, for example, it considers the effects of a member default or a margin call or assessment on surviving members.[170]

The 1987 stock market crash illustrated how closely CCPs are tied to the banking system, how important payment timing is, and how CCPs can adversely affect the financial system during a crisis.[171] Former Federal Reserve Chairman Ben Bernanke, who studied the issue, concluded that the "the system taken as a whole (i.e., including the Fed) performed acceptably during the crash."[172] However, the clearing

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[167] Froukelien Wendt, *Central Counterparties: Addressing Their Too Important to Fail Nature* 9 (Int'l Monetary Fund, Working Paper No. 15/21, 2015), https://www.imf.org/external/pubs/ft/wp/2015/wp1521.pdf ("Global systemically important banks (G-SIBs) and other commercial banks may fulfill roles of general clearing member (clearing for clients), liquidity provider, depository bank, custodian and settlement bank.").

[168] *See, e.g.*, Parkinson, *supra* note 165; Steigerwald, *supra* note 60, at 21-22.

[169] Jerome H. Powell, Governor, Fed. Reserve Bd. of Governors, Speech at the 17th International Banking Conference: A Financial System Perspective on Central Clearing of Derivatives 4 (Nov. 6, 2014), http://www.federalreserve.gov/newsevents/speech/powell20141106a.htm ("To carry out their critical functions, CCPs rely on a wide variety of financial services from other financial firms, such as custody, clearing, and settlement. Many of these services are provided by the same global financial institutions that are also the largest clearing members of the CCPs."); *see also* Domanski et al., *supra* note 163, at 59, 68 ("The CCP's own liquid assets and backup liquidity lines made available by banks may provide effective insurance against liquidity shocks resulting from the difficulties of one or a few clearing members. But they can hardly provide protection in the event of a systemic shock, when a large number of clearing participants – potentially including the providers of liquidity lines – become liquidity-constrained, thereby triggering domino effects.").

[170] *See, e.g.*, Wendt, *supra* note 167, at 9 ("[A CCP is a] particularly vulnerable to the default of a service-providing clearing member . . . not only because it has to cover the default of the clearing member, but because it may also lose access to the collateral kept by that clearing member in its role as custodian[,] . . . may lose access to the credit lines that were provided by the defaulting clearing member and it may face operational problems due to the loss of one of its settlement banks.").

[171] *See generally* DEP'T TREASURY, REPORT OF THE PRESIDENTIAL TASK FORCE ON MARKET MECHANISM (1988), https://archive.org/details/reportofpresiden01unit (known as the Brady Commission Report, describing the events of the 1987 crash); s*ee also* McPartland, *supra* note 67, at 3 ("[A] CCP can only remove market risk from its clearing system when the national banking system is open."). McPartland goes on to explain that "late settlement payments associated with derivatives markets were one of the root causes of near payments gridlock during the 1987 market crash." *Id.* at 3.

[172] Ben S. Bernanke, *Clearing and Settlement During the Crash*, 3 REV. FIN. STUD. 133, 134 (1990).

and settlement system suffered from "malfunctions of communications and information processing systems" and "financial gridlock as banks and other creditors became cautious about transferring funds to individuals or institutions whose solvency might be in doubt."[173] These fears seemed to have helped to drive prices down.[174] Bernanke further notes that clearinghouses' sensible margin calls "were widely criticized in postmortems for 'draining liquidity from the system.'"[175] Federal Reserve intervention kept the system functioning through the 1987 crisis.[176]

Since 1987, systems have improved, but real concerns remain about how well a CCP could continue to function in the face of even one member default, if the financial system were also facing other stresses. Would "sensible margin calls" once again threaten the financial system? Because of new post-crisis rules, liquid assets will be at even more of a premium than they were during the last crisis.[177]

Default management might also be difficult in the Dodd-Frank world of stricter capital standards and mandatory clearing. Strict capital requirements may prevent non-defaulting clearing members from taking on the defaulter's client's portfolios.[178] Particularly if the defaulter's portfolio contains unusual products, the CCP may not be able to borrow the needed trading personnel from non-defaulting members, who may not be able to part with their expertise during a crisis.[179] Multiple CCPs may be competing for the same liquid assets, personnel, capacity of clearing members to take on additional positions from defaulters' portfolios, and perhaps even capacity of clearing members to replenish guaranty funds or meet unfunded assessments.

Professor Mark Roe notes that CCPs are not well-suited to handle crises like the last one in which multiple firms ran into trouble simultaneously. Not only would CCPs potentially be vulnerable,[180] but they could make matters worse by transmitting problems to a broader set of firms.[181] If one CCP were affected, others would likely also be affected.[182] As the following table illustrates, CCPs share many members, which eases risk transmission from one CCP to another.

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[173] *Id.* at 146-47. The IMF points to the role that operational weaknesses played during the 1987 crash in the near failures of the CME and the OCC. IMF, GLOBAL FINANCIAL STABILITY REPORT, *supra* note 30, at 108-109.

[174] Bernanke, *supra* note 172, at 148.

[175] *Id.* at 147.

[176] *Id.* at 149 ("[T]he Federal Reserve, in its lender-of-last-resort capacity . . . induce[d] the banks (by suasion and by the supply of liquidity) to make loans on customary terms, despite chaotic conditions and the possibility of severe adverse selection of borrowers.").

[177] *See, e.g.*, Liquidity Coverage Ratio: Liquidity Risk Measurement Standards, 79 Fed. Reg. 61440 (Oct. 10, 2014) (to be codified at 12 C.F.R. pts. 50, 249 & 329).

[178] Transcript of CFTC Market Risk Advisory Committee Meeting, *supra* note 89, at 95 (statement of Emily Portney, JPMorgan).

[179] *See, e.g.*, *id.* at 89 (statement of Scott Flood, Citi's Inst. Client Grp.)

[180] Roe, *supra* note 148, at 1675. For a helpful illustration of how problems at a CCP could spread, see Wendt, *supra* note 167.

[181] Roe, *supra* note 148, at 1675.

[182] *See* Domanski et al., *supra* note 163, at 68-69 ("In the extreme case, the default of common clearing members could threaten the resilience of several CCPs at the same time

Table 3: Overlapping CCP Members[183]

Members	CME IRS	CME CDS	ICE Clear Credit	LCH Clearnet LLC OTC CDS
Bank of America, N.A.			●	
Bank of Montreal		●		
Barclays Bank PLC			●	
Barclays Capital Inc.	●	●	●	●
BNP Paribas Securities Corp.	●	●	●	●
Citibank N.A.			●	●
Citigroup Global Markets Inc.	●	●	●	●
Credit Agricole Corporate and Investment Bank		●		
Credit Suisse International	●	●	●	
Credit Suisse Securities (USA) LLC	●	●	●	●
Deutsche Bank AG, London Branch			●	
Deutsche Bank Securities Inc.	●	●	●	●
Goldman Sachs Bank USA				●
Goldman Sachs International			●	
Goldman, Sachs & Co.	●	●	●	●
HSBC Bank plc			●	
HSBC Bank USA, N.A.			●	
HSBC Securities (USA) Inc.	●	●	●	
J.P. Morgan Securities LLC	●	●	●	●
JPMorgan Chase Bank, National Association			●	●
Merrill Lynch, Pierce, Fenner & Smith Incorporated	●	●	●	
Merrill Lynch International			●	
Morgan Stanley & Co. LLC	●	●	●	●
Morgan Stanley Capital Services LLC			●	
Nomura International PLC			●	
Nomura Securities International, Inc.		●	●	●
Rabo Securities USA Inc.		●		
RBC Capital Markets LLC		●		

[which], in turn, would impose strains on the surviving clearing members, propagating systemic risk.")

[183] *Clearing Firms*, CME GRP., www.cmegroup.com/tools-information/clearing-firms.html (last visited Apr. 23, 2016); *Ice Clear Credit: Participants*, INTERCONTINENTAL EXCH., http://www.theice.com/clear-credit/participants (last visited Apr. 23, 2016); *Current Membership*, LCH.CLEARNET, www.lchclearnet.com/members-clients/members/current-membership (last visited Apr. 23, 2016).

Members	CME IRS	CME CDS	ICE Clear Credit	LCH Clearnet LLC OTC CDS
Royal Bank of Canada		●		
SG Americas Securities, LLC		●	●	
Société Générale	●		●	
The Bank of Nova Scotia		●	●	
The Royal Bank of Scotland plc		●		
The Toronto-Dominion Bank		●		
UBS AG, London Branch			●	●
UBS Securities LLC	●	●	●	●
Wells Fargo Securities, LLC		●	●	●

If a CCP stopped meeting its obligations altogether, it could greatly impede markets. A CCP that cannot meet its payment obligations could stop the markets for which it clears from functioning.[184] Because CCPs tend to dominate particular markets, there might not be a substitute CCP, so the market for any OTC derivatives cleared at the failing CCP and subject to the clearing mandate would lock up. The statutory framework does not explicitly allow for emergency termination or suspension of the clearing mandate,[185] which could help to alleviate the problem. The status of contracts at a failing CCP would also be uncertain and perhaps that status would not be resolved for a long time.[186]

B. Potential for Clearing Mandate to Undermine Risk Management Outside the CCP

Although characterized as a risk management measure, the clearing mandate may impede market participants' ability to measure and manage their risks. The clearing mandate affects how firms manage their business risks and exposures to CCPs and other firms.

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[184] *See, e.g.*, Parkinson, *supra* note 165 ("If confidence in a CCP is shattered and, as is often the case, no other CCP serves the market, the market would cease functioning.").

[185] FIA Europe raised a different permutation of this issue—a CCP would have to continue clearing a product subject to a clearing mandate and taking on the associated risk during a crisis. FIA EUR., A REVIEW OF THE CUMULATIVE IMPACT OF EUROPEAN DERIVATIVES LAW REFORM 12 (2015), https://europe.fia.org/sites/default/files/content_attachments/FIA%20Europe_%20A%20review%20of%20the%20cumulative%20effect%20of%20European%20derivatives%20reform_Position%20Paper.pdf ("[T]he clearing obligation cannot be terminated or suspended as a matter of urgency in extreme circumstances. This means that CCPs may find themselves clearing more risk in a contract or product than there would be market capacity to manage upon a member default. A CCP may therefore have no option but to encourage participants to reduce these clearing provisions by increasing margin requirements to levels at which it is uneconomic to hold the positions and thus force the risk to be closed out.").

[186] *See, e.g.*, David Elliott, *Central Counterparty Loss-Allocation Rules* 6 (Bank of England, Fin. Stability, Paper No. 20, 2013), http://www.bankofengland.co.uk/financialstability/Documents/fpc/fspapers/fs_paper20.pdf (discussing how "[t]he failure of a CCP could be very disruptive").

A frequently cited risk management concern relates to the effect that clearing will have on bilateral netting. Dealers in the OTC markets use netting to manage their exposures to other counterparties, but mandatory clearing affects their ability to do this.[187] Singh has explained that mandatory clearing can interfere with bilateral netting as some contracts are moved to CCPs and others remain bilateral contracts.[188] Bilateral netting opportunities with a particular counterparty decrease if some of the transactions with that counterparty are moved to a CCP.

The clearing mandate and associated disincentives on using uncleared swaps—such as higher margin requirements for uncleared swaps, capital charges, and anti-evasion provisions—may discourage firms from dealing in and using uncleared swaps. The emphasis on clearing has overshadowed the value of these bilateral agreements, which enable companies to manage their risks with a greater precision than they could with standardized products. Firms may forgo derivatives-based hedging altogether or may use a less tailored cleared product to hedge their risk.[189] If companies do so, there will be unhedged business risk. Alternatively, Columbia University scholar Ilya Beylin argues that market participants seeking to avoid the clearing mandate could resort to more complicated, less transparent, and therefore more risky transactions.[190] Not only do bilateral derivatives offer firms the chance to manage their risks precisely, but they are also often part of a larger customer relationship between a company and a dealer bank. That relationship may include unique collateral arrangements, such as arrangements that allow a firm to post illiquid assets or not to post collateral below a specified threshold. Forcing derivatives transactions into CCPs, which cannot replicate these accommodations, will disrupt these bilateral relationships.

New risk management challenges also arise in connection with the heavier collateral demands associated with central clearing. Both clearing members and their customers will have to post collateral in the liquid form demanded by CCPs.[191] Customers may enter into new relationships to borrow collateral. As Jon Gregory points out, CCPs demand variation margin from losing counterparties more frequently than they post it to gaining counterparties.[192] If banks meet the demand by

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[187] For a discussion of this topic, see Paul M. McBride, *The Dodd-Frank Act and OTC Derivatives: The Impact of Mandatory Central Clearing on the Global OTC Derivatives Market*, 44 INT'L LAW. 1077, 1106-08 (2010).

[188] Singh, *supra* note 154, at 4 ("Offloading only standard contracts will adversely impact the net exposure on their books as this will 'unbundle' netted positions.").

[189] For an excellent discussion of the potential for lost hedging opportunities and increased costs for swaps end users as a result of the central clearing mandate, see McBride, *supra* note 187, at 1111-19. Market observers have noted that futures products are emerging to take the place of certain types of swaps. *See, e.g.*, COMMODITY FUTURES TRADING COMM'N, PUBLIC ROUNDTABLE ON FUTURIZATION OF SWAPS (2013), www.cftc.gov/ucm/groups/public/@swaps/documents/dfsubmission/dfsubmission13_013113-trans.pdf.

[190] Beylin, *supra* note 5, at 15, 48.

[191] For a discussion of the association between central clearing and high collateral demands, see Singh, *supra* note 154, at 5.

[192] GREGORY, *supra* note 59, at 151 ("CCPs may make one or more intradaily margin calls per day and typically only return margin once a day. Such effects would be most pronounced during volatile markets where large price moves may cause CCPs to ask for very large

lending liquid assets to their customers to post as collateral, "the tail risk may not leave their books," as central clearing proponents hoped it would.[193] The magnitude of that risk may be difficult to estimate. A more technical concern, raised by Professor Ronald Anderson and Karin Jõeveer, is the likely operational strains on clearing members of frequent margin calls by CCPs.[194]

Greater use of CCPs raises new concerns about exposure to clearinghouse risk. Clearing members and—to a lesser degree—their customers have to estimate and manage the risks they face because of their interactions with CCPs. As Table 1 shows, CCPs employ a default waterfall that maps out loss allocations in the event of a member default, but what happens at the end of the waterfall may not be clear. Also unclear is whether and how any of the losses CCP clearing members bear will be shared with their customers.[195] These uncertainties make modeling CCP risk difficult. A JPMorgan research paper found that "for realistic assumptions, the systemic CCP risk a clearing member is exposed to is not negligible" and "is given by a sum of exposures to each of the clearing members."[196] To enable more precise modeling of their exposure to CCPs, clearing members are pushing for greater ex ante clarity about what will happen if a CCP runs into trouble.[197] To manage their risk, members need to understand whether tail losses will be absorbed by CCP

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intraday margins from some participants covering their losses, whilst possibly not returning immediately the equivalent margin against gains of other clearing members.").

[193] Singh, *supra* note 154, at 9.

[194] Ronald W. Anderson & Karin Jõeveer, *The Economics of Collateral* 35 (Fin. Mkt Group, Discussion Paper No. 732, 2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2427231 ("[M]oving toward central clearing with product specialized CCPs can greatly increase the numbers of margin movements which will place greater demands on a participant's operational capacity and liquidity.").

[195] For a discussion of this issue, see Elliot, *supra* note 186, at 10.

[196] Matthias Arnsdorf, *Central Counterparty Risk*, 5 J. RISK MGMT. FIN. INSTITUTIONS 273, 286 (2012); *see also* Joe Renison, *Risk USA: Few Options to Manage CCP Exposure, Says RBS Chief Credit Officer*, RISK MAG. (Oct. 23, 2013) (reporting that concerns by the Royal Bank of Scotland's chief credit officer, Lesley Jones, that managing risks through a CCP, rather than bilaterally, exposes clearing members to more severe losses); Transcript of CFTC Market Risk Advisory Committee Meeting, *supra* note 89, at 72 (statement of Kristen Walters, BlackRock) (raising questions about "the actual estimate of potential loss to our clients in the instance of default").

[197] *See, e.g.*, Rundle, *supra* note 153 ("Not surprisingly, clearing members are wanting more transparency on how clearing houses will operate in a crisis. Concerns are high that the stress-testing methodologies they use and the extent to which members might be required to prop up a clearer are ill-defined, to the point that it may increase risk in stressed markets."). CCPs are not particularly sympathetic to this concern. *See, e.g.*, Letter from Terrence A. Duffy, Executive Chairman & President, CME Group, Robert Druskin, Executive Chairman, Depository Tr. & Clearing Corp., Scott A. Hill, Chief Financial Officer Int'l Exch., Inc., & Craig S. Donohue, Executive Chairman, Options Clearing Corp. to Jacob L. Lew, Chairman, Fin. Stability Oversight Council (Mar. 9, 2015), https://www.theice.com/publicdocs/CME_DTCC_ICE_OCC_Letter.pdf ("With full transparency into a CCP's financial safeguards and default management practices, clearing members and participants have sufficient information to evaluate the risk profile of the CCP and manage their own exposures.").

capital, clearing member assessments, variation margin gain haircuts, or some other method. Also relevant to these risk assessments is how large a slice of default losses CCPs will bear and at what point in the waterfall.[198] As will be discussed in the next section, however, if clearing members do not bear a sufficient portion of the tail risk, they will not adequately monitor their counterparties.

C. Mandated Central Clearing Could Impair Counterparty Monitoring

Clearing mandates may force some risks into CCPs that would be better handled through bilateral transactions. One of the main functions of a CCP is to eliminate the need for a buyer of a derivatives contract to monitor the seller and vice versa. Buyers and sellers planning to clear centrally can be indifferent about the identity of their counterparty.[199] Although they will bear some risk to one another through the guaranty fund and potential for additional assessments or haircuts on non-defaulters, that exposure is diluted. As a consequence, less inter-dealer monitoring will take place than it did prior to the clearing mandate.[200] Loss is mutualized and risk management is centralized at the CCP.

CCPs have certain risk management advantages. They can monitor risk in a more holistic way from their central perch that comes with broad access to information.[201] CCPs have more information about a clearing member's positions than a dealer in a bilateral market would have about another dealer's positions. The CCP may also require clearing members to provide specified information and submit to monitoring.[202] Pirrong has argued, however, that CCPs do not have information of as high quality as the hedge funds and banks that "specialize precisely in understanding risks and pricing . . . especially . . . for more complex and novel derivative instruments."[203] CCPs do not have access to the detailed market-specific knowledge

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[198] *See, e.g.*, BLACKROCK, CENTRAL CLEARING COUNTERPARTIES AND TOO BIG TO FAIL 3 (2014) ("Having more skin in the game will incentivize the CCPs to at all times have robust risk management and would align incentives between the CCP, clearing members and market participants."). *But see* Benoît Cœuré, Lecture, Ensuring an Adequate Loss-Absorbing Capacity of Central Counterparties, Speech at the Federal Reserve Bank of Chicago 2015 Symposium on Central Clearing (Apr. 10, 2015) (arguing that the primary responsibility for loss absorption should remain with clearing members, so they adequately monitor risks); LCH.CLEARNET, *supra* note 81, at 27 ("Skin in the game is not designed as a material component of loss absorption; its purpose is to align incentives of the CCP operator with those of the clearing members. Any requirement for the CCP operator to contribute significant additional resources to the default waterfall would fundamentally change the operator's risk profile, creating increased risk exposure to member default at the very time that the market needs the operator to be resilient.").

[199] *See, e.g.*, McPartland, *supra* note 67, at 2 ("In an electronic trading environment, clearing provides valuable anonymity; buyer and seller (and buying clearing member and selling clearing member) rarely know (or need to know) each other's identity.").

[200] *See, e.g.*, Roe, *supra* note 148, at 1694-95.

[201] *See, e.g.*, Parkinson, *supra* note 165, at 6 ("[P]erhaps the most important reason a CCP can reduce risk is that a CCP has a more complete picture of the aggregate risks posed by participants than do counterparties to uncleared transactions").

[202] *See* Hills et al., *supra* note 62, at 128.

[203] Craig Pirrong, *The Economics of Central Clearing: Theory and Practice* 14 (ISDA, Discussion Papers Series No. 1, 2011) [hereinafter Pirrong, *Economics of Central Clearing*].

possessed by dealers in the OTC markets. Even if they did, their ability to act on it is limited. Central clearing generally eliminates the counterparty-specific pricing that is possible in bilateral transactions.[204] Whereas the amount of initial margin in a bilateral contract would likely depend on the counterparty, in central clearing, initial margin is typically not dependent on the creditworthiness of the counterparty.[205]

Market participants might even employ their market-specific knowledge to strategically take on risks that they know will be offloaded to a CCP. Former British central banker Paul Tucker makes the point that "firms using a CCP have incentives to take more counterparty credit risk in their market transactions than otherwise, discriminating less when choosing with whom to trade because their credit exposure is not to their market counterparty but rather to the clearing house—unless the tail risk is credibly mutualized."[206] Efforts to increase the CCP's "skin-in-the-game" in the event of a member default could exacerbate the problem of clearing members' offloading risk—intentionally or carelessly—to CCPs.[207]

Intra-industry monitoring was likely more intense with the old mutualized, self-regulated model of clearinghouse ownership. Dealers in a particular product became members of the relevant CCP, managed the CCP, and—if a member ran into trouble—cooperatively managed the default and shared any losses. Members, therefore, had a strong interest in ensuring the rigor of the CCP's membership criteria, the efficacy of its other risk management mechanisms, and the efficiency of its default management protocol. The standard current model for swaps CCPs, however, is a for-profit model in which the clearing members, who are not the sole owners and regulators, drive CCPs' risk management decisions.[208] CCPs that are not owned by members, but nevertheless allow members a significant voice in risk

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[204] *See, e.g.*, PIRRONG, INEFFICIENCY, *supra* note 6, at 10; Wibaut & Wilford, *supra* note 148, at 114 (explaining that CCPs tend to "apply one-size-fits-all margin and trading fee policies irrespective of the end user's credit quality").

[205] *See, e.g.*, GREGORY, *supra* note 59, at 155 ("Initial margin depends primarily on the market risk of the centrally cleared trades and only a small component, if any, is linked to the credit quality of the clearing member.").

[206] Paul Tucker, Speech at the Over-the-Counter Derivatives Symposium: Are Clearinghouses the New Central Banks? (2014); *see also* Felix B. Chang, *The Systemic Risk Paradox: Banks and Clearinghouses Under Regulation*, 2014 COLUM. BUS. L. REV. 747, 773 (2014) ("Lulled by a false sense of security and goaded by improvements in hedging from DCOs, players might take on more derivatives at greater notional values. Counterparties might monitor each other less, trusting that DCOs are doing so—whereas counterparties trading bilaterally likely understand each other better than a DCO would.").

[207] *See, e.g.*, Cœuré, *supra* note 198 ("In fact, a substantial increase of 'skin in the game' could provide clearing members with a false sense of security, by reducing their potential contribution to the loss-allocation process. This could lead them to be less vigilant in monitoring risks, which may have severe consequences for the safety of CCPs . . . . [I]t seems reasonable that an increase in prefunded resources, should it become necessary, should be mainly borne by clearing members.").

[208] CME demutualized in 2000 and is a publicly held company that owns CCPs. CME Group Inc., Annual Report, (Form 10-K), at 5 (2014), http://investor.cmegroup.com/investor-relations/secfiling.cfm?filingID=1156375-14-12. Intercontinental Exchange, a publicly held company, owns ICE Clear Credit, which clears CDS. *Id.* LCH.Clearnet, a public company, owns CCPs, including LCH.Clearnet LLC, which clears OTC swaps. *Id.* at 2.

management, can properly align incentives, but the clearing mandate and related intense regulatory involvement in shaping risk management standards may make effective arrangements of this sort more difficult.

For-profit CCPs can compete on the provision of effective and efficient risk management,[209] which protects the clearing members from bearing losses should another member default, yet does not tie up unduly large amounts of capital. Credit rating agency Moody's recently issued a proposed methodology for rating CCPs along these lines.[210] More generally, the CPSS-IOSCO principles are intended to facilitate cross-CCP comparisons.[211] Greater transparency by CCPs helps both direct and indirect clearing members to assess CCPs.[212] The clearing mandate, however, makes it hard for a large financial firm to eschew doing business with a poorly managed CCP that clears a product subject to the mandate. In fact, firms may not invest much to monitor CCPs if they are effectively forced through legal mandates to deal with all major CCPs. Incentives to monitor CCPs and choose carefully which ones to use may be further hampered by Dodd-Frank's practice of assigning the right to select a CCP to the non-dealer party to a transaction—the party with the least incentive to monitor the CCP.[213] Further, as discussed below, the Dodd-Frank framework diminishes the role of financial firms in overseeing CCPs in favor of regulatory and public interest oversight. As a consequence, even if a dealer discovers a risk management problem at a CCP, it may not be able to get the CCP to address the problem.

D. Mandated Clearing Could Force Improper Risks into CCPs

Dodd-Frank's clearing mandate magnifies the complexity of CCPs' already difficult task of managing risk. The clearing mandate, when combined with other regulatory and economic pressures, encourages CCPs to open their doors to products that are more difficult to clear than the products typically cleared in the past by CCPs.

Table 2, which details the many issues confronting CCPs, illustrates the array of areas in which something could go wrong at a CCP—even one that does not clear OTC derivatives. As the CPSS-IOSCO report explained in modifying its central

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[209] LCH.Clearnet, for example, highlights its risk management, including in its slogan "Trusted Risk Management for Cleared Markets." *See* LCH.CLEARNET, *supra* note 81.

[210] MOODY'S INVESTORS SERVICE, PROPOSED CLEARING HOUSE RATING METHODOLOGY (2015), https://www.moodys.com/research/Proposed-Clearing-House-Rating-Methodology--PBC_181095. Moody's proposes to rate clearing houses according to a number of factors, including the way they plan for default, their competitive environment, the way they manage liquidity and counterparty risk, and availability of government and affiliate support. *Id*. at 5.

[211] *See supra* Table 2.

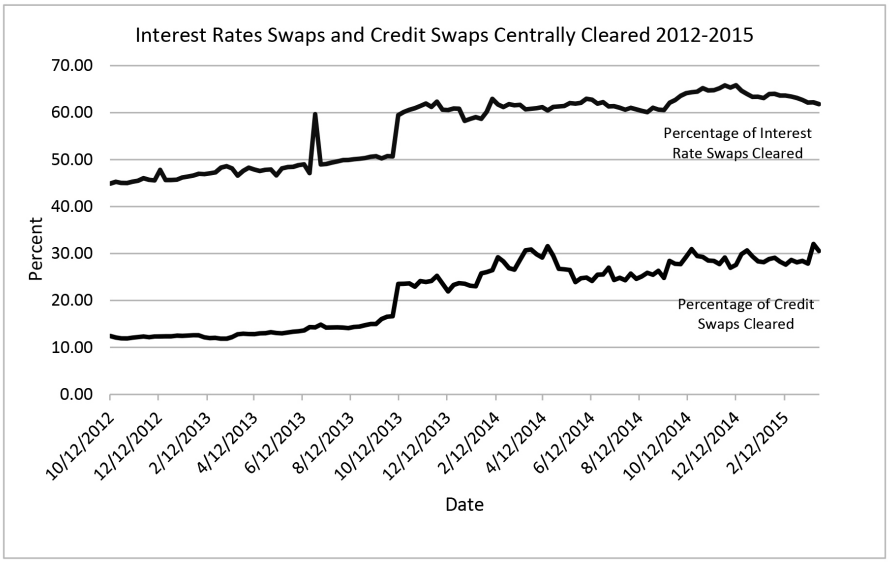
[212] *See* Cœuré, *supra* note 198 (arguing that greater transparency about CCP risks helps users of CCPs, especially "indirect members who, unlike direct members, do not play a direct role in the CCP's risk governance" to assess CCPs).

[213] *See, e.g.*, 17 C.F.R. § 23.432 (2016) (requiring swap dealers and major swap participants to disclose "that the counterparty has the sole right to select the derivatives clearing organization at which the swap will be cleared"). The non-dealer's clearing member presumably will monitor the CCP, but requiring that the non-dealer choose the CCP still removes the decision from the party with the most direct access to information about the CCP.

counterparty recommendations, "because of the complex risk characteristics and market design of OTC derivatives products, clearing them safely and efficiently through a CCP presents unique challenges that clearing listed or cash-market products may not."[214] The clearing mandate places a weighty thumb on the scale in favor of clearing that may cause regulators to overlook the "unique challenges" of clearing OTC derivatives.

The clearing mandate, along with preexisting market pressure to clear standardized swaps, has been successful in increasing the use of CCPs after the crisis.[215] ISDA reported that "[o]n average, more than 70% of interest rate derivatives and 80% of CDS index daily notional volume was cleared during the [first quarter of 2015]."[216] The following Figure shows the increasing share of cleared outstanding swaps over the period from 2012 to 2015.

Figure 5: Interest Rate Swaps and Credit Swaps Centrally Cleared 2012-2015[217]



[214] COMM. ON PAYMENT & SETTLEMENT SYS. & TECH. COMM. OF THE INT'L ORG. OF SEC. COMM'NS, GUIDANCE ON THE APPLICATION OF THE 2004 CPSS-IOSCO RECOMMENDATIONS TO OTC DERIVATIVES CCPS iii (2010), http://www.iosco.org/library/pubdocs/pdf/IOSCOPD320.pdf [hereinafter CPSS/IOSCO GUIDANCE]. The document provides an extensive discussion of the unique complexities of an OTC derivative CCP.

[215] Beylin has documented another interesting trend, namely that "the extent of swap activity within the U.S. by swap dealers has declined substantially . . . since the implementation of the clearing and platform execution mandates." Beylin, *supra* note 5, at 17-23.

[216] INT'L SWAPS & DERIVATIVES ASS'N., SWAPSINFO FIRST QUARTER REVIEW 1 (2015).

[217] FIN. STABILITY OVERSIGHT COUNCIL, FSOC 2015 ANNUAL REPORT DATA (2015), www.treasury.gov/initiatives/fsoc/studies-reports/Pages/2015-annual-report.aspx. Note: FSOC utilizes CFTC data. These are notional values. Data are adjusted for double-counting of cleared trades to show a single exposure for each trade. Methodology for collecting and reporting data changed in October 2013.

Some of these newly cleared swaps—particularly highly standardized interest rate swaps—are similar to futures and do not raise unique risk management concerns. Others may not meet the conditions for clearing: Highly standardized and liquid derivatives for which sufficient, reliable price data are available throughout the life of the contract. As Manmohan Singh warns, "pushing CCPs to clear riskier and less-liquid financial instruments, as the regulators are now demanding, may increase systemic risk and the probability of a bailout."[218] Single-name CDS contracts, for example, present a jump-to-default risk that makes them more difficult to properly margin than standard interest rate contracts.[219] Some swaps may behave unremarkably during normal market conditions, but may be prone to unanticipated, dramatic price moves.[220] Liquidity may fluctuate during a swap's lifetime.[221] Inter-product correlations are also not constant over time.[222] CCPs' margin models—developed for more standardized, highly liquid derivatives—may not properly accommodate the unique features of these newly cleared products and their correlations with other cleared products.[223]

In deciding which products to clear and how to margin them, CCPs must be alert to other correlations as well. As CPSS-IOSCO highlighted, correlations among cleared products and clearing members are also important:

> [R]isk may be amplified due to a correlation among risk factors. For example, a CCP clearing CDS could experience a "double default" where a reference entity defaults and a CCP's participant defaults simultaneously because the participant had a large short position (i.e. sold credit protections) in the reference entity or where the credit risk of a

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[218] Singh, *supra* note 154, at 9; *see also* Gary Cohn, *Clearing Houses Reduce Risk, They Do Not Eliminate It*, FIN. TIMES (June 22, 2015), http://www.ft.com/intl/cms/s/0/974c2c48-16a5-11e5-b07f-00144feabdc0.html#axzz40fWse8Qi (setting forth argument by Goldman Sachs CEO and president that non-standardized products in deeply liquid markets can safely be cleared, but "in other markets, clearing houses can themselves become centres of concentrated risk and sources of contagion, amplifying systemic problems instead of alleviating them" and explaining that "[f]orcing central clearing on . . . complex, illiquid products that are susceptible to sudden and severe price gaps . . . can have serious repercussions."). *But see* Squire, *supra* note 54, at 919 (arguing that, in order to increase netting opportunities, regulators should follow "the aphorism 'in for a dime, in for a dollar'").

[219] CPSS/ IOSCO GUIDANCE, *supra* note 214, at 13 ("[S]ome products may have non-linear risk characteristics (e.g. jump-to-default risk in a single-name CDS).").

[220] *See, e.g.*, Knott & Mills, *supra* note 57, at 172 ("[I]t will be important for CCPs to develop and enhance scenario-based stress-testing procedures which assess the impact of low probability, but nonetheless plausible events, which may have no precedent in the current historical record.").

[221] *See, e.g.*, Pirrong, *Economics of Central Clearing*, *supra* note 203, at 18 ("[I]n many OTC products, liquidity tends to decline over time, and these positions are often retained for extended periods.").

[222] Wibaut & Wilford, *supra* note 148, at 112 ("[A]re unlikely to hold when it matters most—a systemic disruption with significant market contagion.").

[223] *See, e.g.*, Knott & Mills, *supra* note 57, at 170 ("As CCPs expand into new markets, . . . there is a question about how effectively SPAN [a common margin methodology] can be adapted to deal with the more complex portfolios that result.").

> reference entity and that of a participant with a large short position are highly correlated. In another scenario, a defaulting participant with a short position may turn out to be the reference entity (self-referencing CDS).[224]

Dodd-Frank acknowledges that the clearing mandate is not appropriate for all OTC derivatives. The statute directs the regulators, in deciding whether to impose a clearing mandate on a swap or group of swaps, to consider a number of factors including "the existence of significant outstanding notional exposures, trading liquidity, and adequate pricing data" along with operational and legal frameworks.[225] Based on these factors, regulators could choose not to impose a clearing mandate on particular swap categories. Other statutory factors—systemic risk mitigation and competitive implications[226]—however, seem to nudge regulators to opt for a clearing mandate, even if there are concerns about inadequate liquidity or pricing data. For example, in one clearing determination, the CFTC's discussion of the systemic risk mitigation factor was conclusory—without any product-specific analysis, central clearing is simply presumed to mitigate systemic risk:

> Clearing the CDS indices subject to this determination will reduce systemic risk in the following ways: mitigating counterparty credit risk because the DCO would become the buyer to every seller of CDS indices subject to this determination and vice-versa; providing counterparties with daily mark-to-market valuations and exchange of variation margin pursuant to a risk management framework set by the DCO and reviewed by the Commission's Division of Clearing and Risk; posting initial margin with the DCO in order to cover potential future exposures in the event of a default; achieving multilateral netting, which substantially reduces the number and notional amount of outstanding bilateral positions; reducing swap counterparties' operational burden by consolidating collateral management and cash flows; and eliminating the need for novations or tear-ups because clearing members may offset opposing positions.[227]

The analysis repeats the standard arguments for clearing without applying them specifically to the CDS indices allegedly being analyzed. Thus, although CFTC Chairman Timothy Massad acknowledged the non-universality of the clearing

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224 CPSS/ IOSCO GUIDANCE, *supra* note 214, at 13.

225 Dodd-Frank Act § 723(a)(2) (codified at 7 U.S.C. § 2(h)(2)(D)(ii) (2012)).

226 *Id.*

227 Clearing Requirement Determination Under Section 2(h) of the CEA, 77 Fed. Reg. 74283 (Dec. 13, 2012) (to be codified at 17 C.F.R. pts. 39 & 50).

mandate in a recent speech,[228] the regulatory penchant for clearing may color the exercise of that care.[229]

Apart from the policymakers' tendency to favor clearing, there are strong commercial, financial, and competitive incentives to extend clearing mandates to additional categories of swaps. These pressures come from CCPs seeking to expand their businesses[230] and from market participants chafing under dealers' control of the bilateral markets.[231] Mandated central clearing brings with it new profit opportunities for firms that do not have large bank balance sheets and therefore were not attractive counterparties in the bilateral context.[232] Expansive central clearing mandates also can appeal to a broader set of market participants attracted to the capital and margin savings of centrally cleared products. CCPs offer multilateral netting, which can reduce collateral demands.[233]

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[228] Timothy G. Massad, Chairman, U.S. Commodity Futures Trading Comm'n, Keynote Address Before the District of Columbia Bar (July 23, 2015), http://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-26 ("We do not want to push all transactions into clearinghouses. There will always be some products that are not suitable for clearing because of their illiquidity or other risk characteristics. Clearinghouses will be stronger if we exercise care in what is centrally cleared.").

[229] *See, e.g.*, Anu Munshi, *CCPs—Too Big to Fail? The Danger of Concentration Risk*, DERIVSOURCE (Jan. 13, 2012), http://derivsource.com/content/ccps-%E2%80%93-too-big-fail-danger-concentration-risk ("Add to this the immense pressure from regulators and politicians for more derivatives to be cleared centrally and as soon as possible, when the CCPs are already working flat out on implementing a completely new way of operating for OTC derivatives.").

[230] *See, e.g.*, Gillian Carr, *CCPs Mull Equity Swaps Clearing Solutions*, RISK.NET (Mar. 20, 2015), http://www.risk.net/structured-products/news/2399385/ccps-mull-equity-swaps-clearing-solutions (reporting that a number of CCPs are "exploring the possibility of clearing a broader range of equity swap products," which could ultimately lead to new clearing mandates); Domanski et al., *supra* note 163, at 72 ("Most CCPs are for-profit entities—typically vertically integrated with other financial market infrastructures, such as exchanges—that are strongly motivated to generate revenues by expanding their product offering and capturing market share. However, new products could bring incremental risk, which clearing members may end up bearing if the CCP does not increase its capital commensurately.").

[231] *See, e.g.*, Letter from Adam C. Cooper, Senior Managing Director and General Counsel, Citadel LLC, to David A. Stawick, Secretary, Commodity Futures Trading Comm'n 4 (Sept. 6, 2012) ("The Determination takes the decisive step, which the market has long anticipated and prepared for, of making mandatory central clearing of the most liquid and standardized swaps a reality . . . . We are confident that this transition will support and incentivize the progressive expansion of the cleared product set, since it will be more economically efficient for market participants to hold as much as possible of their portfolios in a single margined basket at a clearinghouse.").

[232] *See, e.g.*, Katy Burne, *Citadel Makes Inroads into Swaps Arena*, WALL ST. J. (June 22, 2015), http://www.wsj.com/articles/citadel-makes-inroads-into-swaps-arena-1434997210 ("Citadel Securities' emergence as a big market maker in interest-rate swaps may draw other nonbank firms into what is seen as a potentially lucrative but technically challenging business, traders said.").

[233] As noted earlier, however, there may be an offsetting decrease in benefits from bilateral netting opportunities.

Regulatory advantages to clearing bolster the impetus for broad central clearing mandates. Among these advantages are potential margin savings compared to uncleared swaps. Dodd-Frank regulators are designing margin requirements on uncleared swaps to be more stringent than they would be in the cleared context.[234] Basel capital rules, which are being phased in, also offer favorable capital treatment for swaps cleared through a CCP that meets international standards—a qualifying CCP or "QCCP".[235] Uncleared OTC derivatives also carry a legal risk as Dodd-Frank requires the SEC and CFTC to take steps to prevent "evasion of the mandatory clearing requirements."[236] Regulators, inclined to favor clearing, may paint broadly with the evasion brush. The legal risk of being classified as evasive likely will stifle bilaterally negotiated derivatives' ability to play their important roles in facilitating risk management and fostering innovation.[237] If designing a new way to manage a client's risk invites regulatory scrutiny, dealers are likely instead to encourage clients to use homogenous, cleared products. Uncleared swaps already carry a stigma based on false crisis narratives,[238] and the anti-evasion provisions reinforce this prejudice.

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[234] *See, e.g.*, Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 79 Fed. Reg. 59897 (proposed Oct. 3, 2014) (to be codified at 17 C.F.R. pts. 23 & 240) ("Given the Congressional reference to the 'greater risk' of uncleared swaps and the requirement that margin for such swaps 'be appropriate for the risk,' the Commission believes that establishing margin requirements for uncleared swaps that are at least as stringent as those for cleared swaps is necessary to fulfill the statutory mandate."); *see also* Yellen, *supra* note 53, at 19-20 ("[A] more robust and consistent margin regime for non-centrally cleared derivatives will not only reduce systemic risk, but will also diminish the incentive to tinker with contract language as a way to evade clearing requirements.").

[235] *See generally* BASEL COMM. ON BANKING SUPERVISION, CAPITAL REQUIREMENTS FOR BANK EXPOSURES TO CENTRAL COUNTERPARTIES (2014), http://www.bis.org/publ/bcbs282.pdf. For a discussion of how capital rules apply to uncleared and cleared transactions, see, for example, Regulatory Capital Rules: Regulatory Capital, Implementation of Basel III, Capital Adequacy, Transition Provisions, Prompt Corrective Action, Standardized Approach for Risk-weighted Assets, Market Discipline and Disclosure Requirements, Advanced Approaches Risk-Based Capital Rule, and Market Risk Capital Rule, 78 Fed. Reg. 62017 (Oct. 11, 2013) (to be codified at 12 C.F.R. pts. 3, 5, 6, 165 & 167).

[236] Dodd-Frank Act § 723(a) (codified at 7 U.S.C. §2(h)(4) (2012)) (directing CFTC to prevent evasion of clearing mandate with respect to swaps); *id.* § 763(a) (codified at 15 U.S.C. § 78c-3(d) (2012)) (directing SEC to prevent evasion of clearing mandate with respect to security-based swaps); *see also* FIN. STABILITY BD., IMPLEMENTING OTC DERIVATIVES MARKET REFORMS 21 (2010) (warning regulators to be wary of customization as a way to avoid clearing).

[237] For a discussion of the important role that OTC derivatives have played in risk management and financial innovation, see POLICY PERSPECTIVES ON OTC DERIVATIVES MARKET, *supra* note 76, at 9-10.

[238] *See, e.g.*, Gary Gensler, Chairman, Commodity Futures Trading Comm'n, Remarks Before the Institute of International Bankers Washington Conference: Over-the-Counter Derivatives Reform (Mar. 1, 2010), http://www.cftc.gov/PressRoom/SpeechesTestimony/opagensler-28 ("If we exempt a large class of transactions from clearing, we will leave significant risk on the books of derivatives dealers. This is the same risk that reverberated throughout the economy during the financial crisis.").

E. Regulatory Conflicts of Interest Could Impair CCP Risk Management

CCPs, as originally conceived, brought together a group of members, which voluntarily pooled and cooperatively managed risks. In the new model, voluntary cooperative efforts are being replaced by regulatory mandates.[239] Not only does the Dodd-Frank regulatory structure force new risks into CCPs, it makes it more difficult for CCPs to manage those risks. Because of the important place CCPs have in the government-made OTC market structure and the at least implicit government backstop, many policymakers and academics call for intense regulation of CCPs.[240] As regulators take a greater interest in CCP risk management, their instinctively pro-clearing mindset could undermine CCP risk management.

As the CPSS-IOSCO standards laid out in Table 2 show, CCPs must make many operational and risk management determinations including deciding what to clear, setting membership standards, designing and using proper margin methodologies, managing operational risk, properly funding the guaranty fund, and carefully managing defaults. CCPs also have to make wise operational and technical decisions. The sum of these determinations affects whether a CCP will support or undermine the stability of the financial system. Many of these decisions require sophisticated modeling and complicated trade-offs with implications for CCP risk.[241] Regulators are typically viewed as having an important role to play in making key

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[239] As is evident from housing policy, bank capital requirements, credit ratings, and other areas in which the government has involved itself in assessing and managing risk, regulators' influence on these decisions can serve to undermine financial stability. *See, e.g.*, ARNOLD KLING, NOT WHAT THEY HAD IN MIND: A HISTORY OF POLICIES THAT PRODUCED THE FINANCIAL CRISIS OF 2008 (2009) (demonstrating role "that broad policy areas—including housing policy, capital regulations for banks, industry structure and competition, autonomous financial innovation, and monetary policy" played in bringing about the financial crisis); PETER WALLISON, HIDDEN IN PLAIN SIGHT: WHAT REALLY CAUSED THE WORLD'S WORST CRISIS AND WHY IT COULD HAPPEN AGAIN (2015) (discussing the role of failed government housing policy in the crisis).

[240] *See, e.g.*, Massad, *supra* note 228 (underscoring the importance of CCP regulation "because of the increased importance we have placed on central clearing"); *see also* Allen, *supra* note 153, at 1106 (calling for strict regulation and a pre-funded guaranty fund with a government backstop); Bernanke, *supra* note 56 (explaining that a robust prudential regulatory regime must accompany access to emergency credit facilities); Powell, *supra* note 169 (explaining that international CCP standards are "essential given that, in the interest of transparency and improved risk management, policymakers have encouraged the concentration of activities at these key nodes"); Tucker, *supra* note 206, at 12 (explaining that "[l]ike central banks, clearing houses are part of the essential financial plumbing of modern economies," former UK central bank official Paul Tucker argues that CCPs should be macroprudentially "regulated utilities"). *But see* Levitin, *supra* note 64, at 462-63 (identifying a potential role for regulation of CCP rules, but arguing principally for high capital standards to serve as a "financial sea wall" for CCPs).

[241] *See, e.g.*, IMF, GLOBAL FINANCIAL STABILITY REPORT, *supra* note 30, 18 (noting that "a CCP that relies on a lower margining and a high guarantee fund may contribute to moral hazard by encouraging some [clearing members] to take higher risks, since their losses are mutualized among all [clearing members, while on] the other hand, higher margining and a lower guarantee fund reduces [clearing members'] potential exposures to other [clearing members] and may dilute their interest in ensuring that the CCP manages its risks robustly.").

risk-management decisions,[242] but their involvement in these decisions may not improve CCP safety.[243]

The combination of complex risk management questions and the important role that CCPs play in the broader financial system naturally invites close regulatory scrutiny. The clearing mandate, however, diverts regulators' focus from risk management to incentivizing central clearing. Regulators have acknowledged that tensions exist.[244] Giving risk management considerations their proper place will continue to be difficult for regulators eager to increase central clearing and keen to mitigate the competitive effects and costs associated with the clearing mandate.

First, regulators may be moved by factors other than risk management in setting membership rules. A firm that does not qualify or choose to be a CCP member must clear through a member (or through a member's client) or forgo trading in swaps subject to a clearing mandate.[245] The SEC and CFTC have established membership requirements for CCPs, including a $50 million minimum for member capital.[246] The

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[242] *See, e.g.*, Agostino Capponi & W. Allen Cheng, Incentives Behind Clearinghouse Requirements 3 (2015), (unpublished manuscript) (concluding, in the context of setting margin, that "[d]epending on the prevailing equilibrium, regulation may be necessary for protecting the clearinghouse against default losses").

[243] *See, e.g.*, Wibaut & Wilford, *supra* note 148 (describing the many pitfalls regulators face in designing or influencing the design of the CCP landscape).

[244] *See, e.g.*, Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. 63732 (proposed Oct. 18, 2010) (to be codified at 17 C.F.R. pts. 1, 21, 39 & 40) [hereinafter CFTC Conflicts Proposal] ("[I]t is important to mitigate potential conflicts of interest that may prevent clearable swap contracts from becoming subject to mandatory clearing. At the same time, the Commission recognizes that the safety and soundness of a DCO should not be compromised. A DCO must not only have the ability to appropriately manage the risk associated with each and every contract that it guarantees, it must be able to decline accepting contracts for clearing if they pose unacceptable risks. In addition, DCO members must have input in setting membership criteria, because they bear the risk of loss in the event of member default.").

[245] *See, e.g.*, Braithwaite*, supra* note 71, at 16-17 (observing that the clearing mandate could effectively shut certain parties out of OTC markets subject to a mandate if they are neither eligible to be members nor desirable clients for a member); *see also* Clearing Agency Standards, 77 Fed. Reg. at 66240 ("[T]he success of correspondent clearing arrangements depends on the willingness of participants to enter such arrangements with non-participant firms that may act as direct competitors to the participants in the participants' capacity as dealers or security-based swap dealers in the market for the relevant securities.").

[246] *See* Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. 69333, 69356 (Nov. 8, 2011) (to be codified at 17 C.F.R. pt. 39) ("The Commission does not believe that the $50 million threshold would lead to a DCO having to admit clearing members that are unable to participate in the default management process. As discussed above, the regulation does not preclude highly-capitalized entities (such as swap dealers) from participating in a DCO as clearing members. Thus, the addition of smaller clearing members does not eliminate the role that larger clearing members can play in default management—it merely spreads the risk."); Clearing Agency Standards, 77 Fed. Reg. at 66242 ("[W]e believe that persons that maintain a net capital level of equal to or greater than $50 million, as well as an appropriate level of financial expertise, should not be denied participation in a CCP based solely on their net capital levels, provided that such persons are able to comply with other reasonable membership standards.").

CFTC, in its rule governing DCO membership requirements, struggled to navigate the line between risk-management and open-access. The CFTC claims to entrust DCOs "with discretion to balance restrictions on participation with legitimate risk management concerns" because they are "in the best position in the first instance to determine the optimal balance."[247] Yet it specifically prohibits DCOs from "sett[ing] a limit on the number of market participants that may become clearing members,"[248] setting more than a $50 million minimum capital requirement for membership,[249] and "requir[ing] members to post a minimum amount of liquid margin or default guarantee contributions, or to participate in a liquidity facility."[250] These decisions support open CCP access, but may interfere with legitimate CCP risk management.

There are reasons for favoring broad, diverse membership. Clearing proponents such as Professor Greenberger hope that a broader, more diverse membership will "foster long-term stability" and pay off in the event of a default "by distributing the costs of default across a greater number of members."[251] On the other hand, observers such as Professor Pirrong argue that homogeneous membership generates more stable CCPs.[252] Broadening CCP membership raises concerns, including the possibility that the new members will not be operationally able to participate in the wind-down of a defaulting member's portfolio or financially able to participate in default management auctions.[253]

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[247] Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69356.

[248] *Id.*

[249] *Id.* at 69355. The CFTC argued that "the addition of smaller clearing members does not eliminate the role that larger clearing members can play in default management—it merely spreads the risk" and that "[s]ubject to appropriate safeguards, outsourcing of certain obligations can be an effective means of harmonizing these goals." *Id.* at 69356. Query whether these outsourcing arrangements would be honored during a crisis when they would most likely be called upon. The SEC also employs a $50 million net capital membership threshold, but "recognizes the benefit of maintaining flexibility to allow a CCP to impose higher net capital requirements in circumstances where that is necessary to mitigate risks that could not otherwise be effectively managed by other measures." Clearing Agency Standards, 77 Fed. Reg. at 66243.

[250] Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69357.

[251] *See* Greenberger, *supra* note 52, at 256-57; *see also* Ed Nosal, *Clearing Over-the-Counter Derivatives*, 35 ECON. PERSP. 137, 144 (2010) (arguing that broad membership fosters liquidity and competition, so any firm that "can cover the risk that it brings into the CCP, by providing appropriate levels of collateral and making contributions to the guarantee fund" should be allowed membership").

[252] *See, e.g.*, Pirrong, *Economics of Central Clearing*, *supra* note 203, at 27 ("CCPs with more diverse memberships are more prone to conflict, more cumbersome to manage, less effective at responding to changes in the marketplace, and less effective at responding to crises that are likely to have disparate impacts on different types of firms" and are more vulnerable to "moral hazard problems").

[253] *See, e.g.*, *Default Management Process*, EUREX CLEARING, http://www.eurexclearing.com/clearing-en/risk-management/default-management-process (last visited Mar. 16, 2016); CHI. MERCANTILE EXCH., RULEBOOK, *supra* note 68, at Rule 8F025 (explaining that traders employed by certain clearing members will be called upon to advise on hedging, liquidating, and transferring a

Membership quality has traditionally been a key risk management feature of CCPs. Angela Armakola and Jean-Paul Laurent underscore the important relationship between CCP resilience in the face of stress scenarios and the strength of a CCP's member base.[254] They urge regulators to be "cautious about . . . [the] subsidizing of low quality [clearing members] that might overload a CCP at the expense of others, thus jeopardizing the efficiency of the new risk-sharing mechanisms."[255] They suggest that CCPs consider using "default fund add-ons for members with decreasing credit quality"[256]—a feature that runs counter to regulators' open-access theme. Professor Jo Braithwaite refers to this as "the membership dilemma" created by "regulators having framed compulsory legislation around a private sector legal device designed to mutualise losses for selected participants."[257] As Professor Hal Scott explains, "[a] clearinghouse is just an association, so it's only as strong as the member firms. If you were hell-bent on fairness, and opened this thing to everybody, that would increase the risk to the clearinghouse."[258] A United Kingdom financial regulator urged the CFTC to be careful not to err on the side of excessively lax membership requirements:

> Participation requirements sometimes need to be tailored to take into account the types of products being cleared by a CCP. For example the less liquid derivative markets typically require more complex default management processes that impose more onerous obligations on the participants than the exchange traded futures market. The ability of the surviving clearing members to meet their obligations in relation to default management is important in mitigating systemic risk in the event of a clearing member default.[259]

Second, the mandated use of CCPs has given them a quasi-public character in regulators' eyes, which complicates CCP governance by introducing competing

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defaulting member's portfolio). For a brief discussion of the role played by nondefaulting members when a member defaults, see Cecile Sourbes, *CCPs Confront the Difficult Maths of Default Management*, RISK.NET (Jan. 28, 2015), http://www.risk.net/risk-magazine/feature/2391889/ccps-confront-the-difficult-maths-of-default-management (using the example of LCH.Clearnet's handling of the Lehman default in 2008 to explain the role that clearing members play when another member defaults). CCPs may punish members that do not participate in good faith in the auction process by making their contributions to the guarantee fund the first to be tapped to meet a post-auction shortfall. *See id.*

254 *See* Angela Armakola & Jean-Paul Laurent, CCP Resilience and Clearing Membership (Nov. 20, 2015) (unpublished manuscript), http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2693427_code1859873.pdf?abstractid=2625579&mirid=1.

255 *Id.* at 26.

256 *Id.*

257 Braithwaite, *supra* note 71, at 12.

258 *Q&A with Hal Scott of Harvard Law: Clearinghouse Ownership and Risk*, TRADEWEB.COM (Oct. 20. 2010), http://www.tradeweb.com/Blog/Q-A-With-Hal-Scott-of-Harvard-Law--Clearinghouse-Ownership-and-Risk.

259 Letter from Alexander Justham, Director, Market Division, Fin. Servs. Authority, to David A. Stawick, Secretary, U.S. Commodity Futures Trading Comm'n, 2 (Mar. 21, 2011).

interests.[260] Heritage Foundation scholar Norbert Michel points out that Dodd-Frank's classification of CCPs as financial market utilities "marks a dangerous shift in the relationship between government and private markets because it implies that private financial firms cannot—or should not—competitively provide financial services."[261] The CPSS/IOSCO principles, which heavily inform U.S. regulation, emphasize the responsibility of financial market infrastructures to "support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders,"[262] and call for governance to balance the interests of a CCP's owners, board of directors, managers, clearing members, regulators, and "other stakeholders."[263] Directing CCPs—in the nebulous name of public interest—to serve multiple constituencies with potentially conflicting objectives may have the perverse effect of destabilizing CCPs and the financial system. CCPs that are run with a member-focus are more likely to elevate risk management than CCPs required to consider a host of other constituencies (such as regulators and other non-member "stakeholders"), who do not face the prospect of absorbing CCP losses.

Third, regulators face pressure to view risk management measures as the product of competitive machinations by dealers. In a comment letter to the CFTC, for example, the Department of Justice argued that anti-competitive behavior in connection with CCP access "could be explained away . . . by expressing risk management-related concerns" and urged the CFTC to adopt stricter conflict of interest standards for CCPs.[264] This view may inform regulators' decisions to disallow particular risk management measures. It also helps to drive calls for governance and ownership restrictions on CCPs.

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[260] Both the SEC and CFTC have proposed—but not adopted—ownership and governance rules. *See* Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. 63732 (proposed Oct. 18, 2010) (to be codified at 17 C.F.R. pts. 1, 37, 38, 39 & 40); Ownership Limitations and Governance Requirements for Security-Based Swap Clearing Agencies, Security-Based Swap Execution Facilities, and National Securities Exchanges with Respect to Security-Based Swaps Under Regulation MC, 75 Fed. Reg. 65882 (proposed Oct. 26, 2010) (to be codified at 17 C.F.R. pt. 242) [hereinafter SEC Conflicts Proposal].

[261] Michel, *supra* note 118, at 10.

[262] CPSS/IOSCO PRINCIPLES, *supra* note 77, at 1.

[263] *Id.* at 26.

[264] Department of Justice, Comment Letter on Proposed Rule for Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest (Dec. 28, 2010), http://comments.cftc.gov/PublicComments/ViewComment.aspx?id=26809 [hereinafter DOJ Comment Letter]; *see also* Chang, *supra* note 56, at 810-12 (arguing that "because big banks, which tend to be the powerhouse derivatives dealers, control clearinghouses, there is a danger that big banks can leverage the dominance of clearinghouses to consolidate their share in the dealer market" and arguing for the application of the "essential facilities doctrine" for the purpose of "clarifying when rivals of clearinghouse members might be able to pursue a private right of action") (footnote omitted); Kristin N. Johnson, *Clearinghouse Governance: Moving Beyond Cosmetic Reform*, 77 BROOKLYN L. REV. 681, 696-701 (2012) (arguing that large dealer CCP members' "rent-seeking motives" could lead CCPs to make decisions that undermine the role of CCPs in risk mitigation).

Many observers favor replacing dealer influence in governance and risk management with public interest and regulatory representation. Professor Greenberger has called for at least half of directors to be independent.[265] Professor Kristin Johnson, pointing to the "conflict between regulators' expectations and . . . clearinghouse owners' priorities,"[266] calls for a regulator-appointed monitor to serve as a board watchdog who "would report directly to and receive compensation from" regulators.[267] Johnson also calls for expert directors without "material financial ties" to serve on powerful risk management committees.[268] The Department of Justice has called for the risk management committee to be populated with a majority of independent directors.[269] Better Markets likewise advocates that a CCP's risk management committee "be controlled in form and substance by independent decision-makers."[270] Under Dodd-Frank's conflict of interest mandates, the SEC and CFTC have contemplated individual and aggregate ownership caps and independent director involvement in governance to temper clearing member influence.[271]

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[265] *See* Greenberger, *supra* note 52, at 265.

[266] Kristin N. Johnson, *Governing Financial Markets: Regulating Conflicts*, 88 WASH. L. REV. 185, 221 (2013).

[267] *Id.* at 240.

[268] *Id.* at 206-07.

[269] DOJ Comment Letter, *supra* note 264, at 7.

[270] Better Markets, Inc., Comment Letter on Proposed Rule for Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest (Nov. 17, 2010), http://bettermarkets.com/sites/default/files/documents/CFTC-%20CL-%20Conflicts%20of%20Interest%20SEFs%2C%20DCOs%2011-17-10.pdf.

[271] The SEC proposed two alternatives: (1) CCP member ownership interest and voting rights are capped individually at twenty percent and in the aggregate at forty percent; and at least thirty-five percent of the board of directors and committees must be directors who are independent of the CCP and its members, except for the nominating committee, which must have a majority of independent directors; and (2) CCP member ownership and voting rights are capped at five percent, a majority of all directors are independent, all members of the nominating committee are independent, and all other committees are majority independent. Ownership Limitations and Governance Requirements for Security-Based Swap Clearing Agencies, Security-Based Swap Execution Facilities, and National Securities Exchanges with Respect to Security-Based Swaps under Regulation MC, 75 Fed. Reg. 65882, 65894-5902 (proposed Oct. 26, 2010). The CFTC also proposed two alternatives: (1) CCP members' and other large financial institutions' voting equity is capped at twenty percent individually and forty percent in the aggregate; and (2) CCP members' and other large financial entities' voting equity is capped at 5 percent. Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. 63732, 63738, 63743-44 (proposed Oct. 18, 2010). The CFTC also proposed to require that thirty-five percent, and no fewer than two, of the directors be "public" directors. *Id.* at 63738. The nominating committee would have to have at least fifty-one percent public directors, one of whom would have to be chairman. Thirty-five percent of the risk management committee members would have to be public directors, and ten percent would have to be customers of clearing members. *Id.* at 63740. For a helpful summary and an insightful analysis of these proposals, see Sean J. Griffith, *Governing Systemic Risk: Towards a Governance Structure for Derivatives Clearinghouses*, 61 EMORY L.J. 1153, 1212-26 (2012).

Professor Sean Griffith acknowledges that "dealers must exert a level of control over clearinghouse operations that is commensurate with their exposure to risk through the clearinghouse," but advocates that CCP boards include some directors elected by regulators to ensure systemic risk considerations are taken into account.[272] Concerns about dealer control of CCPs are understandable in light of their increasing importance, but attempts to readjust the power dynamics at CCPs may unintentionally destabilize them.

Fourth, regulators, faced with the expansion of CCPs, may be tempted to employ one-size-fits-all regulations that distract CCPs from conducting their own tailored risk management. Stress tests are one area in which this concern has arisen. CFTC Commissioner Wetjen, although calling for "[m]ore standardized stress tests" across jurisdictions,[273] warned that "[w]hile standardization and uniformity are appealing, they could inadvertently impede innovation and thoroughness. Would we start to teach to the test instead of evaluating and refining the stress test methodologies as appropriate?"[274]

Fifth, a prescriptive regulatory regime applicable to a small number of firms with a vital role in the financial system seems fertile ground for regulatory capture.[275] Economist George Stigler warned that, "as a rule, regulation is acquired by industry and is designed and operated primarily for its benefit."[276] There are a small number of CCPs and Dodd-Frank legally mandates that they be used. There are also relatively few large firms that serve as clearing members. Although the new regulatory framework is burdensome for both sets of firms, they could seek to use these burdens to their advantage in blocking entry by domestic and foreign rivals. Alternatively, as the Shadow Financial Regulatory Committee suggested, CCPs could "exploit opportunities for regulatory arbitrage and regulatory capture to lessen the costs of government oversight."[277] Moreover, CCPs are likely to put pressure on

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[272] *Id*. at 1221, 1235-40.

[273] Mark P. Wetjen, Commissioner, U.S. Commodities Futures Trading Comm'n, Ensuring the Promise of a Centrally Cleared, Glob. Swaps Mkt.: Next Steps (Dec. 4, 2014); s*ee also* David Bailey, The Bank of England's Perspective on CCP Risk Management, Recovery and Resolution Arrangements, Speech at the Deutsche Boerse Group and Eurex Exchange of Ideas Conference (Nov. 24, 2014) (calling for "[s]tandardised stress tests" to "complement more tailored and potentially much more rigorous internal stress testing, developed and implemented by individual CCPs"); Jerome H. Powell, Governor, Fed. Res. Bd. of Governors, A Financial System Perspective on Central Clearing of Derivatives (Nov. 6, 2014) ("Not all CCPs are alike. But there may be approaches that could bring some of the benefits of standardization while allowing tailoring of some scenarios to the activities of particular CCPs or groups of CCPs.").

[274] Wetjen, *supra* note 273.

[275] I credit an anonymous peer reviewer for raising this concern. A full analysis of regulatory capture in the post-Dodd-Frank derivatives markets is beyond the scope of this piece, but would be a productive area for further research.

[276] George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971).

[277] Edward Kane, Statement of the Shadow Fin. Regulatory Comm. on The Dangers of Substituting Foreign Compliance for US Supervision of Fin Derivatives Activity (May 13, 2013), http://www.aei.org/wp-content/uploads/2013/05/-statement-no-340-the-dangers-of-

regulators to dissuade the use of non-cleared derivatives, which can serve as substitutes for cleared products. The authority of multiple regulators in this space might have the salutary effect of impeding regulatory capture, but divided regulatory authority brings its own challenges.

Sixth, conflicts among regulators could exacerbate CCP risk by adding complexity to CCP management. The SEC and CFTC directly regulate CCPs and the Federal Reserve plays a back-up role under Title VIII of Dodd-Frank. The approaches taken by these agencies are not always consistent, in part because of the historical differences in the way the agencies oversaw CCPs.[278] There have also been calls for the involvement of the FSOC in CCP regulation.[279] Moreover, because OTC derivatives markets operate across borders, cooperation among international regulators of CCPs is important. Relations between U.S. regulators and their foreign counterparts were strained from the outset, because Dodd-Frank requires foreign regulators to indemnify the CFTC if they obtain information from the commissions about CCPs.[280] Despite the common G-20 commitment to central clearing, regulators have taken a strongly territorial approach to CCPs.[281] As challenging as these regulatory disagreements are to CCPs routinely, they could cause severe difficulties during a crisis as regulators fight to keep assets in CCPs within their jurisdiction.[282]

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substituting-foreign-compliance-for-us-supervision-of-financial-derivatives-activity_131454985226.pdf.

[278] *See, e.g.*, CFTC & SEC, A JOINT REPORT OF THE SEC AND THE CFTC ON HARMONIZATION OF REGULATION 88 (2009), https://www.sec.gov/news/press/2009/cftcjointreport101609.pdf ("The CFTC does not have clear authority, for example, to set rules for risk management for exchanges and clearinghouses. The CFTC's authority contrasts with the authority of other regulators, such as the SEC or regulators in foreign jurisdictions.").

[279] *See* Letter from Paul Saltzman, President, Clearing House Association, LLC, to Jacob Lew, Chairman, Financial Stability Oversight Council (Jan. 9, 2015) ("[T]he FSOC [should] coordinate and work with its member agencies with authority over CCPs to strengthen the ability of CCPs to mitigate and manage systemic risks arising from CCP operations."). *But see* Letter from Terrence A. Duffy et al., Executive Chairman and President, CME Group, to Jacob L. Lew, Chairman, Financial Stability Oversight Council (Mar. 9, 2015), http://www.optionsclearing.com/components/docs/about/press/comment-letters/20150309-FSOC.pdf (arguing against the one-size-fits-all regulation that might be introduced by active FSOC involvement in CCP regulatory issues).

[280] Dodd-Frank Act § 725(e) (codified at 7 U.S.C. § 7a-1(k)(5) (2012)).

[281] *See, e.g.*, FIN. STABILITY BD., *supra* note 37, at 11 ("In the majority of cases, CCPs are authorized to clear products in a given asset class in only one or two jurisdictions. Only in the case of interest rate derivatives are there a couple of CCPs that are concurrently authorised in four or more jurisdictions. The limited extent of cross-border availability of CCPs is a potential challenge for the further expansion of central clearing of OTC derivatives, given that most jurisdictions require that a given CCP be locally authorised if it is to be used for meeting that jurisdiction's central clearing requirements.").

[282] *See, e.g.*, Wendt, *supra* note 167, at 12 ("International coordination among authorities will be challenging, in case of a default impacting multiple jurisdictions, as interests may differ. The home authority may give priority to maintaining the CCP's operations, whereas the authorities of other countries may prioritize the stability of their financial system or local banks."); *see also* Kay Swinburne, Member of the European Parliament, Speech Before the World Federation of Exchanges/IOMA Conference (May 5, 2015), http://www.kayswinburne.co.uk/articles/SpeechWFEIOMA050515/559 ("[I do not] want to

As clearing mandates take hold around the world, the pressure for linkages among CCPs is likely to grow,[283] which will only further complicate regulatory oversight.

Finally, the desire to increase the proportion of cleared swaps is likely to affect regulators' oversight of key risk management decisions. Decisions related to margin—methods used to determine how much is collected, the form margin may take, and how it is invested—are one area in which regulators' perspectives could be colored by their excessively pro-clearing bent. If margins are set improperly, the CCP may be at risk.[284] Regulatory pressure may reinforce competitive pressures; if margins are set too high, market participants may seek out other CCPs.[285] Alternatively, firms might retain risks instead of entering into highly margined derivatives transactions. As Paul Tucker argues, CCPs may have a natural inclination to behave pro-cyclically by "shading margins to the downside during normal times to help sustain market growth or market share, and tightening sharply as and when conditions deteriorate."[286] Market participants may urge regulators to pressure CCPs to keep margins down, and regulators may assent to retain broad support for clearing. Margining methodologies are complex and model-based,[287] and how best to set margins is matter of great debate among academics[288] and regulators.[289] Because

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see a scenario where the banking regulator of a large clearing member refuses to allow that member to participate in refills of a CCPs default fund as it is concerned about that bank having enough capital to refill one of its own domestically supervised CCPs").

[283] Linking can take different forms. *See, e.g.*, IMF, GLOBAL FINANCIAL STABILITY REPORT, *supra* note 30, at 114.

[284] *See id.* at 108 (discussing CCP failures and highlighting the role that failure to properly increase margin requirements played in the failures of the French Caisse de Liquidation, the Malaysian Kuala Lumpur Commodity Clearing House, and the Hong Kong Futures Exchange).

[285] *See, e.g.*, Nicole Abruzzo & Yang-Ho Park, *An Empirical Analysis of Futures Margin Changes: Determinants and Policy Implications* 24 (Fed. Res. Bd. Fin. and Econ. Discussion Paper No. 2014-86, 2014), http://www.federalreserve.gov/econresdata/feds/2014/files/201486pap.pdf (finding "that margin changes can be partly explained by competition even after changes in other margin determinants are controlled for" and that "competition among CCPs can make overall margin requirements inappropriately lax"). They also note that CCPs can compete not only based on margin levels, but "in terms of acceptable collateral, haircut rates, or guaranty fund contributions." *Id*. at 25.

[286] Tucker, *supra* note 206.

[287] For a glimpse into margin-setting methodologies, see ICE CLEAR CREDIT, ICE CDS MARGIN CALCULATOR ICE LINK GUI (Aug. 2014), https://www.theice.com/publicdocs/clear_credit/ICE_CDS_Margin_Calculator_Presentation.pdf.

[288] Trade-offs in setting margin or collateral arise in both the cleared and uncleared contexts. A full discussion of these trade-offs is beyond the scope of this article, but these issues have been discussed elsewhere. *See, e.g.*, Rajna Gibson Brandon & Carsten Murawski, *Margining in the Derivatives Markets and the Stability of the Banking Sector*, 37 J. BANKING & FIN. 1119 (2013). CCPs face some unique issues in margin-setting. *See, e.g.*, Thorsten V. Koeppl, *Time for Stability in Derivatives Markets—A New Look at Central Clearing for Securities Markets*, C.D. HOWE INST. COMMENTARY, No. 329, May 2011, at 20 ("Collateral can basically serve two functions: as an incentive device to decrease risk-taking or as an insurance device against counterparty default. A CCP can save on collateral since it provides cheaper insurance in the form of novation and mutualization of losses. But a CCP needs to

there is not a widely accepted formula for setting margin, there is a lot of room for non-risk considerations to affect regulators' views on margin methodologies. Wibaut and Wilford point out, for example, that regulators' role in setting the type of margin that CCPs can accept could be influenced by the same forces that drove regulators to treat German and Greek bonds as equivalent.[290] Consequences of regulatory mistakes may not manifest themselves until a crisis.

Another example where the desire to move swaps into CCPs may color regulators' view of key risk management issues is what, if any, role a CCP's own capital should play in absorbing losses from member defaults and how CCP resolution should be handled. On the one hand, members argue that CCPs must face consequences from member defaults so that they can take adequate measures to prevent them from happening.[291] On the other hand, CCPs are likely to resist having regulators mandate contributions by CCPs.[292] Regulators are likely to look for the approach that imposes the least additional immediate cost on clearing services, even if that approach does not reflect the allocation of risk most conducive to sound risk management. To keep clearing cheap, regulators may tolerate large uncovered risks with the expectation that taxpayers will bear losses when the crisis comes. This temptation leads to a final problem—the specter of a future government bailout.

F. Bailout Risk

In an era of clearing mandates, a shuttered CCP could devastate markets as market participants must centrally clear transactions subject to the clearing mandate. If the CCP shut down, market participants would not be able to transact in products subject to the clearing mandate unless there were a competing CCP clearing those products. Clearing members and their regulators therefore will have a strong interest in keeping a CCP that has gotten to the end of its default waterfall up and running.[293]

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rely more heavily on collateral to limit incentives for risk-taking. Hence, collateral requirements might very well increase significantly with CCP clearing as pointed out by some large dealers.").

[289] *See, e.g.*, Verena Ross, Exec. Dir., European Securities and Markets Authority, Keynote Speech at IDX 2015 (June 9, 2015) (arguing that the CFTC's proposed one-day margin period of risk for clearing members' accounts is insufficient to protect CCPs and their nondefaulting members if a member defaults); Timothy G. Massad, Chairman, Remarks Before the European Union Parliament, Committee on Economics (May 6, 2015), http://www.cftc.gov/ucm/groups/public/@newsroom/documents/speechandtestimony/opamassad-20.pdf (arguing that CFTC's one-day margining approach may actually lead to higher margin than Europe's two-day margin period because the CFTC does not allow netting of customer margin as European regulators do); *see also* Cecile Sourbes & Kris Devasabai, *Regulators to Put CCP Risks Under Microscope*, RISK.NET (May 7, 2015) ("[CCP] [m]argin models have long been a source of controversy.").

[290] Wibaut & Wilford, *supra* note 148, at 108 n.7.

[291] *See* Letter from Paul Saltzman to Jacob Lew, *supra* note 279.

[292] Letter from Terrence A. Duffy to Jacob L. Lew, *supra* note 279 ("Although our CCPs have very different default management waterfalls, we all agree that because CCPs are not principal risk-taking institutions and because their continuation as institutions depends upon effective risk management and default management programs, there is no 'moral hazard' to be cured by mandating a specific or uniform approach to CCP contributions.").

[293] *See supra* Table 1.

Demands for contributions to resuscitate a failing CCP, however, are likely to come at a time of market stress, when clearing members are facing many other claims on their assets, particularly their liquid assets.

If clearing members could not prop up a CCP, presumably the government that imposes the clearing mandate and supervises CCPs would go to great lengths to keep them in operation. A CCP failure would reflect badly on CCP's regulators.[294] The potential availability of government support for a failing CCP is reflected in Dodd-Frank in two ways. First, Dodd-Frank's drafters did not seem to expect that CCPs would be eligible for the orderly liquidation authority in Title II of Dodd-Frank. The orderly liquidation authority, a centerpiece of Dodd-Frank, is an alternative to bankruptcy for resolving large financial institutions. Whether a CCP could be resolved under Title II is at best ambiguous. Title II does not explicitly cover CCPs. Professor Lubben convincingly argues that both the language and logic of Title II exclude CCPs from its reach.[295]

The second way is in authority given to the Federal Reserve. Title VIII gives the Federal Reserve the authority to loan money through the discount window to systemically important CCPs in "unusual or exigent circumstances."[296] Dodd-Frank also allows the Federal Reserve to establish accounts for systemically important CCPs and provide services to them such as currency and coin services, check clearing and collection services, wire transfer services, automated clearinghouse services, settlement services, securities safekeeping services, and Federal Reserve

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[294] Kane, *supra* note 277.

[295] Stephen J. Lubben, *Failure of the Clearinghouse: Dodd-Frank's Fatal Flaw?*, 23-24 VA. L. & BUS. REV. (forthcoming 2016), http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2652011_code108302.pdf?abstractid=2652011&mirid=1 [hereinafter Lubben, *Failure of the Clearinghouse*] (arguing that CCPs likely are not encompassed in the list of companies that can proceed through resolution and that, had CCPs been intended to be covered, the CFTC would have been granted a role in deciding whether a CCP should be put into the orderly liquidation authority); *see also* Darrell Duffie, *Financial Market Infrastructure: Too Important to Fail* 3 (Hoover Inst. Econ. Working Paper No. 14101, 2014) (discussing questions about whether Title II, particularly as interpreted by the Federal Deposit Insurance Corporation, applies to CCPs). Julia Allen has come to a different legal conclusion about the applicability of Title II to CCPs, but argues that "[T]he logistical complexities of applying the Orderly Liquidation Authority procedures to an insolvent clearinghouse make government intervention before initiation of the receivership process the most likely outcome." Allen, *supra* note 153, at 1103.

[296] Dodd-Frank Act § 806(b) (codified at 12 U.S.C. § 5465 (2012)) ("The Board of Governors may authorize a Federal Reserve Bank . . . to provide a designated financial market utility discount and borrowing privileges only in unusual or exigent circumstances, upon the affirmative vote of a majority of the Board of Governors . . . after consultation with the Secretary, and upon a showing by the designated financial market utility that it is unable to secure adequate credit accommodations from other banking institutions."); s*ee also* Baker, *supra* note 152, at 180 ("The failure of a systemically significant clearinghouse could be catastrophic. It would threaten widespread, domino-like disruptions of critical money flows that its members and other financial institutions count on to meet their own financial obligations all over the world. Intervention by a government backstop—a last resort clearinghouse—would likely be needed to avert the collapse of a systemically significant clearinghouse. Due to critical but little understood reforms in Title VIII, the Federal Reserve can now assume this role in certain situations.").

float.[297] Emergency liquidity assistance need not be a bailout; if properly collateralized and made at a penalty interest rate, a loan to a solvent CCP could be an efficient way for the Federal Reserve to support the functioning of the financial system during a crisis.[298] As Professor Lubben points out, however, "it might not even be possible to know at the time discount window lending happens if it constitutes a bailout."[299] The Federal Reserve's use of lending programs in past crises illustrates how difficult it is to know whether a loan constitutes a bailout.[300]

The availability of emergency lending may pose a risk as it could breed carelessness by both CCPs and regulators. The Federal Reserve's past use of emergency lending has created expectations that the Federal Reserve would not hesitate to engage in emergency lending in the future.[301] Manmohan Singh points out that the availability of emergency liquidity support "may lead to moral hazard that may manifest itself, for example, in CCPs not requiring full collateral from their existing members/clients, quite possibly with the acquiescence of regulators."[302] Likewise, Professor Colleen Baker argues that, "the very presence of a potential central bank backstop for systemically significant clearinghouses—essentially the possibility of catastrophic liquidity insurance—creates a significant moral hazard."[303] Regulators may view emergency lending as a backstop for subpar regulatory efforts. If regulators have acquiesced in or encouraged CCP under-margining, inadequate guaranty funds, or some other risk-management misstep, they are particularly likely

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297 Dodd-Frank Act § 806(a) (codified at 12 U.S.C. § 5465 (2012)).

298 *See, e.g.*, Jeremy C. Kress, *Credit Default Swap Clearinghouses and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity*, 48 HARV. J. LEGIS. 49, 79 (2011) ("[D]irect CCP access to emergency lending is more efficient and equitable, and thus superior, to the Federal Reserve lending indirectly through CCP members"). The likelihood that the provision will be used for a bailout may be increased by the fact that—as Baker points out—the phrasing, "unusual *or* exigent circumstances" is broader than the "unusual and exigent circumstances" used in the Federal Reserve's emergency lending authority under Section 13(3) [12 U.S.C. § 343(3)(A) (2012)]. Baker, *supra* note 152, at 180 n.38.

299 Stephen J. Lubben, *Nationalize the Clearinghouses* 29 (Seton Hall Public L. Res., Working Paper No. 2458506, 2014), http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2458506_code108302.pdf?abstractid=2458506&mirid=1 [hereinafter Lubben, *Nationalize the Clearinghouses*]. Lubben elsewhere argues that a customized bailout, such as was used for Fannie Mae and Freddie Mac, might be crafted for a CCP in the heat of a crisis. Lubben, *Failure of the Clearinghouse*, *supra* note 295, at 28-30.

300 The Federal Reserve, for example, lent to American International Group in 2008, even though there were serious questions about whether the company was solvent. *See* Peirce, *supra* note 10, at 38.

301 *See, e.g.*, Renee Haltom & Jeffrey M. Lacker, *Should the Fed Have a Financial Stability Mandate? Lessons from the Fed's First 100 Years*, *in* FEDERAL RESERVE BANK OF RICHMOND 2013 ANNUAL REPORT 7 ("Government-lending programs often appeared to stabilize markets because they confirmed hopes of intervention, and so have been hailed as successes. But this has come at the cost of moral hazard, greater risk-taking, and greater instability down the road.").

302 Singh, *supra* note 154, at 17.

303 Baker, *supra* note 152, at 184.

to be pressured to bail out a failing CCP. If problems emanate from products or participants in CCPs because of a clearing mandate, regulators will likewise face bailout pressure.

Even without express Dodd-Frank language on which to rely, the regulatory structure that has forced risks into CCPs brings with it an implicit government guarantee. Ben Bernanke argued against worrying too much about a breakdown in clearing in the futures market because "the government, especially the central bank, should be thought of as part of the system."[304] He goes on to explain that:

> [T]here are actions that the government can take (and likely will take, for political economy reasons) to protect the clearing and settlement systems, should they be in danger. When the financial system is conceived broadly to include the government as the "insurer of last resort," the current institutional setup seems satisfactorily robust to the threat of financial crisis.[305]

Bernanke concludes that in 1987, "[t]he Federal Reserve's gamble paid off."[306] Although written before he became Federal Reserve Chairman and before the clearing mandate took hold, this view of the government, as the insurer of last resort for clearinghouses, seems to invite market participants to anticipate government intervention if a CCP runs into trouble. Messages to the contrary are important,[307] but may not overcome the market expectations grounded in the experience of the last crisis, the many financial company bailouts that preceded it, and the intense involvement of government in modern-day clearing. Professor Lubben shares Chairman Bernanke's certainty that the government would step in to bail out a CCP "because the important, central place of clearinghouses after Dodd-Frank makes their failure too disruptive to be politically tolerated."[308] Professor Lubben calls for making the bailout explicit ex ante through the statutory establishment of an orderly-liquidation-authority type mechanism run by the Federal Reserve.[309]

The economics of clearing suggest that certain CCPs may act as de facto monopolies in particular asset classes[310]—a fact that makes a bailout more likely if one of these key CCPs were to fail. If only one CCP clears a product that is subject

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[304] Bernanke, *supra* 172, at 145.

[305] *Id.* at 145-46.

[306] *Id.* at 148.

[307] Powell, *supra* note 273 (advising "CCPs and their members" that they "must plan to stand on their own and continue to provide critical services to the financial system, without support from the taxpayer").

[308] Lubben, *Nationalize the Clearinghouses*, *supra* note 299. Elsewhere, Lubben explains that "the government should expressly state clearinghouses that ultimately fail will be nationalized, with specific consequences to investors, and an expectation of member participation in the recapitalization of the clearinghouse, once that becomes systemically viable." Lubben, *supra* note 295.

[309] Lubben, *Nationalize the Clearinghouses*, *supra* note 299, at 301.

[310] *See, e.g.*, Capponi & Cheng, *supra* note 234 ("[T]here is a large cost of entry to the clearing business, and clearing is currently segregated among asset classes and concentrated within a few clearinghouses, granting them significant market power.").

to a clearing mandate,[311] markets will not be able to function as usual if the CCP ceases to exist. Transactions in a product subject to a clearing mandate cannot lawfully occur unless there is a CCP that accepts that product. Consequently, the government will be under intense pressure to rescue and resuscitate a failing CCP.[312] An alternative would be for the government to encourage another already operational and healthy CCP that clears other types of products to begin clearing the products formerly cleared by the failing CCP. Such an expansion, however, would likely take considerable time as it would require the expanding CCP to analyze the risk associated with the new product and any new clearing members, determine how it will manage that risk, and gain regulatory approval to clear the product.

A possible rejoinder to the concern about bailouts is that CCPs rarely fail. There have been failures, however, and today's more complex CCPs distorted by clearing mandates and attendant regulation are not immune from failure. Past failures include the Caisse de Liquidation in 1974, the Kuala Lumpur Commodity Clearing House in 1983, and the Hong Kong Futures Exchange Clearing Corp. in 1987.[313] In each case, the problem related to margin issues.[314] Brazil's BM&F CCP almost failed in 1999 when there was inadequate margin after a real devaluation caused two clearing members to default.[315] The Bank of England's Paul Tucker described the severe fallout from the Hong Kong failure:

> [T]he Hong Kong Futures Exchange clearing house (and its guarantee corporation) failed in the wake of the global stock market crash in 1987. The Futures Exchange had to close. Traders faced margin calls on cash market equity positions but, with the futures market closed and the clearing house bust, they could not get margin moneys returned on profitable futures positions. For that and other reasons, the stock market closed too. Hong Kong's main capital market shut down. Reopening the exchanges was no small feat. Ultimately, Hong Kong taxpayers, together with the clearing banks, put up the funds to underpin the Futures Exchange.[316]

More recently, in December 2013, a Korean CCP dipped into its guaranty fund after one of its members—a small broker-dealer—defaulted because of a trading

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311 To avoid this problem and allow a CCP to fail, BlackRock has recommended that the clearing mandate only apply to products cleared by two or more CCPs. *See* BLACKROCK, *supra* note 198.

312 BlackRock described the dilemma that market participants will face if a CCP fails: "[G]iven that the CCP's business is risk management, its failure is a failure of risk management of such proportion that market participants, especially those that are fiduciaries, are unlikely to put new risk positions on that would be cleared through a CCP attempting to recover, especially if there margin is at risk." *Id.*

313 Hills et al., *supra* note 62, at 129-30 (providing a helpful discussion of the causes of each CCP failure); MOODY'S INVESTORS SERVICE, *supra* note 210; *see also* GREGORY, *supra* note 59, at 267-70 (discussing historical CCP failures and near failures).

314 IMF, GLOBAL FINANCIAL STABILITY REPORT, *supra* note 30, at 18 (highlighting the role that failure to properly increase margin requirements played in the CCP failures).

315 *See* QUARRY ET AL., *supra* note 90, at 6.

316 Tucker, *supra* note 160, at 180.

error.[317] Sixty members, including JPMorgan, absorbed more than $40 million in losses by replenishing the guaranty fund.[318] To the displeasure of these members, the CCP had a default waterfall that provided for tapping the guaranty fund before the CCP bears any of the loss.[319] Even though the default happened during a period of relative calm, some members required a several month grace period to make their payments.[320] During a crisis, it is even more unlikely that members would be able to pay promptly. Problems at CCPs emerge quickly and come with a high price tag—precisely the scenario on which government bailouts are built.

III. A BETTER APPROACH TO MANAGING RISK

To achieve greater financial stability and serve markets effectively, the current top-down regulatory framework for OTC derivatives needs to be replaced with a regulatory approach that leaves decisions about clearing and the consequences of those decisions in the private sector. The new structure would not include clearing mandates or associated trading mandates. Provisions designating CCPs systemically important and providing them access to Federal Reserve backstops would likewise not be part of the new structure. The new regulatory structure would instead allow market participants to choose central clearing and substitute a principles-based regulatory approach for the current increasingly prescriptive approach to CCP regulation. A comprehensive reporting regime for cleared and uncleared swaps would ensure that firms and their regulators have better sight into where derivatives exposures are than they did in the last crisis.

A. Elimination of the Clearing Mandate

The first step toward enhancing financial stability is to eliminate the clearing mandate. Admittedly, doing so would be a stark departure from one of the core features of Dodd-Frank's derivatives framework. Nevertheless, it is necessary to ensure that the regulatory framework does not become the source of a future crisis. To effectively eliminate the mandate, capital, and margin incentives to clear, also need to be eliminated. The mandate, together with other regulatory nudges to clear, impedes market participants' ability to make choices. These market participants,

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317 Kanga Kong, *Trading Error Leaves Korean Broker Scrambling*, WALL ST. J. (Dec. 18, 2013), http://blogs.wsj.com/korearealtime/2013/12/18/trading-error-leaves-korean-broker-scrambling; Viren Vaghela, *Korea Clearing Structure in Question After HanMag Trading Error*, RISK.NET (Mar. 5, 2014), http://www.risk.net/asia-risk/feature/2331225/korea-clearing-structure-in-question-after-hanmag-trading-error; Yi Whan-woo, *HanMag Debacle Hits Brokerages*, KOREA TIMES (Dec. 17, 2013), http://koreatimes.co.kr/www/news/biz/2013/12/602_148108.html.

318 Vaghela, *supra* note 317.

319 *Id.*; Wetjen, *supra* note 273 ("The clearinghouse used a portion of its guaranty fund to cover the defaulter's losses, which resulted in clearing members losing some portion of their default-fund contributions; the clearinghouse itself did not suffer a loss because its skin in the game came after the non-defaulting members' contributions . . . . That losses occurred at all served as a wakeup call for firms who are members of multiple Central Counterparties (CCPs) around the globe.").

320 Vaghela, *supra* note 317 ("On January 20, most members of the exchange replenished the default fund with KRX offering some flexibility until March as a final deadline to make payment.").

who may be better informed than regulators and CCPs,[321] are well positioned to make choices consistent with strong risk management and customer needs. As Paul McBride points out, much can be done with "voluntary, rather than compulsory clearing, [which enables] market participants . . . to exercise discretion in order to strike the optimal balance between the costs and benefits of clearing."[322] Eliminating the mandate would also ease concerns that a failing CCP would lock up markets since market participants would be able to continue trading uncleared products without running afoul of a clearing mandate.

It is likely that CCPs would continue to clear many of the swaps that they currently clear and add new products to meet organic market demand for central clearing. Even before Dodd-Frank's clearing mandate was put in place, some OTC derivatives were being centrally cleared because of market interest in central clearing.[323] Affording market participants the ability to choose whether to clear would allow them to avoid risky CCPs and exercise leverage to improve the risk-management of poor CCPs. In contrast to the current model where, once a mandate is in place, CCPs have a government-granted privilege, a mandate-less model would give CCPs an incentive to earn customer business by managing risk well.[324]

The trading mandate, which was established by Dodd-Frank as a companion of the clearing mandate, should likewise be eliminated. As with clearing, market participants will choose to trade on established platforms based on a wide variety of considerations that they are best positioned to balance. The swap execution facilities called into life by Dodd-Frank would continue to exist, if they meet organic market demand.

B. Principles-Based Regulation

The elimination of the clearing mandate would not eliminate CCPs or the need for regulatory oversight. Primary responsibility for designing and running CCPs should remain with the CCP's owners and members. A prescriptive regulatory regime inappropriately shifts this responsibility to regulators by placing the full array of risk management decisions in their hands. CCPs therefore should be subject to a principles-based regulatory regime that allows CCPs broad discretion to operate within the principles in the manner that best suits the products they clear and the market participants they serve. Within this framework, they must have the room to

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[321] Pirrong, *Bill of Goods*, *supra* note 148, at 48 ("Dealers have a strong incentive to develop accurate models because the models enable the dealers to quantify and manage their market risk more effectively, price their derivatives more accurately and earn trading profits as a result, and evaluate the default risk posed by customers.").

[322] McBride, *supra* note 187, at 1121-22.

[323] Culp, *supra* note 29, at 103 (noting that CCPs started clearing OTC derivatives in the late 1990s); Randall S. Kroszner, *Central Counterparty Clearing: History, Innovation, and Regulation*, 30 ECON. PERSP. 37, 39 (2006).

[324] The notion that clearing members do not care about CCP risk is belied by the widespread industry concern about uncapped exposures to CCP risk. *See, e.g.*, Letter from Paul Saltzman to Jacob L. Lew, *supra* note 279 (remarking that The Clearing House Association "[c]ontinues to share the serious concerns raised by regulators regarding the need to address and mitigate systemic risks presented by all CCPs" and detailing concerns and recommendations for improved risk management). Involving clearing members in CCP risk management decisions is, therefore, important.

make swift changes to operational, technical, or risk management procedures as weaknesses emerge, risks are better understood, or available technology improves.

Even in the absence of a clearing mandate, the temptation to micromanage CCPs for the sake of financial stability is understandable, but unwise. Increasingly prescriptive regulation can have the perverse effect of frustrating effective and adaptive CCP risk management, dulling clearing member monitoring of CCPs, and homogenizing CCPs so that all are subject to similar vulnerabilities. As former Federal Reserve Governor Randall Kroszner explained, "more intense government regulation of CCPs may prove counterproductive if it creates moral hazard or impedes the ability of CCPs to develop new approaches to risk management."[325]

To allow CCPs discretion, core principles should be broad. Without prescribing particular approaches, they should require CCPs to have and disclose publicly policies governing topics including member obligations, the complete default waterfall, risk management, governance, resolution and recovery procedures, and margin methodologies. The CPSS/IOSCO risk management principles and other relevant principles can inform CCPs' compliance with the core principles.

As described above, the manner in which the SEC and CFTC oversee CCPs differs; the CFTC relies more heavily on self-certification by CCPs and the SEC takes a more active role in rule approvals.[326] Title VIII of Dodd-Frank partially eliminates this difference for designated CCPs by requiring that they get pre-approval for material changes to rules, procedures, and operations.[327] In addition, Dodd-Frank gives the Federal Reserve a consultative role with respect to such rule changes.[328] Regulators should have regulatory authority over CCPs, but their role should not consist of regulatory micromanagement of CCPs. Instead, CCPs would be allowed to self-certify rules as compliant with the relevant core principles.[329] Rule changes would have to be transparent and could be abrogated in the event the CCP's regulator, informed by public comment, found the rule to violate core principles.

Regulators could continue to monitor CCPs for improper practices. Professor Pirrong has called for regulators to be able to revise membership requirements if they "can show that they were adopted for anti-competitive reasons, or place an undue burden on competition not justified by any prudential benefit."[330] This principle makes sense applied more broadly to other CCP risk management and operational measures.

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325 Kroszner, *supra* note 323, at 37.

326 *See supra* Part I.A.

327 Dodd-Frank Act § 806(e) (codified at 12 U.S.C. § 5465(e) (2012)).

328 *Id.* § 806(e)(4) (codified at 12 U.S.C. § 5465(e)(4) (2012)).

329 DEP'T OF THE TREASURY, BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE 116 (2008), https://www.treasury.gov/press-center/press-releases/Documents/Blueprint.pdf ("Treasury also recommends that all clearing agency and market SROs, and other SROs as the SEC deems appropriate, be permitted by statute to self-certify all rulemakings (except those involving corporate listing and market conduct standards), which then become effective upon filing. The SEC should retain its right to abrogate the rulemakings at any time.").

330 Pirrong, *Economics of Central Clearing*, *supra* note 203, at 28-29.

To augment regulatory oversight of CCPs, CCPs could obtain private insurance[331] or issue systemic risk bonds. Either of these approaches would introduce supplemental outside monitoring for CCPs, in addition to the monitoring provided by regulators and members whose guaranty fund contributions are on the line and who are potentially subject to additional losses through, for example, supplemental assessments and variation margin gains haircutting.

C. Properly Aligned CCP Ownership and Governance

CCPs are most likely to serve the public interest of promoting financial stability if their ownership and governance structures correspond to economic interests. Randall Kroszner has explained that, "market forces can produce private regulations that address the concerns about safety, soundness, and broader financial stability."[332] As traditionally constructed, clearinghouses were a group of financial firms that pooled their risks, managed them jointly, and shared any losses. Risk management was an essential ingredient of such an arrangement.[333] CCP control restrictions of the sort contemplated by Dodd-Frank that would prohibit such an arrangement are ill-considered.[334] As a result of demutualization, today's CCPs tend to not to be member-owned; most CCPs are affiliated with an exchange.[335] Clearing members, however, continue to be the primary loss-bearers when they fail. Consequently, as

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[331] Some have proposed insurance to cover potential losses at the end of the default waterfall. *See, e.g.*, Matthew Leising, *Catastrophe Prevention Drives Pitch to Congress*, BLOOMBERG BUS. (Mar. 11, 2014), http://www.bloomberg.com/news/articles/2014-03-11/catastrophe-prevention-drives-insurance-pitch-to-clearinghouses (describing formation of an insurance consortium to offer insurance to clearinghouses).

[332] Kroszner, *supra* note 323, at 38.

[333] *See, e.g.*, IMF, GLOBAL FINANCIAL STABILITY REPORT, *supra* note 30, at 16 (noting that a race to the risk management bottom "will be counteracted provided that users, who bear the risk of each other's default, have a sufficient voice in governance and particularly if the CCP is user-owned"); Kroszner, *supra* note 323, at 38 ("The mutualization of risk creates incentives for all of the exchange's members to support the imposition of risk controls that limit the extent to which the trading activities of any individual member expose all of [the] other members to losses from defaults. Moreover, because members own the clearinghouse, they have the capability to act on their incentives for effective CCP risk management.").

[334] *See, e.g.*, Dodd-Frank Act § 726 (codified at 15 U.S.C. § 8323 (2012)) ("[The CFTC is permitted to] adopt rules which may include numerical limits on the control of, or the voting rights with respect to, any derivatives clearing organization that clears swaps . . . by a bank holding company . . . with total consolidated assets of $50,000,000,000 or more, a nonbank financial company . . . supervised by the Board, an affiliate of such a bank holding company or nonbank financial company, a swap dealer, major swap participant, or associated person of a swap dealer or major swap participant.").

[335] *See, e.g.*, Domanski et al., *supra* note 163, at 63 ("In 83% of the cases, CCPs are directly owned or managed by the company operating the stock exchange."); Douglas D. Evanoff, et al., *Policymakers, Researchers, and Practitioners Discuss the Role of Central Counterparties*, *in* THE ROLE OF CENTRAL COUNTERPARTIES 12 (2007), https://www.ecb.europa.eu/pub/pdf/other/rolecentralcounterparties200707en.pdf?2973e97f821d65505808bd2a9662560e (noting that, "[i]n the U.S., there has been a recent movement away from the traditional model of mutual ownership of exchanges and their clearing and settlement providers, toward a for-profit, stock ownership," which "could have a potential impact on the incentive structure and, possibly, the risk aversion of the organizations").

others have argued, clearing members must play a role in managing CCPs and designing them.[336] Regulations should accommodate and encourage active member involvement in CCP oversight.

Although the mutual ownership CCP model is attractive for financial stability reasons, the for-profit model that dominates the swaps landscape can work once the clearing mandate is eliminated. CCPs will no longer have an essentially guaranteed stream of business, which will give market participants more leverage to influence CCP risk management practices. Members will be reluctant to use a CCP that exposes them to large risk. Now the only option for clearing members concerned about poor CCP risk management is to cease trading products subject to clearing mandates.

The suggestion that members, whose money is on the line in the default fund, must play a central role in risk management, runs directly counter to the recommendations of others who worry about the undue control that dealers exercise in CCPs.[337] These commentators worry that, if permitted, large dealers will limit entry to CCPs and prevent them from accepting products for clearing in order to keep products in the more profitable bilateral market.[338] They call for ownership and governance restrictions of the sort permitted by Dodd-Frank and proposed by the SEC and CFTC.[339] They want to replace the voices of clearing members with those of public interest directors in risk management and other key committees.[340] Concerns about dealer control of the swaps market are not baseless, but risk

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[336] *See, e.g.*, Hills et al., *supra* note 62, at 130 (noting that if risk monitoring incentives are to be effective, "providers of the central counterparty's guarantee fund or other capital should also be its owners, or at least . . . management should be accountable to them in some way"); Kroszner, *supra* note 323, at 39 ("[G]overnance arrangements must provide those with 'skin in the game' with substantial influence over the CCP's risk controls."); Pirrong, *Economics of Central Clearing*, *supra* note 203, at 26 (arguing that "[t]hose who bear the counterparty risks assumed by a CCP should have the power to make decisions that affect the riskiness of the CCP, and the distribution of that risk"); Hal Scott, *The Reduction of Systemic Risk in the United States Financial System*, 33 HARV. J.L. & PUB. POL'Y 671, 701 (2010) (arguing against ownership and control restrictions that "[w]ould limit the ability of swap dealers and major swap participants, who are the parties with the greatest expertise in risk management, to exercise influence over the policies and operations of a clearinghouse").

[337] *See, e.g.*, Greenberger, *supra* note 52, at 245 (arguing for strong limits on the economic interests of swap dealers in CCPs).

[338] *See, e.g.*, Johnson, *supra* note 266, at 222-25 (arguing that large swap dealers have incentives to limit CCP membership and product eligibility).

[339] *See, e.g.*, Greenberger, *supra* note 52, at 245 ("[T]he CFTC should strengthen its proposed governance standards for DCOs in order to safeguard swap users' access to clearing against the possibility that the CFTC's participant eligibility requirements fail to increase DCO membership.") (footnote omitted); Johnson, *supra* note 258, at 239-40 (arguing for board monitor or observer to provide a link between CCP boards and regulators).

[340] *See, e.g.*, TURBEVILLE, *supra* note 79, at 13 ("At a minimum, the public's interest should be represented by membership on the risk committees of major clearinghouses. Regulatory representation, or representation by other public interest organization, would legitimize the process . . . ."); DOJ Comment Letter, *supra* note 264, at 7 (calling for one hundred percent independent directors on nominating committees and majority independent risk management and executive committees).

management will suffer if the people who bear the risks are not also able to determine how best to manage them. Regulatory principles should encourage the involvement of knowledgeable experts in CCP management and oversight.

Prohibitions against anticompetitive activity modeled on existing statutory prohibitions should suffice to prevent CCPs from being used for improper competitive purposes. For example, DCOs are prohibited from "adopt[ing] any rule or tak[ing] any action that results in any unreasonable restraint of trade; or impos[ing] any material anticompetitive burden . . . [u]nless necessary or appropriate to achieve the purposes of this chapter."[341] That language could be modified to enable regulators to abrogate CCP rules or other actions upon demonstrating that the action was being undertaken for anticompetitive reasons rather than bolstering the soundness of the CCP.[342] The task of identifying improper anticompetitive behavior is best left to the functional regulators, rather than to the realm of antitrust law.[343]

D. End Implicit and Explicit Promises of Bailouts

For the sake of financial stability, regulatory changes should be made to end bailout expectations. As Kroszner explains, "promises[s] of government financial support in the event of a risk-management failure" can "eviscerate[] . . . private-market discipline, which has served private and public interests in the stability of CCP arrangements so well for so long."[344] The government should eliminate explicit and implicit government guarantees on CCPs.

Central to eliminating government guarantees is ending the FSOC's power to designate systemically important financial market utilities under Title VIII of Dodd-Frank. The designation carries with it an implicit message that the government will not let designated entities fail. It also affords designated CCPs access to Federal Reserve accounts and services, which will enable the Federal Reserve to subtly prop up a failing CCP in a future crisis. All of these Title VIII provisions should be

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[341] 7 U.S.C. § 7a-1(c)(2)(N)(2012); *see also* 15 U.S.C. § 78q-1(b)(3)(I)((2013) ("The rules of the clearing agency do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of this title.").

[342] As noted earlier, Pirrong called for something similar with respect to membership measures. Pirrong, *Economics of Central Clearing*, *supra* note 203, at 28-29 (calling for regulators to be able to revise membership requirements if the regulators "can show that they were adopted for anti-competitive reasons, or place an undue burden on competition not justified by any prudential benefit").

[343] The Supreme Court's reasoning for not allowing an antitrust suit to proceed in *Credit Suisse v. Billing*, 551 U.S. 264 (2007), which related to initial public offering underwriter syndicates, seems applicable here:

> [T]he difficulty of drawing a complex, sinuous line separating securities-permitted from securities-forbidden conduct, the need for securities-related expertise to draw that line, the likelihood that litigating parties will depend upon the same evidence yet expect courts to draw different inferences from it, and the serious risk that antitrust courts will produce inconsistent results that, in turn, will overly deter syndicate practices important in the marketing of new issues.

Id. at 285.

[344] Kroszner, *supra* note 323, at 40.

eliminated. The provision of emergency liquidity to solvent CCP members can address temporary liquidity problems at a CCP.

The elimination of the clearing mandate also would help to send the message that the government is not a CCP guarantor. As long as the government requires market participants to use CCPs, market participants will anticipate a government bailout. Removing the mandate and other incentives to clear would undercut bailout expectations.

Finally, regulators should encourage private sector efforts involving CCPs and their members to define CCPs' default waterfalls clearly, realistically explore tail risks, and plan for recapitalization and resolution in the event of failure due to defaults or non-default problems (for example, operational issues).[345] At the core of all of these is a need to understand as well as possible what a CCP's worst-case exposures would be, although there will always be some measure of uncertainty around tail risk. Deciding how much of these potential exposures should be prefunded through initial margin and guaranty fund contributions is the next step. To the extent that some of the exposure remains unfunded, the CCP must map out a plan for covering it through member assessments, variation margin gains haircuts, or tear-ups. As scholar David Elliott points out, most CCPs have recognized that retaining unlimited authority to call for member cash contributions is not realistic because members might not pay in a timely fashion and regulatory constraints prevent clearing members from taking on uncapped risks.[346] Although current conversations about these issues have been spurred by the increase in clearing brought about by the clearing mandate, they are valuable in the absence of a mandate. Credible plans by CCPs to deal with failures in risk management or operational systems are a critical part of eliminating implicit expectations of government bailouts.

E. Regulatory Reporting Requirements

One of the concerns during the last crisis was that regulators did not have a good picture of the OTC derivatives market. Even market participants did not have a good view of their own exposures because of trade backlogs.[347] CCPs provide a discipline

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[345] For thoughtful discussions of these issues, see, for example, COMM. ON PAYMENTS & MKT. INFRASTRUCTURES & BD. OF THE INT'L ORG. OF SEC. COMM'NS, RECOVERY OF FINANCIAL MKT. INFRASTRUCTURES (2014), http://www.bis.org/cpmi/publ/d121.pdf (comments on the report are available at http://www.bis.org/cpmi/publ/comments/d109/overview.htm); Darrell Duffie, *Resolution of Failing Central Counterparties* (Stan. Graduate Sch. of Bus., Working Paper No. 3256, 2014), https://www.gsb.stanford.edu/gsb-cmis/gsb-cmis-download-auth/382301; ISDA, CCP LOSS ALLOCATION AT THE END OF THE WATERFALL (2013); JPMorgan Chase & Co., *What is the Resolution Plan for CCPs?*, PERSPECTIVES (Sept. 2014); LCH.CLEARNET, CCP RISK MANAGEMENT, RECOVERY & RESOLUTION (2014), http://www.lchclearnet.com/documents/731485/762448/316246_white_paper_05.12.14_v6.pdf/a3dd194e-68e1-4302-ba63-fc1e668ea7d5.

[346] Elliott, *supra* note 186. Elliott calls for pro rata haircuts on variation margin. *Id*. at 7. Alternatively, Elliott suggests that initial margin could be subject to haircutting or that the CCP could simply tear up contracts in order to return itself to a matched book. *Id*. at 8-9.

[347] *See, e.g.*, POLICY PERSPECTIVES ON OTC DERIVATIVES MARKET, *supra* note 76, at 2 ("In 2005, the exponential growth of the credit derivatives market had outpaced the capabilities of dealers' processing systems, leading to large backlogs of unconfirmed trades. These unconfirmed trades had potentially uncertain legal statuses, often for lengthy periods of time, and limited the ability of dealers to accurately determine their counterparty exposures . . . .").

that prevents the buildup of such backlogs,[348] but a reporting regime can do the same thing. A replacement regulatory regime should provide regulators the information they need to monitor the derivatives markets. In doing this, it will also ensure that market participants are keeping track of their exposures to CCPs and other counterparties.

Elements of Dodd-Frank's reporting regime achieve this objective. Under Dodd-Frank, market participants report swap transactions to a swap data repository (SDR) or to the SEC or CFTC.[349] The SDR collects and confirms trade details and stores trade data for regulators to access. SDRs[350] could be retained for these purposes. Transactions should be reported as soon as reasonably possible after they are entered into to avoid the build-up of backlogs of unconfirmed transactions and information should be kept current during and for some time after the swap contract's life. Dodd-Frank specifies which entities possess the reporting obligation, but under a new framework, this determination could be part of contractual negotiations. Given the institutional nature of swaps markets, it seems unnecessary for regulators to prescribe public reporting of swap transaction data.

Even if regulators have timely and comprehensive access to information about the OTC derivatives markets, policymakers should not assume that regulators will identify and preemptively solve emerging problems in those markets.[351] As with other areas, markets are more agile at gathering, analyzing, and reacting to information than regulators are, particularly if market participants bear the consequences of their own decisions. The recognition of regulators' limits underlies a regulatory framework that leaves risk management decisions and consequences with market participants.

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[348] *See, e.g.*, Ledrut & Upper, *supra* note 57, at 92 ("High access standards by CCPs can serve as a catalyst for improvements in back office processes.").

[349] *See, e.g.*, Dodd-Frank Act § 727 (codified at 7 U.S.C. § 2a(13)(G) (2012)) ("Each swap (whether cleared or uncleared) shall be reported to a registered swap data repository."); *id.* § 729 (codified at 7 U.S.C. § 6o-1(a)(1) (2012)) (allowing uncleared swaps to be reported to the CFTC) (Parallel provisions exist for security-based swaps.)

[350] Swap data repositories are defined in Dodd-Frank to mean "any person that collects and maintains information or records with respect to transactions or positions in, or the terms and conditions of, swaps entered into by third parties for the purpose of providing a centralized recordkeeping facility for swaps." Dodd-Frank Act § 721 (codified at 7 U.S.C. § 1a (48) (2012)). Entities that meet this definition *must* register with the CFTC. *Id.* § 728 (codified at 7 U.S.C. § 21 (2012)). SDRs should be able to choose whether to register, which would entitle them to serve as repositories to which swap transactions could be reported to meet regulatory requirements. Other SDRs might choose to serve non-regulatory audiences without registering.

[351] *See, e.g.*, Friedrich August von Hayek, Prize Lecture to the Memory of Alfred Nobel: The Pretence of Knowledge (Dec. 11, 1974), http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1974/hayek-lecture.html ("The recognition of the insuperable limits to his knowledge ought indeed to teach the student of society a lesson of humility which should guard him against becoming an accomplice in men's fatal striving to control society - a striving which makes him not only a tyrant over his fellows, but which may well make him the destroyer of a civilization which no brain has designed but which has grown from the free efforts of millions of individuals.").

CONCLUSION

In the exuberant wake of Dodd-Frank, few focused on the risks associated with CCPs. Now that some time has passed, regulators and other proponents of central clearing readily acknowledge that CCPs present difficulties and dangers. Nevertheless, advocates of central clearing have not paid adequate attention to the potential harmful consequences of the clearing mandate and the related regulatory structure.

The Dodd-Frank framework has given rise to a new set of risks by compromising the effectiveness of clearinghouse risk management, while simultaneously encouraging CCPs to embrace new risks. Regulators perceive—likely correctly—that they will be judged in part by how much of the OTC derivatives market is cleared. This perception colors their regulatory oversight and distracts them from focusing on risk. Prescriptive regulation displaces or distorts CCPs' own risk management initiatives. CCPs' risk management focus is further dulled by calls to dampen the influence of clearing members and incorporate independent decision-makers in their corporate boards. The preference given to cleared instruments has a secondary effect of making it more difficult for parties to manage risk outside CCPs and less likely to monitor one another. Moreover, as CCPs grow and change in response to government policy, expectations of a bailout deepen.

Rather than continuing down this road, policymakers should eliminate clearing mandates, the attendant prescriptive regulatory regime for CCPs, systemic designations of CCPs, and special Federal Reserve privileges for CCPs. A replacement regulatory framework should consist of a broad set of principles for CCPs, a reporting framework for cleared and uncleared swaps, a governance framework for CCPs that includes market participants whose money is on the line, and a clear delineation of default waterfalls and CCP recovery plans. A return to private ordering in the OTC derivatives space would diminish bailout expectations and allow market participants to benefit from central clearing where it makes sense, continue to use uncleared swaps where they best manage risk, monitor and manage both CCP and non-CCP risk effectively.

Political realities domestically and the shared international commitment to mandatory clearing may stand in the way of the proposed return to private ordering. If clearing mandates remain in place, policymakers can benefit from considering the concerns raised in this article about the risks associated with mandatory clearing and the associated regulatory structure. Regulators need to be keenly aware of the deleterious effect poor regulatory requirements can have on CCPs' risk management. Supervisors should apply clearing mandates carefully and only after a full consideration of the risks informed by adequate data. Policymakers should afford CCPs and their participants the regulatory flexibility necessary to manage risk effectively and should monitor CCPs closely. Regulators and market participants should continue to work together to understand how CCPs would perform under stressed scenarios and how losses from the default of one or more clearing members would be allocated. Relationships among CCP supervisors have been tense in recent years, but cooperation is critical. Regardless of whether the clearing mandate remains in place, CCPs will continue to play an important role in the financial system. Accordingly, efforts by regulators, market participants, and academics to better understand, manage, and monitor CCP risk, are well worth the commitment of resources, time, and attention.