THE SYSTEMIC RISK PARADOX: BANKS AND CLEARINGHOUSES UNDER REGULATION

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Consolidation in the financial industry threatens competition and increases systemic risk. Recently, banks have seen both high-profile mergers and spectacular failures, prompting a flurry of regulatory responses. Yet consolidation has not been as closely scrutinized for clearinghouses, which facilitate trading in securities and derivatives products. These nonbank intermediaries can be thought of as middlemen who collect deposits to ensure that each buyer and seller has the wherewithal to uphold its end of the deal. Clearinghouses mitigate the credit risks that buyers and sellers would face if they dealt directly with each other.

Yet here lies the dilemma: large clearinghouses reduce credit risk, but they heighten systemic risk since the collapse of one such entity threatens the entire financial system. While regulators have tackled the systemic risks posed by large banks, the systemic risks of these nonbank intermediaries have received less attention. In fact, financial reform has spurred clearinghouse growth and consolidation.

This Article examines the paradoxical treatment of regulators toward the systemic risks of clearinghouses and

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banks. It explores two fundamental questions: Why does the paradox exist, and who benefits from it? This Article borrows from antitrust to offer a framework for ensuring that the entities that control a large clearinghouse (large, heavily regulated banks) do not abuse that clearinghouse's market dominance.

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I. INTRODUCTION

Systemic risk—the risk posed to the entire financial system by the collapse of one major player[1]—has become a household term. The demise of a systemically significant investment bank, Lehman Brothers, marked the onset of the 2008 financial crisis.[2] Afterward, a $700 billion aid package to the financial sector highlighted the moral hazard of using public funds to bail out banks deemed too big to fail.[3] Well-attuned to both systemic risk and its corollary, moral hazard, financial regulators now possess additional tools to curb risk and wind down systemically significant banks on the verge of failure.[4]

Less well known are the systemic risks posed by clearinghouses and market-makers in the securities and derivatives industries. Like banks, these nonbank intermediaries facilitate financial transactions among counterparties. Stock exchanges, for example, provide

1 More precisely, systemic risk has been defined as "the risk that (i) an economic shock . . . triggers . . . either (X) the failure of a chain of markets or institutions or (Y) a chain of significant losses to financial institutions, (ii) resulting in increases in the cost of capital or decreases in its availability . . . ." Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 204 (2008).

2 *See* Fed. Deposit Ins. Corp., *The Orderly Liquidation of Lehman Brothers Holdings Inc. under the Dodd-Frank Act*, 5 FDIC Q., no. 2, 2011, at 31, 33 [hereinafter FDIC, *Lehman Brothers*].

3 Matt Erickson et al., *Tracking the 700 Billion Dollar Bailout*, N.Y. TIMES, http://projects.nytimes.com/creditcrisis/recipients/table (last visited Jan. 28, 2014).

4 For example, the Volcker Rule and Orderly Liquidation Authority (OLA) under Dodd-Frank represent two solutions currently en vogue. *See* Onnig H. Dombalagian, *The Expressive Synergies of the Volcker Rule*, 54 B.C. L. Rev. 469 (2013); Stephen J. Lubben, *Resolution, Orderly and Otherwise: B of A in OLA*, 81 U. CIN. L. REV. 485 (2012). However, debate rages on over whether Dodd-Frank will eradicate "too big to fail" ("TBTF"). *See Does the Dodd-Frank Act End "Too Big to Fail?": Hearing Before the Subcomm. on Fin. Insts. & Consumer Credit of the H. Comm. on Fin. Servs.*, 112th Cong. 67, 83 (2011) (statements of Michael H. Krimminger, Gen. Counsel, FDIC, and Stephen J. Lubben, Professor of Law, Seton Hall Univ. Sch. of Law).

platforms for prospective buyers and sellers of securities to view price quotations. Should a set of counterparties decide to buy and sell the same stock, then another intermediary, the clearinghouse, will facilitate payment by the buyer and delivery of stock by the seller.[5] As with banks, failure and consolidation have propelled exchanges and clearinghouses toward systemically significant size. In the last ten years, the storied New York Stock Exchange has undergone several incarnations by way of merger or acquisition.[6] In the clearing space, the National Securities Clearing Corporation (NSCC) dominates almost the entire securities market.[7]

Despite these similarities, the regulatory regime for large banks has generally not been deployed for large clearinghouses.[8] Part of this can be attributed to the view that clearing is an essential part of trading. As it navigated registration with the Securities and Exchange Commission

5 The three different back-office functions in support of trading are generally conflated as "clearing." These functions are (i) matching of orders, (ii) clearing, and (iii) settlement (effecting delivery or payment). For excellent summaries, see DERMOT TURING, CLEARING AND SETTLEMENT IN EUROPE §§ 1.2–1.14 (2012); John McPartland, *Clearing and Settlement Demystified*, CHICAGO FED LET. (Fed. Reserve Bank of Chicago, Chicago, IL), no. 210, 2005, at 1.

6 NYSE Euronext, the operator of the New York Stock Exchange, would have been sold in 2012 to the German exchange operator Deutsche Börse had European antitrust regulators not blocked the deal. NYSE Euronext is itself the product of a merger of the NYSE Group and Euronext. NYSE, *Timeline*, http://perma.cc/F4QL-4P3P (last visited Nov. 19, 2014). Now, NYSE Euronext will likely be acquired by the IntercontinentalExchange (ICE), best known for market making in the derivatives space. *See* Nathaniel Popper, *The Big Board, in One Big Gulp*, N.Y. TIMES, Jan. 20, 2013, at BU1.

7 The volume of trades handled by NSCC is mindboggling: in 2012, the average daily value of equities activity was $742.7 billion. *See* DTCC, *National Securities Clearing Corporation* (NSCC), http://perma.cc/7ZK3-BNXA (last visited Nov. 19, 2014). Yet, even this figure is far short of the size of the over-the-counter ("OTC") derivatives markets, roughly $700 trillion (notional value). Bank for Int'l Settlements, *Derivatives Statistics*, tbl. 19 (Sept. 14, 2014), http://perma.cc/877H-SL8C?type=pdf.

8 But *see infra* Section III.C.1, which discusses the designation of eight clearinghouses as systemically important and therefore eligible for liquidity assistance.

in 1976, the NSCC was described as a "public utility,"[9] a moniker that gave the entity a free pass to expand and monopolize.

Additionally, the very nature of clearinghouses ensures that they will be too big to fail ("TBTF") and, hence, that a resolution mechanism predicated upon eradicating TBTF is inapposite. A clearinghouse interposes itself between buyers and sellers of financial instruments to mitigate counterparty and credit risks. As the party in the middle, the clearinghouse extracts deposits from both seller and buyer so that the clearinghouse can fulfill the transaction should either party default.[10] Like all guarantors, the larger a clearinghouse is, the more liabilities it can ensure. Size begets liquidity, which in turn begets stability. Under the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank"), the clearinghouse has been given even greater prominence, charged with curtailing risk in the massive over-the-counter derivatives market.[11]

A paradox thus haunts our approach to systemic risk: while regulators try to eradicate systemic risk in banks, they must tolerate systemic risk in clearinghouses. Every major trading market today is dominated by a very small number of clearinghouses. The options market, for example, is served entirely by the Options Clearing Corporation. The credit default swaps market clears most of its trades through LCH.Clearnet. The fall of any such clearinghouse could bring down an entire industry. If banking and securities laws allow regulated entities to attain systemically significant sizes, then, in the aftermath of Lehman Brothers and the $700 billion bailout, it is worth asking whether those laws

9 *See* Bradford Nat'l Clearing Corp. v. SEC, 590 F.2d 1085, 1101 (D.C. Cir. 1978).

10 These deposits are called "margin." Margin consists of initial margin—what counterparties must come to the table with to trade—and variation margin—what counterparties must post from time to time, given fluctuations in their positions.

11 *See* 7 U.S.C. § 2(h) (2012); 15 U.S.C. § 78c-3(a)(1) (2012); 15 U.S.C. § 8302(d)(1) (2012). For perspectives on the size of the OTC derivatives market, see *supra* note 7 and text accompanying *infra* notes 78–80.

have adequately balanced the service performed by these institutions with their propensity to barrel toward bigness. Where financial regulations fail to so balance, we must look elsewhere for solutions.[12]

This Article recasts the story of clearinghouses as part of a larger narrative about regulatory (mis)management of systemic risk. It joins an emerging body of academic literature on clearinghouses that has grown steadily in the last half decade but nevertheless glossed over comparisons to banks. On the subject of clearinghouses, legal scholarship has lagged behind financial and economic scholarship. While financial modeling has coalesced around the theory that large clearinghouses confer greater benefits onto trading markets,[13] the legal academy has been slow to respond with

12 Most of the proposed solutions to TBTF clearinghouses have orbited around familiar corporate and banking principles. *See* Kristin N. Johnson, *Clearinghouse Governance: Moving Beyond Cosmetic Reform*, 77 BROOK. L. REV. 681, 682–84, 707–08 (2012) (corporate governance); Sean J. Griffith, *Governing Systemic Risk: Towards a Governance Structure for Derivatives Clearinghouses*, 61 EMORY L.J. 1153, 1156–57, 1240 (2012) (corporate governance); Kristin N. Johnson, *Clearinghouse Governance: Moving Beyond Cosmetic Reform*, 77 BROOK. L. REV. 681, 682–84, 707–08 (2012) (corporate governance); Jeremy C. Kress, *Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity*, 48 HARV. J. ON LEGIS. 49, 51, 77–78 (2011) (access to the Federal Reserve's emergency liquidity); Julia Lees Allen, Note, *Derivatives Clearinghouses and Systemic Risk: A Bankruptcy and Dodd-Frank Analysis*, 64 STAN. L. REV. 1079, 1106–07 (2012) (capital requirements and guaranty fund). There are, however, some outside-the-box suggestions. *See* Yesha Yadav, *The Problematic Case of Clearinghouses in Complex Markets*, 101 GEO. L.J. 387, 434 (2013) (proposing, among other things, engagement by clearinghouses with a broader constituency); Christine A. Varney, Assist. Att'y Gen., U.S. Dep't of Justice Antitrust Div., Comments before the U.S. Commodity Futures Trading Comm'n, Washington, D.C., at 4–5, 9 (Dec. 28, 2010) (arguing for ownership limits from the perspective of promoting competition); Yesha Yadav, *The Problematic Case of Clearinghouses in Complex Markets*, 101 GEO. L.J. 387, 434 (2013) (proposing, among other things, engagement by clearinghouses with a broader constituency).

13 For the benefits of netting efficiency from large clearinghouses that might clear across products, see Darrell Duffie & Haoxiang Zhu, *Does a*

regulatory frameworks that would incentivize consolidation while patrolling monopolization. This Article attempts to fill those gaps. It contributes to existing scholarship by (i) explaining the clearinghouse/bank paradox and (ii) adapting antitrust to sensibly harness the economies of scale of large clearinghouses.

By delving into comparisons, this Article shows that the aversion to bank systemic risk and tolerance of clearinghouse systemic risk is merely paradoxical on the surface. Banks and clearinghouses inhabit very different markets, and their core traits are also very different. Nonetheless, both institutions raise the specter of bailout—banks are built upon deposits that must be backed by the government, while clearinghouses are so integral to the financial system that their failure cannot be allowed.[14] However, current solutions to stave off TBTF in clearinghouses are halfhearted. Whereas a blueprint exists for intervening on behalf of systemically important banks during illiquidity and insolvency, the only clear plan of assistance to a systemically important clearinghouse is for a liquidity crisis. The impression created is one of ignorance or, worse, confusion on the part of regulators.

In exploring the interaction between regulation and the clearing markets, this Article sets up the possibility of borrowing from antitrust to resolve the quandary presented by large clearinghouses. Antitrust is adept at weighing size against an array of other considerations. Recently, scholars have used antitrust principles as proxies for stagnant banking paradigms—for instance, monopoly power as a proxy for TBTF and anti-tying rules as a proxy for checks on aggressive sales practices.[15] The next step would be to pair

Central Clearing Counterparty Reduce Counterparty Risk?, 1 REV. ASSET PRICING STUD. 74, 74, 76 (2011).

14 *See infra* Section III.A.

15 *See* Felix B. Chang, *Death to Credit as Leverage: Using the Bank Anti-Tying Provision to Curb Financial Risk*, 9 N.Y.U. J. L. & BUS. 851, 898–900 (2013); Sharon E. Foster, *Systemic Financial-Service Institutions and Monopoly Power*, 60 CATH. U. L. REV. 357, 359–60 (2011); For other innovative approaches of using antitrust to contain TBTF and systemic

antitrust and financial regulations to strike a more perfect balance between stability and competition, as well as between systemic risk and credit risk.

For now, though, financial regulators have discounted the anticompetitive effects of large clearinghouses. The unsung consequence of touting counterparty credit concerns above all else is that competition suffers as well. Competition suffers in both the *clearing* market and the market for *selling* the cleared instruments. This is because the entities that control a large clearinghouse (ironically, the big banks) can leverage their dominance in the clearing market to foreclose the dealer market. In two recent actions in Europe and the United States, access to clearinghouses was the lynchpin for suppression of competition in the sale of credit default swaps.[16] Clearinghouse research is therefore timely in illuminating a windfall to heavily regulated banks. Further, this research is timely because the next test of how antitrust laws apply to regulated industries might come as a challenge to the natural monopoly of clearinghouses.[17]

Part II of this Article illustrates how financial intermediaries have evolved into systemic significance. Part III dissects the contradictions posed by large banks and large clearinghouses. Part IV reveals the beneficiaries of large

risk, see Roberta S. Karmel, *Is the Public Utility Holding Company Act a Model for Breaking up the Banks that Are Too-Big-to-Fail?*, 62 HASTINGS L.J. 821, 844, 856–57 (2011) (using the Public Utility Holding Company Act to guide the organization of bank-holding companies); Jonathan R. Macey & James P. Holdcroft, Jr., *Failure Is an Option: An Ersatz-Antitrust Approach to Financial Regulation*, 120 YALE L.J. 1368, 1371 (2011) (limiting bank liabilities to 5% of the FDIC Deposit Insurance Fund).

16 *See* Press Release, European Comm'n, Antitrust: Commission Probes Credit Default Swaps Market (Apr. 29, 2011), *available at* http://perma.cc/V285-UZN5; Class Action Complaint, MF Global Capital LLC v. Bank of America Corp., No. 1:13-cv-05417, 2013 WL 7210066 (N.D. Ill. July 29, 2013). *See also* text accompanying *infra* notes 155–58 and 186.

17 On the murky balance between antitrust and regulation after *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, L.L.P.*, 540 U.S. 398 (2004), and *Credit Suisse Sec. (USA) L.L.C. v. Billing*, 551 U.S. 264 (2007), see Howard A. Shelanski, *The Case for Rebalancing Antitrust and Regulation*, 109 MICH. L. REV. 683, 684 (2011).

clearinghouses and considers how antitrust might complement clearinghouse regulation.

II. THE APPARENT PARADOX

Under Dodd-Frank, clearinghouses are a key circuit breaker for risk in the derivatives market. This section situates Dodd-Frank's derivatives clearing organizations (DCOs) within a broader context of nonbank intermediaries in the securities, options, and futures industries that have been allowed to consolidate and pre-empt competition. To draw a distinction, this section begins with commercial banks, investment banks, and hedge funds, whose systemic risks have at times provoked regulatory policy. This dichotomy, whose poles are marked by the DCO and the commercial bank, is the systemic risk paradox.

A. Commercial Banks, Investment Banks, and Hedge Funds[18]

The fear that banks might become TBTF—and, therefore, require a public bailout to save the economy—is not new.[19] In 1984, the Federal Deposit Insurance Corporation (FDIC) rescued Continental Illinois National Bank and Trust Company, then the country's seventh largest financial institution. Continental had lent aggressively and sunk $1 billion into nearly worthless oil and gas participations; the failure of those ventures led to an acute run on the bank.[20] Fearing a crisis to the financial system, the FDIC swooped in

18 This Article lumps commercial banks, investment banks, and hedge funds together. While investment banks and hedge funds are not as closely regulated as commercial banks, regulators have acknowledged and tried to mitigate their systemic risks.

19 The FDIC has noted that "too big to liquidate" might be more accurate than TBTF; large banks have failed in the past, but regulators sometimes felt that liquidation would not have contained systemic risk. *See* FED. DEPOSIT INSURANCE CORP., AN EXAMINATION OF THE BANKING CRISIS OF THE 1980S AND EARLY 1990S, Vol. I, at 249 (1997), *available at* http://perma.cc/8UFH-QDMZ.

20 *Id.* at 236–41. Prior to Washington Mutual's failure in 2008, Continental had been the biggest bank failure in U.S. history.

to purchase $4.5 billion in bad loans from the bank, acquire $1 billion in preferred stock, and guarantee protection for *all* of Continental's creditors.[21] Subsequently, Congress passed the Federal Deposit Insurance Corporation Improvement Act of 1991,[22] which limited the FDIC's ability to protect uninsured depositors—except in cases of "serious adverse effects on economic conditions or financial stability."[23] This exception effectively codified the TBTF doctrine.

While regulatory attention was directed toward the risks posed by large commercial banks, the collapse of the hedge fund Long-Term Capital Management ("LTCM") in 1998 showed that nonbank financial entities could also pose risks to the economy.[24] LTCM was a hedge fund that made bets on interest rate spreads.[25] The fund's earlier success had caused its managers and traders, in ever-greater bouts of hubris, to pursue increasingly leveraged positions through derivatives products.[26] When the Russian government in August 1998 devalued the *ruble*, cavernous gaps opened between the yields of U.S. Treasury securities and other debt instruments, as well as in credit spreads across the world.[27] LTCM suffered catastrophic losses, compounded by its leveraged positions. Its management attempted but failed to

21 *Id.* at 244. This last tactic was the most controversial. FDIC insurance had protected deposits up to $100,000; with the Continental bailout, however, the FDIC promised to protect even uninsured depositors and creditors.

22 Federal Deposit Insurance Corporation Act of 1991, Pub. L. No. 102-242, 105 Stat. 2282 (codified at 12 U.S.C. § 1823 (2012)).

23 *See id.* § 1823(c)(4)(G) (2012); Paul L. Lee, *The Dodd-Frank Act Orderly Liquidation Authority: A Preliminary Analysis and Critique—Part I*, 128 BANKING L.J. 771, 773 (2011); Arthur E. Wilmarth, Jr., *Too Big to Fail, Too Few to Serve? The Potential Risks of Nationwide Banks*, 77 IOWA L. REV. 957, 996 (1992).

24 *Hedge Fund Operations: Hearing Before the H. Comm. on Banking and Fin. Servs.*, 105th Cong. 141, at 16 (1998) (statement of William J. McDonough, President, Fed. Reserve Bank of N.Y.), *available at* http://perma.cc/U24X-BX2C [hereinafter *Hedge Fund Operations*].

25 *Id.* at 16–17.

26 *Id.* at 17.

27 *Id.*

negotiate a buyout by investment banks. The Federal Reserve Bank of New York stepped in and orchestrated a $3.75 billion bailout.

LTCM illustrates another theme about systemic risk: while size can render a financial institution systemically significant, so too can the breadth of its interconnectivity with other players. LTCM was linked to numerous counterparties in the equity and debt markets; its default would have caused its top seventeen counterparties to close out their positions, to $3–5 billion in losses.[28] As is common in derivatives transactions, those counterparties would have "back-to-backed" their positions with LTCM by buying offsetting swaps with additional counterparties, who would have suffered losses as well.[29] The ensuing blow to investor confidence would have led to a massive exodus from the equity markets, further widening credit spreads and causing liquidation of positions.[30] Hence, the Federal Reserve stepped in.

The similarities between LTCM and the investment bank Lehman Brothers (Lehman) are uncanny: the coincidence of highly leveraged investments (through derivatives) and the widening of worldwide credit spreads brought down LTCM, just as the combination of leverage and a mortgage downturn felled Lehman. And just as Lehman's leverage began to endanger the investment bank in 2008—almost 10 years to the day of LTCM's woes—the investment bank too failed to negotiate a rescue by Warren Buffet (also a potential suitor to LTCM in 1998) and a consortium of other banks. The

28 PRESIDENT'S WORKING GRP. ON FIN. MKTS., HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG-TERM CAPITAL MANAGEMENT 17–22 (1999).

29 *See Hedge Fund Operations*, *supra* note 24, at 19. ("[I]n the rush of Long-Term Capital's counterparties to close out their positions, other market participants, investors who had no dealings with Long-Term Capital, would have been affected as well."). Regulators might have allowed LTCM's counterparties to suffer the losses as penance for transacting with the wrong entity, but losses to the counterparties of those counterparties would have been less justifiable.

30 *Id.*

primary difference, though, was that Lehman failed to close the deal on a rescue, with catastrophic effects. Lehman Brothers Holdings, Inc.'s bankruptcy filing allowed for unwinding, at heavy penalties, of its subsidiaries' derivative positions.[31] Consequently, $468 million in assets which one subsidiary had pledged as collateral was seized; those assets were comprised of customer accounts from other relationships, but the customers had little recourse.[32] As contagion spread to other Lehman customers and counterparties, the global economic and financial crisis of 2008 was born.

Today, the solutions that regulators devised to stave off future failures of Lehman's magnitude reside in Dodd-Frank's Title I and Title II. Title I establishes the Financial Stability Oversight Council, which has the power to designate systemically important financial institutions (SIFIs) for comprehensive federal regulation and heightened prudential standards.[33] The definition of a SIFI is broad enough to bring the three institutions considered in this Section—commercial banks, investment banks, and hedge funds—into the regulatory fold. SIFIs encompass (i) bank holding companies with total consolidated assets of at least $50 billion[34] and (ii) nonbanks whose "material financial distress" or "nature, scope, size, scale, concentration, interconnectedness, or mix of . . . activities . . . could pose a threat to the stability of the United States."[35]

31 *See* FDIC, *Lehman Brothers*, *supra* note 2, at 33.

32 *Id.* at 34.

33 Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 111, 124 Stat. 1376, 1392–93 (2010) (codified at 12 U.S.C. § 5321 (2012)).

34 *Id.* § 5365(a).

35 *Id.* § 5323(a). The SIFI designation is potentially broad enough to capture hedge funds, which have traditionally evaded federal regulation, and investment banks. *See* Annie Lowrey, *Regulators Move Closer to Oversight of Nonbanks*, N.Y. TIMES, Apr. 4, 2012, at B3. During the financial crisis, however, numerous investment banks either folded (Lehman Brothers) or reorganized as highly regulated bank holding companies (Goldman Sachs and Morgan Stanley).

Title I requires SIFIs to provide and regularly update a blueprint (the so-called "living will") for resolving the entity in a pinch.[36] Meanwhile, Title II constructs the framework for the liquidation of systemically important financial institutions. Commonly known as "Orderly Liquidation Authority" ("OLA"), Title II replicates the resolution process of the FDIC for troubled banks.[37] The interplay of OLA and the living will is meant to provide a resolution plan so that if an institution does fail, the resolution process is steered away from bankruptcy courts and into the hands of the FDIC, which has the expertise to execute that plan. [38]

Regulators and academics have also proposed innovative ways of curtailing systemic risk among banks even before they fail. Chief among them is the Volcker Rule, which prohibits deposit-taking banks from engaging in proprietary trading (i.e., trading in the bank's own account, rather than on behalf of customers) and from owning hedge funds and private equity vehicles.[39] Conceived by former Federal Reserve Chairman Paul Volcker, the rule was designed to bar banks from making speculative investments. It was adopted by Dodd-Frank and, after much fanfare, implemented three years later. Another approach, not enshrined in regulation, would tackle bank systemic risk by setting thresholds on their aggregate liabilities—for example, at a percentage of the FDIC Insurance Fund.[40] This follows on the heels of other quasi-antitrust solutions to systemic risk, such as using anti-monopoly laws to prevent banks from becoming too large or dominant or using the

36 *See* 12 U.S.C. § 5365(d)(1) (2012).

37 *Id.* § 5390. *See also* FDIC, *Lehman Brothers*, *supra* note 2, at 35.

38 In practice, the resolution of a gargantuan financial entity is complex. A large bank such as Bank of America is a far cry from the smaller operations that the FDIC normally sees. Further, the lesson from the failure of Lehman Brothers is that no politician would take the chance of letting a large financial entity fail and wind its way through the FDIC receivership process. As an oft-repeated critique goes, Dodd-Frank has not ended TBTF. *See* Stephen J. Lubben, *supra* note 4, at 510–15.

39 12 U.S.C. § 1851 (2012).

40 *See* Macey & Holdcroft, *supra* note 15, at 1371.

Public Utility Holding Company Act to streamline financial corporate structures.[41]

In conjunction, the ex ante limitations and the ex post resolution mechanisms are grounded in two philosophies—either force banks to spin off risk or denominate an upward limit on size and complexity. Both approaches are predicated upon heightened regulation so as to diffuse systemic risk and end TBTF.

B. Market-Makers and Clearinghouses

Similar to banks, intermediaries in the securities and derivatives markets have consolidated their way into systemic significance.[42] This Subpart explores how regulation has handled the growth of the most systemically significant institutions that support securities and derivatives trading: clearinghouses.

Most securities and some derivatives are traded on exchanges—intermediaries which create an open, transparent market in which buyers and sellers can view pricing and enter into transactions. Exchanges are *not* the same as clearinghouses: exchanges create a marketplace that brings together buyers and sellers[43] while clearinghouses ensure the fulfillment of payment and delivery obligations. Together, exchanges and clearinghouses

41 *See* Foster, *supra* note 15, at 359, 402; Karmel, *supra* note 15, at 827–28.

42 Derivatives are financial instruments whose values fluctuate on the basis of other variables, such as interest rates, stock prices, or commodity values. Options, futures, and swaps are three types of derivatives. *See* Norman Menachem Feder, *Deconstructing Over-the-Counter Derivatives*, 2002 COLUM. BUS. L. REV. 677, 681–83 (2002).

43 The Securities Exchange Act of 1934, for example, defines an exchange as an entity which, *inter alia*, provides a "market place or facilities" to bring together buyers and sellers of securities. Securities Exchange Act of 1934 §3(a)(1), 15 U.S.C. §78c(a)(1) (2012). *See also* Andreas M. Fleckner, *Stock Exchanges at the Crossroads*, 74 FORDHAM L. REV. 2541, 2545–50 (2006) (detailing the functions of stock exchanges, such as market-making and information distribution).

take buyers and sellers from the initial matchmaking process to the transfer of payment and product.

Exchanges and clearinghouses are integrated in different ways, depending on the market. In the securities and exchange-traded options markets, one central clearinghouse serves all exchanges—a model known as "horizontal integration."[44] By contrast, the exchange-traded futures market is characterized by "vertical integration," in which each exchange owns an exclusive clearinghouse.[45] Each model carries its unique implications on competition and systemic risk.

Most derivatives products, however, are sold "over-the-counter" ("OTC"). OTC derivatives are not traded over exchanges but, rather, are customized between counterparties. Avoidance of exchanges keeps the pricing and terms of these instruments—as well as the size and breadth of the OTC market—opaque. Prior to Dodd-Frank, transactions in OTC derivatives were cleared and settled on a bilateral basis, without the participation of a clearinghouse. Since Dodd-Frank, DCOs have emerged as the panacea for counterparty and credit risk, with the mandate to clear trades in most derivatives transactions.

This Subpart begins with the clearing architecture in the securities and exchange-traded options and futures markets, which benefit from the transparent market-making process of exchanges. This Subpart then discusses the DCO, an intermediary that has been charged with financial reform but is beginning to draw attention for its own systemic risks.

1. Securities Exchanges and Clearinghouses

The literature on securities exchanges and clearinghouses is voluminous,[46] so I will not replicate it here. However, a

44 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, 313–14 (2010).

45 *Id.* at 313.

46 On exchanges, see, for example, William F. Baxter, *NYSE Fixed Commission Rates: A Private Cartel Goes Public*, 22 STAN. L. REV. 675,

quick primer on how these two institutions function in the securities market would be useful. Beyond this primer, I will only highlight three points, whose significance will become apparent when we examine the clearing architecture for derivatives.

Suppose that an investor ("Investor") wants to buy 1000 shares of stock in the oil giant Exxon Mobile, and a pension fund ("Pension Fund") wants to sell the same amount of stock from its portfolio. The New York Stock Exchange ("NYSE"), on which Exxon Mobile's stock is listed, will quote the prices at which the stock can be bought and sold. Suppose, then, that Investor and Pension Fund fill buy and sell orders with their brokers. Investor and Pension Fund will receive trade confirmations, and if all goes well, this is the last they will see of the transaction—everything else happens at the back-office level. Behind the scenes, agents of the NSCC—the clearinghouse for the NYSE—compare the buy and sell orders to ensure that they match. Then, NSCC settles the trade by disbursing payment to Pension Fund and facilitating delivery of the Exxon Mobile shares. This last step is done electronically by the Depository Trust Company ("DTC"), which notes on its records that ownership of the stock has gone from Pension Fund (or Pension Fund's broker) to Investor (or Investor's broker).[47] DTC is the largest securities depository in the world, holding $37.2 trillion worth of certificates from 131 countries and territories.[48] DTC and NSCC are sister companies, both owned by the Depository Trust & Clearing Corporation.[49]

675–76 (1970); Craig Pirrong, *A Theory of Financial Exchange Organization*, 43 J.L. & ECON. 437, 437 (2000); Fleckner, *supra* note 43, at 2543–45. On clearinghouses, see Ben S. Bernanke, *Clearing and Settlement During the Crash*, 3 REV. FIN. STUD. 133, 133 (1990) [hereinafter Bernanke, *Clearing and Settlement During the Crash*]; Yadav, *supra* note 12, at 387.

47 DTC doesn't typically name beneficial owners but notes instead that shares are held in street name with the beneficial broker-dealer or bank.

48 *Depository Trust Company (DTC)*, DEPOSITORY TR. & CLEARING CORP., http://perma.cc/SL2S-XTHQ (last visited Nov. 19, 2014).

49 *Id.*

NSCC is integrated horizontally into the securities market—that is, NSCC clears and settles for a variety of exchanges, including NYSE and the American Stock Exchange ("AMEX"), rather than being tethered to any one exchange. It was not always this way; for many decades, the securities world resembled the futures world, where each exchange has its own exclusive clearinghouse. Three points along the evolution toward centralized clearing are noteworthy.

First, and most ironically, it was concerns over systemic risk that led to the creation of a systemically significant clearinghouse in NSCC. Prior to 1976, there were three major clearinghouses—one each for the NYSE, AMEX, and the National Association of Securities Dealers (NASD)—and a handful of smaller clearinghouses serving regional exchanges.[50] In those days, brokerages' back-office operations processed securities transactions on paper. With the swell of securities trading in the 1960s, back offices became so overworked that they had to close down regularly to catch up. Errors were rife; buyers would often not receive securities, and sellers would often not receive payment. This "paperwork crisis" caused the SEC to issue paperwork standards for securities transactions. Congress subsequently commissioned a study, which concluded that the industry needed a national clearing system.[51]

The second notable point is that the systemically significant NSCC was born with the blessing—and open encouragement—of regulation. Congress, the SEC, and industry were concerned about the risks posed by errors and delays in transaction processing. Those risks were real and pervasive; a modest backlog could shut down brokerages for days, while a severe backlog could bring the industry to its knees. Yet at the time, the understanding of systemic risk revolved solely around *processing* and did not encompass risks to the industry from the failure of one or more major

[50] Wolkoff & Werner, *supra* note 44, at 321.

[51] Wolkoff & Werner, *supra* note 44, at 319.

players.[52] It did not, in other words, cohere with what we have now come to associate with systemic risk—size. Thus, when the SEC heeded Congressional mandate and responded with a set of amendments to the Securities Exchange Act in 1975 (the "1975 Amendments"), the Commission paved the way for the establishment of a giant clearinghouse. Under the 1975 Amendments, all clearinghouses had to register with the SEC. In late 1975, the three major clearinghouses merged, and in March 1976, the surviving entity, NSCC, secured SEC registration—with the agency expressing very few reservations about anticompetitive effect and no comment at all about systemic risk. Whereas the SEC had set out to unify the securities clearing system, the agency ended up creating the most dominant player that the clearing industry had ever seen.

Third, and ancillary to the second point, permissiveness toward NSCC evoked a longstanding capitulation to natural monopoly. Regulatory tolerance of dominant enterprises commonly occurs where production is most efficient when concentrated in a single firm.[53] Examples include telecommunications, electricity generation and delivery, and transportation; in these industries, monopolies are allowed to survive, with government oversight, because of the high startup costs faced by competitors and benefits conferred to the public. And indeed, NSCC has been compared to a *public utility*, a common solution for natural monopoly. Both the SEC release that announced the registration of NSCC and the D.C. Circuit opinion that reviewed a challenge to that registration by a competitor of NSCC used the language of

[52] For example, when pressure mounted in 1988 to revise UCC Article 8, which deals with the rights of securities intermediaries, part of the rationale was grounded in the mitigation of systemic risk. *See* Francis J. Facciolo, *Father Knows Best: Revised Article 8 and the Individual Investor*, 27 FLA. ST. U. L. REV. 615, 624 (2000). The fear was that without the finality in the transfer of securities conveyed in a more robust Article 8, the industry would suffer from uncertainty.

[53] *See infra* Section IV.A.

public utility to justify NSCC's dominance.[54] As the D.C. Circuit succinctly stated, "NSCC is essentially a public utility that is afforded a monopoly . . . ."[55]

2. Options Exchanges and Clearinghouses

Now suppose that Investor wants to sell an option in 1000 shares of Exxon Mobile stock. The stock might be hovering around $45/share today, but Investor predicts that the company's stock will jump to $60/share in six months. On that prediction, Investor wishes to sell its options at a price of $60/share (known as the "strike" price). Investor might fill an order for a put option with the Chicago Board Options Exchange (CBOE), on which options in Exxon Mobile stock are traded. Suppose, further, that five months from now, the price of Exxon Mobile stock jumps to $70/share, and Pension Fund would like to buy 1000 shares; however, Pension Fund would only do so if the price of the stock were to dip to $60/share. Consequently, Pension Fund fills an order with the CBOE for a call option in 1000 shares of Exxon Mobile stock. If, within a month, the price falls to $60/share (the strike price), Investor and Pension Fund have the right to execute their put and call orders, respectively. If they do, then generally the same clearing process ensues—except that this time, the clearinghouse is the Options Clearing Corporation ("OCC").[56]

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54 *See* Bradford Nat'l Clearing Corp. v. SEC, 590 F.2d 1085, 1101 (D.C. Cir. 1978); In the Matter of the Application of the National Securities Clearing Corporation for Registration as a Clearing Agency, Securities Exchange Act Release No. 13163, n.198, 11 SEC Docket 1448, 1483 (Jan. 13, 1977) ("Moreover, even in the absence of a determination that clearing and settlement operations are a natural monopoly, the Commission recognizes that at a future date new developments in clearing and settlement operations may warrant the performance of all or discreet portions of those operations by a single, cooperative organization.").

55 *Bradford*, 590 F.2d at 1101.

56 One difference between the securities and derivatives clearing process, however, is that a trade stays open with a derivatives clearinghouse for a much longer period.

The development of the OCC reads like a compressed timeline of NSCC. In 1973, the CBOE formed as the first exchange serving the options market. Prior to that, options, like most derivatives today, had been traded over-the-counter through customization by each set of counterparties.[57] After registration with the SEC, the CBOE formed a captive clearinghouse, the CBOE Clearing Corporation.[58] This duo spurred a dramatic rise in options trading.[59] The existence of an exchange streamlined and standardized all the varieties of options so that they could be traded on an open market. Concomitantly, the existence of a clearinghouse meant that trades in CBOE options could now be guaranteed. When AMEX and the Philadelphia Stock Exchange saw the size of the market that the CBOE Clearing Corporation commanded, they approached the SEC about launching their own options exchanges. In response, the SEC pushed for the creation of a central clearing entity for the options market. This became CBOE Clearing Corporation, which was spun off from CBOE in 1975 and renamed the Options Clearing Corporation.

During the financial crisis, OCC expressed a desire to access the Federal Reserve's emergency liquidity funding. As the lender of last resort, the Fed can infuse troubled banks with cash through its "Discount Window."[60] Though it was not a bank, OCC had requested access to the discount window when tight liquidity in the financial markets created a possibility that one of its members might fail to meet a margin call.[61] Had that happened, OCC might not have had enough liquidity itself to distribute funds owed to other members. While OCC never had to tap the Discount Window,

57 Wolkoff & Werner, *supra* note 44, at 339–42.

58 *Timeline*, OPTIONS CLEARING CORP., http://perma.cc/KN6T-BXR6 (last visited Nov. 19, 2014).

59 Wolkoff & Werner, *supra* note 44, at 341.

60 FEDERAL RESERVE DISCOUNT WINDOW, http://perma.cc/TKA9-GS6U (last visited Jan. 30, 2014).

61 Nina Mehta, *Options Clearinghouse Lobbies for Access to Fed Funding During Emergencies*, BLOOMBERG NEWS, June 23, 2010, http://perma.cc/9R8T-DMRF; Kress, *supra* note 12, at 50.

twenty years earlier the Fed *did* have to step in to backstop OCC's insufficient capital buffer in the face of the stock market crash of October 1987. The Fed offered emergency liquidity to banks, which were then encouraged to lend to keep OCC afloat.[62]

OCC's near misses in 1987 and 2008 illustrate the centrality of the clearinghouse to the options market. OCC is so central, in fact, that the government would likely come to a failing OCC's side to protect the financial system. Thus, the fragility of a horizontally integrated clearinghouse lies in its exposure to a wide universe of members. As we will explore below, having an entire industry clear through one giant grid might temper credit risks within the industry, but it exacerbates both the grid's significance and the carnage if it fails.

3. Futures Exchanges and Clearinghouses

Unlike an option, which grants buyer and seller the *right* to perform, a futures contract *requires* the counterparties to perform on the delivery date if the strike price is met. Thus, if Pension Fund and Investor had executed a futures contract on Exxon Mobile stock, they would have had to perform.

For our purposes, the more important difference between options and futures lies in how they are cleared and settled. Unlike the centralized OCC or NSCC, futures clearinghouses are vertically integrated—each clearinghouse is owned by an exchange.[63] Today, nine futures clearinghouses serve thirteen futures exchanges,[64] a scheme which resembles

[62] *See* Yadav, *supra* note 12, at n.116 and accompanying text; Bernanke, *Clearing and Settlement During the Crash*, *supra* note 46, at 146–50. *See also* U.S. SECURITIES & EXCHANGE COMMISSION, THE OCTOBER 1987 MARKET BREAK (1988). Coincidentally, this was also when the FDIC stepped in to help Continental Illinois.

[63] *See* Wolkoff & Werner, *supra* note 44, at 313; Bernanke, *Clearing and Settlement During the Crash*, *supra* note 46, at 135.

[64] By contrast, one clearinghouse, the OCC, serves five options exchanges, and three clearinghouses, with NSCC being dominant, serve six stock exchanges. Bernanke, *Clearing and Settlement During the Crash*, *supra* note 46, at 135.

securities clearance and settlement prior to 1975. It is an antiquated system, little changed since the founding of the Chicago Board of Trade's Clearing Corporation in 1925.

Vertical integration of futures clearinghouses has drawn criticism for its anticompetitive effects. Because each clearinghouse clears only the products sold on its parent exchange, an exchange that currently dominates the market in one type of future is allowed to maintain that dominance through its control of clearance and settlement. For instance, the Chicago Mercantile Exchange (CME) commands nearly 100% of the dealer market for the 10-year Treasury note future.[65] If another exchange were to offer the same future, it would have to clear trades in the product elsewhere, since CME Clearing does not clear non-CME products. Even assuming that the upstart exchange forms its own clearinghouse, it would face an uphill battle wooing customers away from CME. This is because, as noted above, size begets liquidity. With its decades-long head start, CME Clearing would have cornered the lion's share of trading in 10-year Treasury note futures. With more contracts, CME Clearing would have access to greater margin and be in a better position to offset the liabilities of its out-of-the-money members and distribute funds to its in-the-money members. As the Department of Justice noted, the invention of a novel financial future is usually followed by a brief period of intense competition among exchanges; then one exchange emerges with most of the liquidity, and its competitors exit the market.[66]

Vertical integration and proprietary clearing are beset by a different set of problems than those of horizontal integration and open clearing. The fragility of the futures clearing model lies not with its vulnerability to systemic risk but, rather, with the threats it poses to competition.[67] It is

65 U.S. DEP'T OF JUSTICE, TREAS-DO-2007-0018, REVIEW OF THE REGULATORY STRUCTURE ASSOCIATED WITH FINANCIAL INSTITUTIONS, COMMENTS BEFORE THE DEP'T OF THE TREASURY 10 (2008).

66 *Id. See also Back to the futures?*, ECONOMIST, Feb. 4, 2013.

67 Granted, captive clearing means that the fate of a clearinghouse is linked to its parent exchange. If the exchange goes down, so too does the

the risk that an exchange can use its captive clearinghouse to foreclose the entry of the exchange's competitors into the market-making function. In antitrust terms, it is the problem of leverage. In *Bradford v. SEC*, where the D.C. Circuit heard a challenge to the registration of NSCC, leverage was at the heart of the plaintiff's claims that the three dominant stock exchanges would utilize the clearinghouse to stifle competition from the smaller, regional stock exchanges. Decades later, the Justice Department showed that leverage is real, not hypothetical.[68]

If futures clearinghouses were to openly clear trades regardless of the exchange of origination, several benefits would follow. A product could be offered on multiple exchanges, resulting in ease of trading and reduction of trading costs.[69] The few examples we have of head-to-head competition between futures exchanges have shown that when dominant exchanges are challenged, trading fees will decline, technological innovations ensue, and products choices expand.[70] These are all familiar consequences from the lifting of restraints on trade.

Of course, these benefits would have to contend with systemic risk. From the precedents of NSCC and OCC in the securities and options industries, the open clearing environment might foster the growth of a dominant clearinghouse (tolerated by regulation) exposed to a broad universe of counterparties. The dilemma of Dodd-Frank's

clearinghouse. Yet given the fractured futures market, each clearinghouse tends not to be as broadly exposed.

68 *See* U.S. Dep't of Justice, *supra* note 65, at 10–16. Leverage hurts consumers, not just competitors. By cutting off the entry of competitors, the dominant exchanges remain dominant, and they also ossify. Market-makers have no incentive to innovate and continue to carry on in antiquated systems because nothing more is needed to charge monopoly rents.

69 Traders could open a position on one exchange and then close it on another. Additionally, clearinghouses could net positions on one clearinghouse against positions on another, resulting in a larger pool of liquidity, lower margin requirements, and savings to counterparties. *See* U.S. Dep't of Justice, *supra* note 65, at 6–7.

70 *Id.* at 10–16.

open-access clearing mandate for DCOs is where to strike that balance between openness and risk.[71]

4. Derivatives Clearing Organizations

Among the many demarcations that cut through the derivatives world, the most significant is that which separates exchange-traded from over-the-counter derivatives. Examples of OTC derivatives include interest rate and credit default swaps. These products were castigated for their role in the financial crisis, for reasons as diverse as exposing a web of counterparties to credit risk and amplifying the effects of default on otherwise straightforward mortgage securities. To mitigate future havoc, Title VII of Dodd-Frank mandates the clearance and settlement of trading in these products through derivatives clearing organizations. Today, the clearance of OTC derivatives resembles that of exchange-traded derivatives—only without the presence of exchanges to make a market.

As an illustration, let us return to our hypothetical Investor. Assume that Investor takes out a loan at a variable interest rate. Investor does not like the unpredictability of variable rates, so Investor might buy an interest rate swap from a bank ("Bank"). Under the swap, Investor would pay Bank a fixed interest rate while Bank pays Investor a variable rate. When a clearinghouse is interposed into this exchange of payments, the positions of Investor and Bank are *novated* to a DCO—that is, the DCO becomes swap buyer to Bank and swap seller to Investor. If Investor is in-the-money vis-à-vis Bank, DCO will disburse funds to Investor.[72] If Bank is in-the-money vis-à-vis Investor, then DCO disburses funds to Bank.

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[71] *See* 7 U.S.C. § 7A-1(c)(2)(C) (2012); *infra* Section IV.B.2.

[72] This assumes that Investor does not have a derivative transaction with another party that clears through DCO against which can be netted. This ability to net out positions is a powerful tool—it reduces the need to exchange cash flows.

The benefits of DCOs are three-fold. First, they can more effectively net positions than bilateral markets.[73] A clearinghouse is comprised of, and governed by, members who have met certain capitalization and risk management requirements. These members novate their trades in qualifying instruments to the clearinghouse. As the party in the middle, the clearinghouse can quickly see how the positions of its members offset each other. The second benefit of clearinghouses, which is related to their netting capacity, is that their birds-eye view allows them to better assess collateral requirements.[74] Because the DCO has numerous positions to offset, the margin that members have to post to maintain their positions will likely be lower than with bilateral clearing. This lowers trading costs for members. Finally, the design of DCOs allows them to mutualize, or spread, large losses among their broad membership.[75] If one member cannot honor its obligations in a trade, the member's losses are first borne by its margin. If the margin is insufficient, then the DCO can tap a default fund, which all members pay into as a condition of membership.[76] Spreading the loss to solvent members means that the defaulting member does not have to absorb the entire loss. If the loss is sufficiently catastrophic and the defaulting member is systemically significant, then the shock to the financial system could be severe. With mutualization, however, clearinghouse members cushion the impact of the loss.

For all the benefits conveyed by DCOs, these intermediaries have drawn criticism as being systemically significant entities themselves. By centralizing all credit and counterparty risks into a handful of DCOs, regulators have

73 Zachary J. Gubler, *The Financial Innovation Process: Theory and Application*, 36 DEL. J. CORP. L. 55, 89–93 (2011).

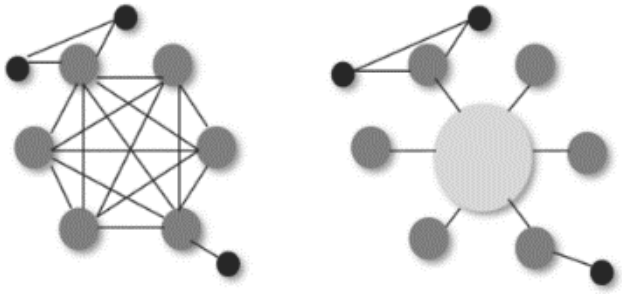
74 *Id.*

75 *See* Kress, *supra* note 12, at 65–66.

76 For further details on the default waterfall, see INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, CCP LOSS ALLOCATION AT THE END OF THE WATERFALL 8 (2013).

merely shifted, rather than reduced, systemic risk.[77] This is essentially an argument of concentration: whereas prior to Dodd-Frank a complex web linked numerous derivatives counterparties, now all roads lead to the DCO (see Figure 1). Like NSCC and OCC, the OTC derivatives clearinghouse has itself become TBTF.

FIGURE 1: BILATERAL (LEFT) AND CENTRALIZED CLEARING (RIGHT) COMPARED*



**Dark grey circles represent large dealers or banks that become clearinghouse members; black circles represent small financial institutions or end users that do not become clearinghouse members. The light grey circle is the clearinghouse.*

If anything, DCOs serving the OTC market are even more systemically important than NSCC and OCC. The trading volumes that OTC DCOs will have to clear are mindboggling, far higher than those cleared by NSCC and OCC. In the third quarter of 2013, the notional value of derivatives activities at U.S. commercial banks totaled $240 trillion, with the vast majority being OTC derivatives.[78] Here is another perspective: the current size of the global OTC derivatives market is estimated between $600 and $700

77 Mark J. Roe, *Clearinghouse Overconfidence*, 101 CAL. L. REV. 1641, 1672 (2013).

78 OFFICE OF THE COMPTROLLER OF THE CURRENCY, OCC'S QUARTERLY REPORT ON BANK TRADING AND DERIVATIVES ACTIVITIES, THIRD QUARTER 2013, table 3 (2013). Of this amount, the top twenty-five banks, which tend to be the largest dealers, comprised $239.7 trillion. By contrast, the total value of assets held by the top twenty-five banks was only $9 trillion.

trillion (in notional terms).[79] By contrast, the combined equity market capitalization of every listed company on Earth is estimated at only $50 trillion.[80]

Apart from concentration, there are other ways in which centralized clearance might increase systemic risk. 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.[81] Counterparties might monitor each other less, trusting that DCOs are doing so[82]—whereas counterparties trading bilaterally likely understand each other better than a DCO would.

The precedents for clearinghouses sustain this criticism. In all three exchange-traded markets—securities, options, and futures—a small handful of clearinghouses have emerged dominant, with or without coordination among competitors. Post-Dodd-Frank developments further confirm this trend. Clearinghouses must register with the Securities Exchange Commission (SEC) as clearing agencies or the Commodity Futures Trading Commission (CFTC) as DCOs.[83] At the time of writing, there were only twenty-five DCOs registered with the CFTC; excluding those with "dormant," "pending," or "vacated" status, this number decreases to fourteen.[84] Most active registrants, like OCC, are holdovers

79 *See* Bank for Int'l Settlements, *supra* note 7.

80 *See* ECONOMIST, *supra* note 66. The $700 trillion number is also more than ten times the size of the entire world economy. *See* Steve Denning, *Big Banks and Derivatives: Why Another Financial Crisis Is Inevitable*, FORBES (Jan. 8, 2013), http://perma.cc/6Z32-NHC4.

81 Craig Pirrong, *The Economics of Clearing in Derivatives Markets: Netting, Asymmetric Information, and the Sharing of Default Risks Through a Central Counterparty* 53–63 (Univ. of Houston, Working Paper, 2009), *available at* http://perma.cc/8YW3-JVET.

82 *Id.* at 61.

83 7 U.S.C. § 2(h) (2012); 15 U.S.C. § 78c-3(a)(1) (2012). *See also Clearing Agencies*, SECURITIES AND EXCHANGE COMM'N, http://perma.cc/SXU9-DLYZ; *Derivatives Clearing Organizations*, COMMODITY FUTURES TRADING COMM'N, http://perma.cc/MQA3-2M3J (last visited Nov. 19, 2014).

84 *See Derivatives Clearing Organizations*, COMMODITY FUTURES TRADING COMM'N, http://perma.cc/R3KB-EZV2 (last visited Nov. 19, 2014).

from the pre-Dodd-Frank days. This leaves the number of Dodd-Frank-era DCOs at five.[85] A number of these registrants are owned by the same entity.[86] Mergers have also permeated the industry, cutting down the number of clearinghouses over time.[87] These trends render it inevitable that only a small number of DCOs will persist after the rules under Dodd-Frank are fully implemented.

Anticipating these staggering prospects, Title VIII under Dodd-Frank prescribes several risk-management mechanisms for DCOs, including prudential standards and administrative supervision. DCOs designated as systemically important ("SIDCOs") by the Financial Stability Oversight Council will be held to higher standards.[88] Additionally, DCOs will have access to the Discount Window in times of exigency, a formerly de facto policy that Dodd-Frank codifies.[89] Finally, Section 725 of Dodd-Frank restates the principles governing clearinghouses under the Commodity Exchange Act to include antitrust considerations. Specifically, Core Principle N forbids restraints on trade and anticompetitive burdens on trading.[90]

These provisions do not instill great confidence in the ability of regulators to oversee DCOs. The tremendous

85 As of the time of writing, Cantor Clearinghouse, L.P., ICE Clear Credit LLC, ICE Clear Europe Limited, LCH.Clearnet SA, and Singapore Exchange Derivatives Clearing Limited are the only active DCOs registered since 2010. *See id.*

86 For example, several DCOs are part of the LCH or ICE consortia.

87 For example, the parent company of the Chicago Mercantile Exchange acquired the parent company of the CBOT DCO in 2007. *See Timeline of Achievements*, CME GROUP, http://perma.cc/8XEC-ULFV (last visited Nov. 19, 2014). ICE also happens to own several DCOs.

88 Whereas a DCO must have the financial reserves to withstand the default of its largest member, a SIDCO must have the reserves to withstand the default of its *two* largest members. Commodity Futures Trading Comm'n, *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).

89 *See* 12 U.S.C. § 5465(b) (2012). *See also* Colleen Baker, *The Federal Reserve as Last Resort*, 46 U. MICH. J.L. REFORM 69, 83–97 (2012).

90 *See* 7 U.S.C. § 7a-1(c)(2)(N) (2012).

responsibilities that Title VII thrusts upon derivatives clearinghouses effectively create another set of TBTF intermediaries that are charged with offloading credit and counterparty risk. For the reasons outlined above, clearinghouses will consolidate and grow into systemic significance. And when they fail, they will have access to the Discount Window and almost certainly follow the tried-and-true model of taxpayer-funded bailouts.

Despite the mandate of Core Principle N, DCOs can also restrain competition. The typical DCO member is a big bank (dealer) that makes a market in OTC derivatives much the same way that stock markets do. Such members have the greatest say in how DCOs conduct their business. As the futures market shows, where market-makers control clearinghouses, there are many novel ways to pre-empt competitors. To be sure, Dodd-Frank does mandate open clearing for DCOs, which avoids many of the problems of the futures market. Yet members can still restrain competition from other members through the imposition of higher fees or tougher membership conditions.

III. MAKING SENSE OF THE PARADOX

Whether as a result of regulatory complicity or regulatory inaction, clearinghouses in the exchange-traded derivatives markets have already maneuvered their way to systemic significance. Now, clearinghouses in the OTC derivatives market, whose size dwarfs that of all exchange-traded markets combined, are being built in a framework that has learned little from the big bank failures and clearinghouse near misses of the past. Inevitably, these clearinghouses too will become behemoths.

Yet regulators have generally not applied preventative measures to pre-empt TBTF with the same rigor that has been displayed for banks. Banks and clearinghouses are vastly different institutions, but they can both arrive at systemic importance. Both institutions can threaten the global financial architecture in two fundamental ways:

illiquidity and insolvency.[91] Dodd-Frank squarely addresses both possibilities for systemically important banks but only remedies illiquidity for systemically important clearinghouses. The ensuing impression is one of either ignorance (i.e., that regulators are unaware that clearinghouse insolvency poses serious systemic risks) or, worse yet, confusion (i.e., that regulators are aware but uncertain what to do about it).

This Section delves deeper into the systemic risk paradox in three ways. (i) First, this Section begins by exploring the theoretical and policy rationales for large clearinghouses. (ii) Next, it looks into the core differences between banks and clearinghouses to determine whether the disparate approaches to systemic risk are justifiable. On the surface, at least, it seems that banks are intensely regulated to head off systemic risk, while clearinghouses are permitted to consolidate their way to systemic significance. (iii) Finally, this Section ponders what should be made of the attempt to bring clearinghouses into the fold of the Federal Reserve's lender-of-last-resort power—which is designed to bolster liquidity—despite the fact that clearinghouses are not expressly covered under Orderly Liquidation Authority—which is designed to end TBTF.

A. Justifications for Large Clearinghouses

There are both regulatory and market justifications for the size of clearinghouses. The explanations are intertwined, and both have their flaws.

1. The Clearinghouse as Loss-Mutualizing Guarantor

Regulators tolerate the systemic risks of clearinghouses more comfortably than the systemic risks of big banks. This is because, as discussed in Section I, clearinghouses have

[91] Illiquidity and insolvency are the two particularly acute vulnerabilities that banks face. HEIDI MANDANIS SCHOONER & MICHAEL W. TAYLOR, GLOBAL BANK REGULATION 23 (2010).

been tasked with mitigating risk in the derivatives markets. After the passage of Dodd-Frank, numerous commentators remarked that an unintended consequence of mandatory clearing would be the creation of another set of systemically important institutions.[92] Clearinghouses, apparently, are simply different from banks.

A clearinghouse can be construed as a very large and sophisticated guarantor—an insurance company. As the central party in each trade, a clearinghouse is obliged to make one party whole in the event of the counterparty's default, either by utilizing the counterparty's margin or a guaranty fund pooled from all members. This role is analogous to an insurer's duty to step in for an obligation of its insured. In principle, a large insurer tends to be more stable than a smaller one, since it will have a larger pool of insureds from whom to collect premiums to fund payouts.[93] The larger the insurer, the more likely it is to be robust.

The inverse proposition has frequently proven to hold as well—that is, an insurance market with numerous small insurers does a poorer job at mitigating risk and promoting stability. To extend the analogy, we can turn to the fledgling years of American casualty insurance regulation, which were characterized by a multitude of insurance companies jostling to out-compete one another.[94] They fought to offer policyholders low premiums, driving each other out of business in swift cycles, until periods of mass claims such as the Chicago and Boston fires of 1871 and 1872 forced insurance cartels to set rates so as to restrain competition.[95]

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92 *See, e.g.,* Kristin N. Johnson, *Governing Financial Markets: Regulating Conflicts*, 88 WASH. L. REV. 185 (2013); Jeffrey Manns, *Insuring against a Derivative Disaster: The Case for Decentralized Risk Management*, 98 IOWA L. REV. 1575 (2013); Allen, *supra* note 12; Griffith, *supra* note 12; Yadav, *supra* note 12; Roe, *supra* note 77.

93 Size is no guaranty of stability, though, as the bailout of American International Group during the financial crisis demonstrates. *See* Seema G. Sharma, *Over-the-Counter Derivatives: A New Era of Financial Regulation*, 17 L. & BUS. REV. AM. 279, 293 (2011).

94 *See* Angelo Borselli, *Insurance Rates Regulation in Comparison with Open Competition*, 18 CONN. INS. L.J. 109, 113 (2011).

95 *Id.* at 113–14.

Nonetheless, cartel members would surreptitiously underprice each other, while competition from non-members would assail the cartel itself.[96] Very soon, states had to step in and regulate rates to protect policyholders from "ruinous competition."[97]

The insurance example teaches that excessive competition undercuts the rates and reserves needed to mitigate risk and protect policyholders. Numerous small players, none of whom manages to prevail for long enough to grow large or attain market dominance, populate the resulting market. In essence, size becomes a proxy for stability.

As with any insurer, a clearinghouse represents the coming together and pooling of risk—not just of its members, but also of entities that must clear through those members because they themselves are ineligible for membership (recall Figure 1). Thus, a clearinghouse pools all risk in a market. Yet the clearinghouse's ability to handle so much risk—and even whether risk should be offloaded to clearinghouses at all—has been questioned.[98] By guaranteeing its members' obligations, a clearinghouse takes on risk that might have dissipated naturally had, say, a non-systemically vital member been allowed to default on a trade. With central clearing, however, a clearinghouse has now assumed the losses of the defaulting member, thereby concentrating that risk within itself. And if margin were insufficient, the otherwise innocuous risk would be transmitted to other members.[99]

96 *Id.* at 114.

97 *Id.* at 115. In a pattern repeated in many other regulated industries, rate regulation prevailed in insurance until deregulation caught on. Starting in the 1960s, states experimented with less intrusive means of rate regulation and allowed competition to trickle back into the industry. *Id.* at 115–27.

98 *See, e.g.*, Roe, *supra note* 77, at 1663–74; Pirrong, *supra* note 81, at 4–5.

99 *See* Roe, *supra* note 77, at 1675–78. *See also* Manns, *supra* note 92, at 1607.

For any single counterparty, the risks that inhere in trading can be difficult to quantify due to their complexity.[100] The interjection of a clearinghouse can amplify those risks by creating a network that pools and transmits them to other clearinghouse members. Given the frequent correlation in positions in any given market (for example, where most parties might be betting long on the price of a commodity with no parties taking the offsetting short position) and the velocities at which losses can accelerate due to technological advances in trading,[101] the concentration and transmission of risk could easily turn into a systemic contagion. [102]

Ultimately, the dogma that clearinghouses are loss-mutualizing guarantors justifies the existence of large clearinghouses. This is so even though the assumptions supporting that guaranty function are weak. In the end, the goal of containing counterparty credit risk simply overshadows the threat of perpetuating systemic risk.[103]

2. The Clearinghouse as Efficiently Netting CCP

Intertwined with the regulatory justification of clearinghouse size is a market justification: due to netting efficiency, the growth and consolidation of clearinghouses is inevitable and even desirable.

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100 Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1368–70 (2011).

101 *See id.* at 1373–80. *See also* TURING, *supra* note 5, § 5.6(2)(c) (describing wrong-way risk).

102 On the threat of correlated losses posed by clearinghouses, see Roe, *supra* note 77, at 1677–78.

103 Asked whether clearinghouses could "introduce new systemic risks or become Too Big To Fail in their own right," CFTC Chairman Gary Gensler, perhaps the staunchest proponent of DCOs, responded: "They are far better than leaving the risks inside the banks, though the clearinghouses have to be fully regulated and live up to strong risk management. But it's better than leaving the risks for the next AIG." Mike Konczal, *Interview: Gary Gensler Explains How Financial Reform is Going*, WASH. POST WONKBLOG, Oct. 19, 2013, http://perma.cc/R46S-WBMV.

Because a clearinghouse is the central counterparty ("CCP") that modulates every trade, it has a birds-eye view of the obligations of all counterparties. The clearinghouse is able to offset counterparty positions against each other and lower the margin that parties are required to post. Multilateral netting of this sort reduces the aggregate exposure of counterparties, thereby tempering counterparty credit risk.[104] The larger the CCP, the more novated positions can be netted against each other. From the perspective of counterparties, a large CCP with robust membership is also attractive because netting lowers funding costs. Counterparties do not have to post as much margin to collateralize trades.[105] All else being equal, counterparties will select larger clearinghouses—and larger clearinghouses will beat out smaller ones.

Recent scholarship suggests that counterparty credit risk could be even more efficiently reduced if a very small number of clearinghouses dominated *multiple* industries.[106] Currently, clearinghouses tend not to clear *across* product lines.[107] Each product has its own primary clearinghouse—NSCC in securities, OCC in options, LCH in interest rate swaps, ICE Clear Credit in credit default swaps, etc. (see Figure 2). Even though clearinghouse ownership is trending toward consolidation, the clearinghouses have typically not deviated from serving single markets.

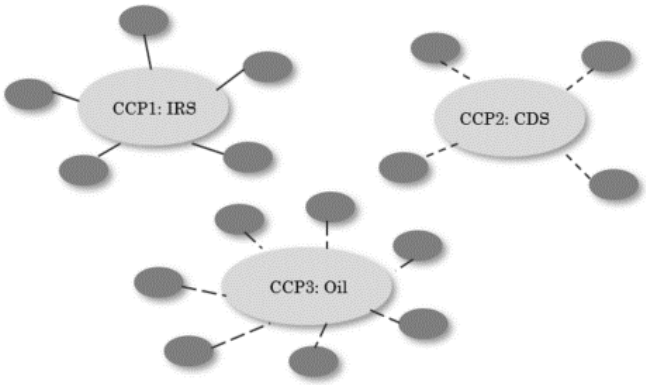
104 *See* Kress, *supra* note 12, at 67–69.

105 *See, e.g.*, DEPOSITORY TRUST & CLEARING CORP., *supra* note 7, at 1 (claiming a netting factor of 98% for NSCC so that $186 trillion in transactions in 2012 was net settled to $6 trillion).

106 *See* Duffie & Zhu, *supra* note 13.

107 Some members of the powerhouse clearing consortia, however, currently have operations that can handle multiple assets.

FIGURE 2: MULTILATERAL NETTING WITH SINGLE-PRODUCT CCPS



Despite Dodd-Frank's efforts to shift OTC derivatives markets from bilateral to multilateral netting, it is not altogether settled that the gains of moving to one CCP per asset offset the losses from abandoning bilateral netting between two counterparties across different assets. As an illustration of bilateral netting, assume that there are two dealers—X, a large Midwestern bank that sells interest rate and credit default swaps to end users in the Midwest, and Y, a New York-based behemoth bank with whom X has back-to-backed its exposures on interest rate and credit default swaps. Prior to Dodd-Frank, X and Y could have netted their positions on interest rate swaps against their positions on, say, credit default swaps, options, and any number of instruments. Now, with the introduction of a CCP for each asset, one CCP can net across multiple counterparties, but the CCP in interest rate swaps is not the same CCP in credit default swaps. Hence, the CCPs cannot net their positions *across* assets.

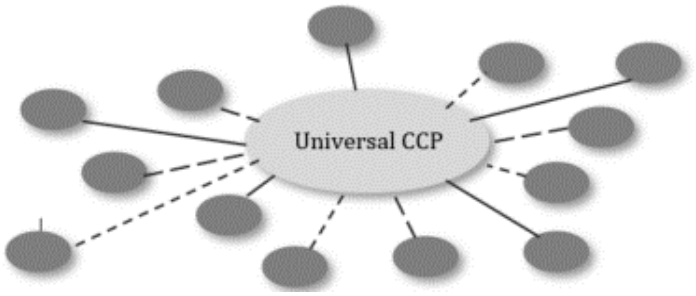
As quantified by empirical literature, multilateral netting for one asset is only marginally better than bilateral netting across several assets.[108] However, multilateral netting across several assets beats both of the above.[109] The best way to

108 *See* Duffie & Zhu, *supra* note 13.

109 *See id*.

maximize netting efficiency—and, incidentally, to reduce counterparty credit risk—is to facilitate clearing across assets by a very small number of giant clearinghouses (see Figure 3). That solution is redolent of public utility, the moniker conveyed to NSCC during its controversial birth. A clearinghouse that clears for even half of the OTC derivatives market would truly be gargantuan. It could beat out all competition, and its monopoly would have to be protected by explicit government regulation. It is for these reasons, perhaps, that the idea of a public utility clearinghouse has not gained much traction.[110]

FIGURE 3: MULTILATERAL NETTING WITH A MULTIPRODUCT CLEARINGHOUSE



Apart from antitrust considerations, a colossus that can clear across different assets faces some practical challenges. First, its operators must possess the expertise to value member positions for all the assets that it serves. The difficulty of this mark-to-market function triggered the financial crisis, because counterparties might have used

110 *See, e.g.*, Adam L. Levitin, *Response: The Tenuous Case for Derivatives,* 101 GEO. L.J. 445, 464 n.75 (2013). *But see* Paul Tucker, *Are Clearinghouses the New Central Banks?,* Keynote Speech at the Federal Reserve Bank of Chicago Over-the-Counter Derivatives Symposium, April 11, 2014, Chicago, *available at* http://perma.cc/5QJ4-RCWB; Manmohan Singh, *Making OTC Derivatives Safe—A Fresh Look* 17–18 (Int'l Monetary Fund, Working Paper No. 11/66, 2011), *available at* http://perma.cc/M4CY-SRPH [hereinafter Singh, *Making OTC Derivatives Safe*].

entirely different valuations for the same trade.[111] Hence, despite the theoretical benefits of multi-product netting across asset classes, multilateral netting might be best circumscribed to single products. In addition, multi-product netting depends on the ability of existing clearinghouses to interoperate. Interoperability, meanwhile, turns upon the willingness of members of one clearinghouse to sync up with members of another, which may dilute the market shares of both sets of members.[112] Interoperability is also complicated by the fact that a multi-product clearinghouse would straddle the bankruptcy laws of multiple jurisdictions.[113]

Whether across product lines or not, the benefits of netting are coming under fire. Netting favors some creditors at the expense of others.[114] More concretely, assume that a clearinghouse member ("A") is in-the-money on a trade with another member ("B"). Further, A happens to be out-of-the-money on a trade with a third member ("C"). A's in-the-money position is an asset that can be set off against its out-of-the-money position with C. Yet once that is done, the asset is no longer available for A's other creditors, especially nonmember creditors who do not have the benefit of a clearinghouse to redirect assets. In this sense, netting has been criticized as redistributing assets from outsiders (nonmember creditors) to insiders (creditors).[115] If those nonmember creditors are more systemically important than insiders (counterparties), then the financial system is jeopardized.

The salience of these criticisms is an empirical issue. The modeling done by proponents of clearinghouses suggests that

111 *See* Denning, *supra* note 80; Frank Partnoy & Jesse Eisenger, *What's Inside America's Banks?*, ATLANTIC MONTHLY, Jan./Feb. 2013, at 60–71.

112 For more on how members leverage clearinghouses to consolidate shares of the dealer market, see *infra* Section IV.B.

113 *See* Singh, *Making OTC Derivatives Safe*, *supra* note 110, at 7.

114 *See* Roe, *supra* note 77, at 1663–68. *See also* Pirrong, *supra* note 81, § 5.

115 Mark Roe, *Clearinghouse Over-Confidence*, PROJECT SYNDICATE (Oct. 26, 2011), http://perma.cc/WPH9-XKFM.

the benefits of multilateral netting outweigh the drawbacks—especially if netting across different assets can be achieved. This line of thinking, which trumpets the netting efficiency of CCPs, has held sway for regulators. Because the overarching goal is to mitigate counterparty credit risk, the growth and consolidation of clearinghouses, as well as their systemic risks, will be tolerated.

B. Core Differences between Banks and Clearinghouses

So far, this Article has proffered the (i) guaranty, (ii) risk mutualization, and (iii) netting functions of clearinghouses as justifications for their size—functions that banks clearly do not share. To enrich the discussion of the uniqueness of clearinghouses, this Subsection explores an additional point of distinction between the two institutions: (iv) the composition of their assets and liabilities.

Banks hold illiquid assets while owing liquid liabilities.[116] This classic problem makes banks vulnerable to runs by depositors. Continental Illinois demonstrates that if a bank is large or interconnected enough, a run could infect the financial system. Hence, federal deposit insurance serves as a backstop for bank liabilities.[117] After the financial crisis, U.S. and international prudential regulators endeavored to shore up bank assets and pare down their liabilities. The heightened capital requirements under Basel III, for instance, represent efforts to bolster bank reserves.[118] In preventing banks from trading proprietarily or engaging in derivatives transactions without the standardizing effect of

116 Daniel R. Fischel et al., *The Regulation of Banks and Bank Holding Companies*, 73 VA. L. REV. 301, 306–07 (1987) ("By contrast, money market funds have liquid assets and liabilities; pension funds have illiquid assets and liabilities. No other entity combines liquid liabilities with illiquid assets in the same manner as banks.").

117 *See id*.

118 *See* BASEL COMM. ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS (2010), *available at* http://perma.cc/8295-7TJR.

clearinghouses, the Volcker Rule and Title VII under Dodd-Frank attempt to simplify the liabilities side.

Clearinghouses, however, are designed to avoid the asset-liability mismatch that plagues banks. Conceptually, clearinghouses sit atop a fortress of margin pledged by members to collateralize trades. Since the financial crisis, there has been a push by both American and European regulators to ensure that collateral is comprised of liquid instruments.[119] Today, clearinghouses have generally stipulated that margin consist of cash or treasuries—or that, to the extent other instruments are acceptable, the proportion of non-cash and non-treasuries be capped. In collateralizing CDS trades, for example, ICE Clear Credit accepts only cash and treasuries,[120] ICE Clear Europe accepts a few additional instruments but subject to conditions,[121] LCH.Clearnet accepts only cash, securities, and precious metals for initial margin and cash for variation margin,[122] and CME Clearing accepts cash, treasuries, and

119 *See, e.g.*, Commodity Futures Trading Comm'n, Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. 3698, 3724 (Jan. 20, 2011) (to be codified at 17 C.F.R. 39.15(c)(1)) [hereinafter CFTC, *Risk Management Requirements for DCOs*] ("A derivatives clearing organization shall limit the assets it accepts as initial margin to those that are [sic] have minimal credit, market, and liquidity risks."); Council Regulation 648/2012, of the European Parliament and of the Council of 4 July 2012 on OTC Derivatives, Central Counterparties and Trade Repositories, art. 46, 2012 O.J. (L 201) 38 ("A CCP shall accept highly liquid collateral with minimal credit and market risk to cover its initial and ongoing exposure to its clearing members.") [commonly known as the European Market Infrastructure Regulation (EMIR)].

120 *See, e.g.*, ICE CLEAR CREDIT, CLEARING RULES Schedule 401 (June 6, 2014), *available at* http://perma.cc/4HL-K4G8.

121 For example, gold bullion is capped at the lower of $250 million or 30% of the initial margin and subject to haircuts, while letters of credit must strictly abide by protocols that ICE sets. *See Finance Procedures*, ICE CLEAR EUROPE §§ 10.2, 12.4 (July 16, 2011), http://perma.cc/CXU8-HXGB. *See also List of Permitted Cover and Limits on Collateral*, ICE CLEAR EUROPE (July 2014), https://www.theice.com/publicdocs/clear_europe/list-of-permitted-covers.pdf.

122 *Acceptable Collateral - Ltd*, LCH.CLEARNET, http://perma.cc/4W7Q-74F4 (last visited Nov. 19, 2014).

money market funds at no cap and then additional instruments for no greater than 40% of margin requirements.[123]

On the liabilities side, clearinghouse obligations are comparatively streamlined—basically, to stand in for members when they are unable to honor their obligations. Clearinghouses are also in a prime position to keep abreast of liabilities, for their very presence injects transparency into otherwise opaque OTC derivatives markets.[124] The insertion of a CCP minimizes the volatility that characterized bilateral clearing, where counterparties may have valued their positions very differently.[125] CCPs also tend to standardize the instruments that they clear, thereby rendering instruments more liquid and less unpredictable.[126] In this respect, clearinghouses are better able than banks to gauge their liabilities and head off losses. Given these differences in assets and liabilities, the balance sheets of clearinghouses are much more straightforward than those of banks.[127]

123 *See Standard Acceptable Collateral and Resources*, CME GROUP, http://perma.cc/QQX8-4H2N (follow "CDS" hyperlink) (last visited Nov. 19, 2014).

124 *See* FINANCIAL STABILITY BOARD, IMPLEMENTING OTC DERIVATIVES MARKET REFORMS 10 (2010), *available at* http://perma.cc/XR96-HSCQ.

125 Of course, since little is straightforward with clearinghouses, there are criticisms about the purported transparency and standardization of CCPs as well. They include arguments that (i) transparency does little to simplify the complexity of trading in exotic instruments, *see* Yadav, *supra* note 12, at 420, (ii) standardization reduces hedging efficiency, *see* Kent Cherny & Ben R. Craig, *Reforming the Over-the-Counter Derivatives Market: What's to Be Gained?*, ECON. COMMENT. (Fed. Reserve Bank of Cleveland Research Dep't) July 7, 2010, *available at* http://perma.cc/3CW9-UPQY ("For those looking to hedge, some efficiency may be lost as hedging strategies have to be 'shoehorned' into standardized instruments."), and (iii) standardization in cleared derivatives will simply shunt risk into the other markets, *see* TURING, *supra* note 5, § 5.7.

126 *See* Roe, *supra* note 77, at 1658.

127 *Compare* NAT'L SEC. CLEARING CORP., CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2012 AND 2011, AND INDEPENDENT AUDITORS' REPORT 2 (2013), *and* IntercontinentalExchange, Inc., Annual Report (Form 10-K), Item 8 (Feb.

In conjunction, the core traits of clearinghouses paint a picture of entities that perform critical functions for the financial system and are capitalized robustly enough to do so. The certainty of this proposition diminishes if clearinghouses engage in a race to the bottom to compete for market share, as insurance companies have done in the past.[128] To prevent that possibility, Dodd-Frank empowers regulators with intimate oversight of clearinghouses, especially the systemically important ones, in certain areas.

C. Selective Regulatory Convergence

The justifications for large clearinghouses are grounded in traits that banks do not share. Nonetheless, both sets of financial institutions can pose systemic risks due to their size and interconnectivity. This Subsection explores how regulators would handle crisis situations for big banks and big clearinghouses, where preventative measures are needed to prevent bailout and TBTF. As will become clear, there would be a convergence of solutions for a liquidity crisis but confusion for insolvency.

1. Liquidity

Under Title VIII of Dodd-Frank, clearinghouses deemed systemically important financial market utilities ("SIFMUs") have access to the Federal Reserve's Discount Window as a source of emergency liquidity.[129] This policy made its way

6, 2013), *with* JPMorgan Chase & Co., Annual Report (Form 10-K), Item 8 (Feb. 28, 2013).

128 As Professor Levitin sums up:

> Ultimately, it is capital . . . that will determine the success of clearinghouses. Well-capitalized clearinghouses can absorb and diffuse losses, serving as systemic lightning rods. But without sufficient capital (protected by regulation), clearinghouses present vulnerable points of financial interconnectivity that may incur excessive risk in a race for market share.

Levitin, *supra* note 110, at 448.

129 *See* 12 U.S.C. §§ 5462(3), 5462(4), 5465(b) (2012). A financial market utility is defined as "any person that manages or operates a

into Dodd-Frank early on, in recognition of the fact that if liquidity dries up, the Federal Reserve will inevitably step in to back clearinghouse obligations. Its expression in Title VIII clarifies that the Federal Reserve has the power to intervene on behalf of market makers and clearinghouses; previously, the Federal Reserve could only look to a "patchwork of authorities, largely derived from [its] role as a banking supervisor, as well as on moral suasion."[130] It was within this loose framework that the central bank acted in 1987 to buttress the Options Clearing Corporation's liquidity. When precarious swings in the equities markets caused OCC to make margin calls that some members could not honor, the Fed used its lender-of-last-resort ("LoLR") powers to induce and cajole the money center banks into lending to OCC.[131] This stratagem was circuitous, for the regulator could only aid the clearinghouse by guaranteeing the solvency of the banks that lent to it. Today, the Federal Reserve can lend directly to SIFMUs; in this way, the regulator has become the "insurer of last resort" for the financial markets[132]—or, the "market-maker of last resort."[133]

Banks are well-acquainted with the Federal Reserve's "bedrock function" as the LoLR.[134] To prevent a run and the ensuing panic, the regulator can inject liquidity into a bank's balance sheets to bridge the gap between its generally short-term liabilities and long-term assets.[135] This function has been invoked numerous times in the name of stabilizing the

multilateral system for the purpose of transferring, clearing, or settling payments, securities, or other financial transactions among financial institutions or between financial institutions and the person." 12 U.S.C. § 5462(6) (2012). Baker argues that Title VIII could even grant SIFMUs nonemergency access to the Discount Window. *See* Baker, *supra* note 89, at 111.

130 *Systemic Risks and the Financial Markets: Hearing Before the H. Comm. on Fin. Servs.*, 110th Cong. 11 (2008) (statement of Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys.).

131 *See* Bernanke, *supra* note 46, at 145–50.

132 *Id.* at 150.

133 *See* Baker, *supra* note 89, at 71.

134 *Id.* at 84–85.

135 *Id.* at 85–86.

financial system; during the crisis, liquidity was liberally dispensed, and the Federal Reserve indiscriminately purchased toxic assets, for the benefit of commercial and investment banks alike.[136] This role is not without its criticisms, including, most prominently, the moral hazard of saving institutions that should otherwise be left to reap their poor financial gambles.[137] In this spirit, Dodd-Frank restrains the Federal Reserve's LoLR powers by requiring, among other things, coordination with Treasury and Congress, ex ante policies and procedures, and collateralization for emergency lending.[138]

Consistent with the limits placed upon the LoLR powers, designated clearinghouses must submit to broad conditions under Title VIII in return for emergency funding. The force of this corner of Dodd-Frank is obscured by its brevity. Title VIII empowers the Federal Reserve to prescribe risk management standards for SIFMUs—and even to potentially override the standards set by the SEC and CFTC if such standards "are insufficient to prevent or mitigate significant liquidity, credit, operational, or other risks to the financial markets or to the financial stability of the United States."[139] Designated FMUs must also provide regulators with advance notice of changes to rules, procedures, or operations that could "materially affect" the FMU's "nature or level of risks."[140] Furthermore, the Federal Reserve, SEC, and CFTC may also conduct examinations of, request information from, and pursue enforcement actions against SIFMUs concerning their risks, safety and soundness, and compliance with regulations.[141]

As of the time of writing, there have been eight FMUs designated as systemically important.[142] Several are well-

136 *See id.* at 86–88; SCHOONER & TAYLOR, *supra* note 91, at 55–56.

137 *See* SCHOONER & TAYLOR, *supra* note 91, at 52–53.

138 *See* Baker, *supra* note 89, at 88–89.

139 12 U.S.C. § 5464(a)(2)(B) (2012).

140 *Id.* § 5465(e)(1)(A).

141 *Id.* §§ 5466, 5468.

142 *See* U.S. DEP'T OF THE TREASURY, FINANCIAL STABILITY OVERSIGHT COUNCIL MAKES FIRST DESIGNATIONS IN EFFORT TO PROTECT AGAINST

known clearinghouses (CME, ICE Clear Credit, NSCC, and OCC), while others are settlement systems (DTC and Clearing House Interbank Payments System). Among the clearinghouses, NSCC, OCC, and CME are to be expected, owing to their longstanding domination in the securities, options, and futures markets, respectively. ICE Clear Credit, however, only became a CDS clearinghouse in 2009.[143] Its rapid rise exemplifies the crucial risk-mitigation role that Dodd-Frank has thrust upon clearinghouses and corroborates the Justice Department's assertion that early entrants into a clearing market can quickly become entrenched as dominant providers. ICE Clear Credit's member list also reads like a who's-who of CDS market-makers.[144] Notwithstanding the deep pools of liquidity that these members can provide in margin and default funding, ICE Clear Credit is a paradigmatic example of how central clearing can centralize risk, by pooling it from the largest dealers in the world. Still, the SIFMU designation for this clearinghouse demonstrates that regulators understand how clearinghouses have become large and interconnected enough that their credit crunch jeopardizes liquidity for the rest of the financial system.

2. Insolvency

Clearinghouses fit more tenuously into the insolvency regime for systemically significant banks. Currently, OLA

FUTURE FINANCIAL CRISES (July 18, 2012), *available at* http://perma.cc/52EK-A3ZW. The eight are Clearing House Payments Company, L.L.C., CLS Bank International, Chicago Mercantile Exchange, Inc., Depository Trust Company, Fixed Income Clearing Corporation, ICE Clear Credit LLC, NSCC, and OCC.

143 *See* INTERCONTINENTAL EXCHANGE, ICE CLEAR CREDIT, *available at* http://perma.cc/VD9E-W7GW.

144 *See* INTERCONTINENTAL EXCHANGE, ICE CLEAR CREDIT PARTICIPANT LIST, *available at* http://perma.cc/HWK5-CJXV (listing affiliates as Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Merrill Lynch, Morgan Stanley, Nomura, Société Générale, Bank of Nova Scotia, Royal Bank of Scotland, and UBS).

under Title II of Dodd-Frank puts failing SIFIs into FDIC receivership. While banks and non-banks alike can be designated SIFIs, to date only American International Group, General Electric Capital Corporation, and Prudential Financial have been named as such.[145] Clearinghouses can be flagged as SIFMUs under Title VIII, but that designation merely triggers heightened supervision and prudential regulation without implicating any liquidation consequences.[146] Conceptually, the systemic importance of financial institutions seems to proceed along two tracks: SIFIs under Titles I and II, and SIFMUs under Title VIII. Industry and commentators alike have queried whether the two can meet.[147] The Financial Stability Board's most recent pronouncement on SIFIs sidesteps OLA's applicability but references an international regulatory presumption that financial market intermediaries (which include clearinghouses) are systemically important, at least in the jurisdictions in which they are located.[148]

145 U.S. Dep't of the Treasury, *Financial Stability Oversight Council: Designations* (Dec. 17, 2013, 3:47 PM), http://perma.cc/C3ZR-HRJC.

146 *See id.*

147 *See* Letter from Kathleen M. Cronin, Managing Dir., Gen. Counsel, & Corp. Sec'y, CME Group, to Robert E. Feldman, Exec. Sec'y, FDIC (Nov. 18, 2010), *available at* http://perma.cc/9XPF-VRLS (requesting clarification that CME is not a "financial company" subject to OLA); Mark D. Sherrill, *Are There Futures in Your Futures?*, AM. BANKR. INST. J. 16 (2013) (positing that OLA can apply on the basis of an ad hoc determination of systemic risk); Allen, *supra* note 12, at 1100–02 (making the case for applying OLA to failing clearinghouses despite statutory uncertainty). The ambiguity stems from Dodd-Frank's exclusion of DCOs from the definition of "financial company" and, by implication, from OLA, which applies only to covered financial companies. *See* 12 U.S.C. § 5381(a)(11) (2012). However, the definition includes any company that the Federal Reserve has determined to be predominantly engaged in activities that are "financial in nature or incidental thereto," *see id.* at § 5381(a)(11)(B)(iii), which may encompass clearinghouses, Telephone Interview with Robert Steigerwald, Senior Policy Advisor, Fed. Reserve Bank of Chi. (Feb. 24, 2014).

148 FINANCIAL STABILITY BD., ASSESSMENT METHODOLOGIES FOR IDENTIFYING NON-BANK NON-ISSUER GLOBALLY SYSTEMIC IMPORTANT FINANCIAL INSTITUTIONS (Jan. 8, 2014), *available at* http://perma.cc/U8EN-

The silence from regulators on insolvency and resolution mechanisms for large clearinghouses is odd, given the growing recognition of their systemic risks and the concession under Title VIII that the Federal Reserve would step in during a liquidity crisis. Nearly four years after Dodd-Frank's passage, the glaring persistence of this ambiguity suggests that regulators are still uncertain over how to address the systemic risks of clearinghouses.

If, however, a systemically important clearinghouse were to teeter on the brink of insolvency[149] and, as predicted, the FDIC swoops in under the auspice of OLA,[150] what might that resolution process look like?

Title II authorizes the FDIC to oversee the sale of a failing institution's assets as well as its transfer to a bridge company.[151] Due to the unique nature of clearing and settlement, if a sale is pursued, the only viable purchasers may well be other clearinghouses.[152] Even if legal impediments (e.g., consent to novate) could be overcome, prospective buyers may be loath to take on the risk.[153] If the FDIC proceeds down the path of a bridge institution, the receiver would face a steep learning curve in taking the helm of clearinghouse operations, which may be specialized and

9A8L. *See also* BANK FOR INT'L SETTLEMENTS & OICU-IOSCO, PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES (2012), *available at* http://perma.cc/Z2DB-JPWP.

149 A clearinghouse might spiral into insolvency if its losses from uncollateralized member positions or operational problems exceed total or liquid assets. A clearinghouse might teeter on the brink of insolvency if its default management system is failing or likely to fail. Manmohan Singh, *When Financial Plumbing Fails - Recovery and Resolution of CCPs* 11 (2014) (unpublished manuscript on file with author) [hereinafter Singh, *When Financial Plumbing Fails*].

150 *See* Cronin, *supra* note 147.

151 *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, 12 U.S.C. §§ 5384, 5390 (2012).

152 *See* Singh, *supra* note 149, at 12–13.

153 *See id*. Further, willing buyers must be able to figure out how to interoperate with the seller's systems.

idiosyncratic.[154] Either way, it is unlikely that the deployment of bailout funds could be avoided.[155]

A bailout would invite instant comparison to the inconsistent government intervention during the financial crisis (e.g., saving Bear Stearns but not Lehman Brothers) and all the criticisms of moral hazard (e.g., $700 billion bailout of banks embroiled in risky derivatives trades), whether nuanced or not.[156] For clearinghouses, bailouts might encourage questionable practices, including failing to demand sufficient margin or to devise adequate risk mitigation procedures.[157] Beyond clearinghouses, a bailout would also subsidize the decision of members to engage in unwise trades. The bargain that all parties had struck was clear well in advance of insolvency: an in-the-money member is to have first dibs on its counterparty's in-the-money positions elsewhere, and the clearinghouse is to administer the netting. Also, prior to insolvency each member knew its place in the default waterfall. And while the impulse of regulators is to stop the decline of a SIFI much earlier than traditional bankruptcy or ad hoc bailout, to graft OLA onto the clearinghouse resolution process undoes the private ordering for which a clearinghouse and its members had contracted.[158] How to balance those two extremes is the unenviable choice that regulators must make.[159]

154 *See* Allen, *supra* note 12, at 1103–05.

155 Funds might be deployed to absorb some of the clearinghouse liabilities, so as to sweeten the pot for prospective purchasers. Alternatively, funds might also go toward the operations of the receivership or bridge company. *See* Lee, *supra* note 12, at 780 (discussing 12 U.S.C. § 5384(d) (2012)).

156 For an example of nuanced criticisms, see Kenneth Ayotte & David A. Skeel, Jr., *Bankruptcy or Bailouts?*, 35 J. CORP. L. 469 (2010).

157 Improper collateralization would be especially salient if a clearinghouse had engaged in competitive margining to attract membership.

158 *See* Singh, *supra* note 149, at 11.

159 *See* Ayotte & Skeel, *supra* note 156, at 472 ("The distress of financial firms thus poses an inescapable choice: regulators must either allow counterparties to take losses, and thus confront the possibility of

Yet the problem with the insolvency regime for systemically important clearinghouses is the signal it sends when juxtaposed against the liquidity backstop for SIFMUs. What do regulators imply when they explicitly stand behind the extension of LoLR assistance to clearinghouses but refuse to address the likelihood of clearinghouse insolvency? They imply that clearinghouses are essential to the financial system but that the regulators are either too timid or too confused to commit to a resolution mechanism. Or perhaps they indicate that by prudential regulation and market discipline alone, clearinghouses will never fail.

IV. WHO BENEFITS FROM THE PARADOX?

Who gains from the divergent regulation of systemic risk in clearinghouses and banks? Clearinghouses, for one.[160] If we are serious about netting efficiency and minimizing counterparty credit risk, then we must tolerate the steps that large clearinghouses take on a daily basis, in normal economic times, to attain market dominance. The end result will be a small circle of giant clearinghouses best able to stabilize the markets in the most volatile of times.

But stability cannot possibly trump competition in perpetuity; this is an age-old balance that recalibrates when we progress beyond a crisis. Nearly six years have elapsed since the collapse of Lehman Brothers and four years since the passage of Dodd-Frank. It is time to revisit the degree to which antitrust should complement financial regulation, particularly as regulators build an OTC clearing architecture

systemic effects, or they must use taxpayer money to prevent the losses from being realized.").

160 Additionally, those who can offload risk onto clearinghouses also benefit. For instance, a party to a derivatives trade would have closely monitored the positions and creditworthiness of its counterparty under bilateral clearing; under centralized clearing, however, that monitoring function now resides with the clearinghouse, and the counterparties have less incentive to watch each other closely and demand collateral. *See* Roe, *supra* note 77, at 1694–95. More generally on the transferring and monitoring of counterparty balance sheet risk, see Pirrong, *supra* note 81; Yadav, *supra* note 12.

from scratch. Large clearinghouses trigger anticompetitive concerns that, even if tolerated, should be accounted for in the regulatory calculus. While competition generally yields to stability, there are at least two situations in which antitrust must be given greater deference.

The first is when clearinghouses skirt their utility obligations, such as providing nondiscriminatory access.[161] Clearinghouses are fundamentally a natural monopoly—in each market, production by a dominant clearinghouse decreases rather than increases costs. When such a naturally dominant player starts to extract monopoly rents and obstruct allocative efficiency, antitrust will take corrective action.

Second, because big banks, which tend to also be the powerhouse derivatives dealers, control clearinghouses, there is a danger that big banks can leverage the dominance of clearinghouses to consolidate their shares of the dealer market. Here, antitrust is also particularly good at anticipating misconduct and devising solutions. As others have noted,[162] no discussion of clearinghouses is complete without scrutinizing the role of dealers.

Taking a closer look at who benefits from the systemic risk paradox, we will find that large banks benefit—large banks, which comprise the majority of clearinghouse members and which, as SIFIs, are heavily regulated under Dodd-Frank in nearly all aspects.

This Section evaluates the beneficiaries of the systemic risk paradox from the lens of antitrust. It begins by exploring the balance between stability and competition in financial regulation. Then it considers adapting antitrust solutions for natural monopolies to clearinghouses. Doing so would insulate clearinghouses from destructive competition while simultaneously protecting consumers from abuse of dominance. Finally, this Section concludes with broader

161 *See infra* Section IV.B.2.

162 *See, e.g.*, Griffith, *supra* note 12, at 1190–1204; Johnson, *supra* note 12, at 696.

observations about the interplay between regulation and antitrust.

A. Stability and Competition

This Subsection examines how stability and competition were balanced at crucial junctures in the past. It further situates the case for clearinghouses within that history, as well as the latest empirical literature.

1. Ebbs and Flows of Financial Regulation

Considering the history of American banking, the evidence is mixed at best on whether competition detracts from or enhances stability. Banks failed when intensely regulated under a rubric that prioritized stability above all else (Continental Illinois, 1981),[163] and they failed during the go-go days of deregulation in the 1990s through the early 2000s (Wachovia, Washington Mutual). It is difficult, therefore, to draw firm conclusions on the relationship between stability and competition by examining the ebbs and flows of financial regulation.

Finance in the nation's early years was an unregulated free-for-all, with state-chartered banks minting their own currency and vying so ruthlessly for depositors that they epitomized destructive competition.[164] This period was followed by a slow march toward larger, national banks,

163 Then the seventh largest bank in the country, with $45 billion in assets, Continental Illinois was the most visible example of TBTF in the 1980s. *See* FED. DEPOSIT INSURANCE CORP., *supra* note 19, at 42 ("Regulators' preference for solutions that promoted stability rather than market discipline is apparent in the treatment of large banks . . . . At various times and for various reasons, regulators generally concluded that good public policy required that big banks in trouble be shielded from the full impact of market forces . . . .").

164 *See* 1 JERRY W. MARKHAM, A FINANCIAL HISTORY OF THE UNITED STATES (1st ed. 2002), Ch. 2 §§ 1, 4. From 1782 to 1837, over 700 banks sprang up in the country; in the two years between 1811 and 1813 alone, 120 new state banks were chartered, but within a decade, numerous banks would fail, with losses to the United States exceeding $1 million by 1815. *Id.*

spurred less by the need for stability than the desire to create a unified national currency.[165] The regulatory climate changed remarkably after the Great Depression, when the decimation of American financial institutions prompted a more heavy-handed approach favoring stability and risk mitigation.[166] The high-water mark of government regulation in the banking sector was the Glass-Steagall Act, which separated commercial banking from investment banking.[167] The firewall kept the entities that dominated these two sectors—banks and underwriters—from going head-to-head.[168] By setting commercial banking apart for heightened regulation, bank regulators acted as gatekeepers that restricted entry into this sector. The resulting set of institutions allowed to play in this space was heavily regulated, but it also approximated a government-set cartel with a lock on lending and a cushion from the intense competition that characterizes other sectors.[169]

165 *See id.* at Ch. 2 § 4, Ch. 3 §§ 1–3.

166 *See* 2 *id.* at Ch. 3 § 4. By 1932, one in four American banks had failed, including the Bank of the United States (not to be confused with the First or Second Bank of the United States), at the time the largest bank failure in history. *Id.* at Ch. 3. Within two years, the Securities Act of 1933, the Securities Exchange Act of 1934, and the Banking Act of 1933 (Glass-Steagall) would be passed. *See id*.

167 Glass-Steagall Act, Pub. L. No. 73–66, 48 Stat. 162 (codified in scattered sections of 12 U.S.C.). *See also* MELANIE L. FEIN, SECURITIES ACTIVITIES OF BANKS § 4.01 (3d ed. 1997).

168 In a regulated space, government rules often restrict entry of newcomers or give incumbent firms an advantage. *See* HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE § 19.2 (4th ed. 2011).

169 Soon, a wave of laws and decisions would attempt to clarify how much concentration was permissible in commercial banking. *See, e.g.*, Bank Holding Company Act of 1956, 12 U.S.C. § 1841–1852 (2012); Bank Merger Act of 1960, 12 U.S.C. § 1828 (2012); United States v. Philadelphia Nat'l Bank, 374 U.S. 321 (1963). The permissiveness of bank regulators in utilizing a public interest exception to approve mergers with anticompetitive effects was often out of step with antitrust regulators, who were less inclined to issue approvals. *See* Edward Pekarek & Michela Huth, *Bank Merger Reform Takes an Extended Philadelphia National Bank Holiday*, 13 FORDHAM J. CORP. & FIN. L. 595, 622–23 (2008).

Gradually, however, the dominance of banks over traditional commercial banking was eroded on two fronts. First, the rest of the financial industry innovated so quickly that many of the new products undercut the edge that banks had enjoyed as providers of credit. For example, credit card companies became an attractive alternative for small businesses.[170] Second, administrative orders slowly whittled away the demarcations separating commercial banking from other activities. Between the mid-1980s and 2008, regulators expanded the ability of banks and bank affiliates to engage in derivatives activities,[171] tie nontraditional bank products to credit,[172] trade proprietarily,[173] and merge with investment banks.[174] Commercial banks and nonbank financial institutions such as underwriters, credit cards, and mutual funds were once again owning each other and competing on equal footing.

This frenetic competition was widely blamed for the 2008 financial crisis. Critics charged that heady competition by banks led to a race to the bottom in lending—and once borrowers defaulted on poorly underwritten loans, the simultaneous positions that banks had taken in the secondary market *on those very loans* amplified losses.[175]

170 Pekarek & Huth, *supra* note 169, at 635–36.

171 Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the "Business of Banking"*, 63 U. MIAMI L. REV. 1041 (2009).

172 *See* Revisions Regarding Tying Restrictions, 60 Fed. Reg. 20186 (Apr. 25, 1995) (promulgating the "combined balance discount" safe harbor, which permitted the tying of nontraditional bank products); Chang, *supra* note 15.

173 *See* Dombalagian, *supra* note 4, at 515–18 (detailing regulation of proprietary trading prior to the Volcker Rule).

174 *See* Fed. Reserve Sys., Order Approving Formation of a Bank Holding Company and Notice to Engage in Nonbanking Activities, 96–97 (Sept. 23, 1998), *available at* http://perma.cc/B263-BGZC (permitting Travelers Group's acquisition of Citibank while retaining insurance underwriting and investment banking functions).

175 *See* Testimony of Professor Michael Greenberger, *Hearing Before the Financial Crisis Inquiry Commission Hearing Regarding the Role of Derivatives in the Financial Crisis* (2010), *available at* http://perma.cc/X7YH-NS67.

There were calls to reinstitute Glass-Steagall or some other bifurcation of commercial lending from riskier activities such as proprietary trading, private equity investments, and derivatives sales.[176] And yet regulators approved some of the largest mergers in banking history. After the failure of Lehman Brothers in September 2008, JPMorgan Chase purchased the investment bank Bear Stearns and savings bank Washington Mutual, while Citigroup and Wells Fargo acquired the banking operations of Wachovia. All were deals brokered by the Federal Reserve; all likely would have run afoul of banking and antitrust restrictions just a few years earlier. Facing hostility for bending their own rules, lawmakers and regulators resorted to the defense of exigency. Again and again, they argued that a financial crisis trumps normal competition and prudential concerns. This argument stemmed from a contrarian line of thinking that Glass-Steagall's repeal actually stabilized the financial industry,[177] but over time it was refined to a more general position that competition must yield to stability in times of crisis.[178]

176 *See* Tom Braithwaite & Shahien Nasiripour, *Ex-Citi Chief Weill Urges Bank Break-up*, FIN. TIMES, July 25, 2012, http://perma.cc/HP9J-24BN.

177 *See* Paul Saltzman et al., *A Spirited Conversation Assessing the Risks and Benefits of Big Banks*, 16 N.C. BANKING INST. 1, 7 (2012) (comments of John C. Dugan, Covington & Burling) ("[M]any of these stabilizing acquisitions [of troubled banks] and conversions [into bank holding companies] could not have been accomplished if Glass-Steagall were still in effect. Rather than causing the financial crisis, as some have asserted, the Glass-Steagall Act repeal actually helped dampen its effects by allowing these combinations at a very critical moment."). For additional theoretical support, see Fischel et al., *supra* note 116, at 320–21 (extrapolating from diversification in investing as a risk mitigator to argue for bank diversification beyond traditional banking activities).

178 *See* Iftekhar Hasan & Matej Marinč, *Should Competition Policy in Banking Be Amended During Crises? Lessons from the EU*, 14–16 (May 12, 2013), *available at* http://perma.cc/59KE-GWBS; Arthur E. Wilmarth, Jr., *The Transformation of the U.S. Financial Services Industry, 1975–2000: Competition, Consolidation, and Increased Risks*, 2002 U. ILL. L. REV. 215, 309 (2002) ("This nearly universal adoption of the TBTF policy reflects a general international consensus that governments must protect depositors

Throughout each of the above periods, there were spectacular bank failures and questionable mergers. If one can draw any conclusion at all on the causal connection between systemic soundness and competition, it is that antitrust routinely defers to how financial regulations have balanced these interests. The constant thread in the cycles of banking regulation is that bank regulators first lay the ground rules, and then antitrust regulators operate within those parameters.[179]

2. Empirical Evidence and the Case for Stable Clearinghouses

The academic literature is also inconclusive as to whether competition enhances or detracts from stability in the financial sector. In the benefits column are studies that show that competition weeds out inefficient banks, promotes bank monitoring and credit allocation, and increases sector specialization.[180] In the detriments column are studies that link competition to erosion in capitalization (a variation of the destructive rate competition argument) and to an increase in risk-taking (an argument that often surfaced during the financial crisis).[181] While the links between competition and stability may be unclear, some scholars have harmonized the disparate findings with these general thoughts: (i) competition may be more intense in some sectors and among certain banks than others (e.g., fiercer among the small circle of large banks than among the numerous regional banks); (ii) the benefits of competition may adhere more during normal times than during financial

and other payments system creditors of their major banks in order to avoid the risk of a systemic economic crisis.").

179 Outside of banking, securities regulations have also trumped antitrust. *See* Credit Suisse Securities (USA) LLC v. Billing, 551 U.S. 264 (2007) (collusive underwriting). Of course, this statutory deference is enshrined in antitrust law itself. *See* Shelanski, *supra* note 17. *Infra* Section IV.C briefly considers the balance between antitrust and regulation, but a full exploration is beyond the scope of this Article.

180 *See* Hasan & Marinč, *supra* note 178, at 2–3 and citations therein.

181 *See id.* at 3–4 and citations therein.

crises; and (iii) competition may strengthen the banking system more in the long run than in the short run.[182]

These principles suggest that the relationship between competition and stability may be at its most inverse during times of crisis. That is, in a financial crisis, the sheer scale of mergers and bailouts that regulators confront makes it likely that a vote for stability (via merger approval or government subsidy) is a vote *against* competition. After all, big banks are the TBTF institutions that tend to get bailed out; big banks also implicate higher levels of concentration and more antitrust concerns. For our purposes, the above three axioms lead to the following question: Which set of concerns should prevail in clearinghouse regulation—stability or competition? The answer hinges on a related question: In designing the clearinghouse system, are we building a regulatory framework for the worst of times, or simply one that hobbles along during normal times?

The answer must be that clearinghouses are meant to withstand the worst of financial crises. In fact, that spirit pervades Dodd-Frank, which touted clearinghouses as the panacea for most types of risk in the derivatives markets. In mandating clearing in markets that exchanges previously had not even served, the law leaned heavily on clearinghouses to backstop losses (and thereby impede panics) during market upheaval. As explored in the prior Subsection, clearinghouses can diffuse the fallout from losses by systemically significant parties in several ways. Losses are first mitigated by the out-of-the-money counterparty's margin, then mutualized among clearing members by the guaranty fund, then further mitigated by a capital call upon members and, if necessary, by access to the Discount Window.[183] This ability to slow the velocity of damage from a major trading loss is the key advantage of clearinghouses—

182 *Id.* at 5. Admittedly, the literature on competition versus stability tracks the banking sector much more closely than anywhere else. And while clearinghouses are different than banks, the findings on competition's effects on stability are nevertheless illuminating.

183 *See* Levitin, *supra* note 110, at 462.

and also what drove the legislative effort to push trading onto the clearing grid.[184]

These are the same features that LCH.Clearnet brought to the table as Lehman Brothers was collapsing in 2008, when Lehman affiliates defaulted on $9 trillion in interest rate swaps.[185] LCH.Clearnet, the dominant clearinghouse for interest rate swaps, utilized Lehman's margins to cushion losses before auctioning off Lehman's portfolio of positions.[186] Ultimately, LCH.Clearnet was able to minimize the damage to Lehman's counterparties and the broader interest rate swaps market, all without tapping the default fund.[187] LCH.Clearnet even managed to return some of Lehman's margin to the Lehman bankruptcy administrators.[188]

Our postulate that large clearinghouses are in the best position to weather financial crises is borne out in LCH.Clearnet's maneuvers to avoid the worst consequences of Lehman's default. And yet, as one of the world's largest clearinghouses, LCH.Clearnet owes its dominance to a spate of earlier combinations. The clearinghouse itself is the product of a 2003 merger between the storied London Clearing House and Clearnet, two European operations that specialized in commodities trades.[189] More recently, in 2012 the powerful London Stock Exchange (LSE) acquired a

184 *See, e.g.,* Levitin, *supra* note 110; Yadav, *supra* note 12; Kress, *supra* note 12.

185 *See* Natasha de Terán, *How the World's Largest Default Was Unraveled*, FIN. NEWS (Oct. 13, 2008), http://perma.cc/JB66-52TV; Press Release, LCH.Clearnet, $9 Trillion Lehman OTC Interest Rate Swap Default Successfully Resolved (Oct. 8, 2008), http://perma.cc/KFF6-L9WH; Allen, *supra* note 12, at 1089–90.

186 *See* Allen, *supra* note 12, at 1090.

187 *Id.*

188 *Id*.

189 LCH.CLEARNET GRP. LTD., REPORT AND CONSOLIDATED FINANCIAL STATEMENTS 3 (2005), http://perma.cc/CV99-XARG. Clearnet traces its lineage back to the long line of mergers in the French, Dutch, and Belgian markets that produced Euronext.

majority stake in LCH.Clearnet.[190] Under this new ownership, the entity moved almost immediately to purchase International Derivatives Clearing Group (IDCG) from NASDAQ OMX, a small but significant player in the United States.[191] These consolidations might have cleared antitrust review at each of these key junctures; however, they would have implicated serious anticompetitive concerns. LCH.Clearnet is a dominant player in the clearance and settlement of interest rate swaps, especially in Europe, where the LSE is a dominant and broadly diversified market maker.[192] Their combination and then subsequent acquisition of IDCG could have been interpreted as an effort to twice leverage their dominance elsewhere into dominance in the United States.

Regardless of why competition authorities blessed the LCH.Clearnet mergers, the proclivity of a dominant clearinghouse to engage in anticompetitive behavior need not be left to speculation. In 2011, the European Commission opened an investigation into whether ICE Clear Europe—the dominant clearinghouse for credit default swaps ("CDS") in Europe—excluded competitors from entering the CDS clearing and settlement market.[193] ICE Clear Europe had allegedly implemented a predatory pricing structure that locked in preferential fees and profit splits for nine large banks that constituted the largest CDS market makers in

190 *See* Press Release, London Stock Exch. Grp. PLC, Revised Offer to Acquire Majority Stake in LCH.Clearnet Group Limited (Mar. 7, 2013), http://perma.cc/6ADL-CPC5.

191 Nandini Sukumar & Matthew Leising, *LCH.Clearnet in Talks to Buy Nasdaq's Rate Clearinghouse*, BLOOMBERG NEWS (Apr. 24, 2012), http://perma.cc/E884-XQPU.

192 Lukas Becker et al., *A Brave New World*, RISK MAG. 3 (Jan. 2014), http://perma.cc/6KTE-F8XG (noting that CME Group's clearing volume for US dollar interest rate swaps accounts for only 67% of LCH.Clearnet's roughly $2 trillion a day); William Mitting, *Eurex Launch Intensifies OTC Clearing Battle*, FUTURES & OPTIONS WORLD (June 1, 2012), http://perma.cc/YZR2-WM6J; *Company Overview*, LONDON STOCK EXCH., http://perma.cc/CD3G-EWMD (last visited Oct. 11, 2014).

193 *See* European Comm'n, *supra* note 16.

the world.[194] As a result of these arrangements, the banks would have been disinclined to clear their trades with competitors of ICE Clear Europe.[195] Ultimately, the investigation was suspended in 2012 for lack of evidence.[196] Yet the "openness" of open-access clearing mandated by Dodd-Frank remains one of the pivotal concerns for clearinghouses.[197]

As the next Subsection will discuss, denial of access to clearing is the cardinal antitrust offense that cannot be tolerated for clearinghouses. Yet other trespasses might be forgiven. Indeed, to the extent that clearinghouses need to engage in these behaviors to attain dominance in multiple clearing markets, regulators may look the other way. The precise degree of permissiveness, though, must be determined as early as possible.

B. Natural Monopoly

The conundrum that regulators face with clearinghouses inheres in natural monopolies. To efficiently reduce counterparty credit risk, which precipitated the financial crisis, large clearinghouses must be allowed to flourish. But how can they do so without suffocating competition? Or, more accurately, what consequences cannot be tolerated in the establishment of naturally monopolistic clearinghouses?

This Subsection examines two instances in which the anticompetitive impulses of large clearinghouses cannot be tolerated: denial of access and leverage. Both are market failures of natural monopoly.

194 *Id.*

195 *Id.*

196 Foo Yun Chee, *EU regulators to suspend ICE, banks CDS probe*, REUTERS (Sept. 26, 2012), http://perma.cc/CJ2Q-Y9NM.

197 *See* Commodity Futures Trading Comm'n & Sec. & Exch. Comm'n, Public Roundtable on Governance and Conflicts of Interest in the Clearing and Listing of Swaps 144–45, Washington, D.C., Aug. 20, 2010 [hereinafter CFTC Roundtable].

1. The Market Failure of Natural Monopoly

In a natural monopoly, production by a single firm minimizes costs.[198] Contrary to a well-functioning market, competition does not lower prices, increase production, spur innovation, or otherwise benefit consumers. The average cost of production declines as more product is supplied, so it is more efficient to have one firm service the market than to duplicate expenditures.[199] Antitrust solutions to natural monopoly therefore permit single-firm dominance but regulate the firm closely to ensure that price correlates appropriately to cost.[200] Paradigmatic examples include air- and rail lines, electricity and natural gas generation and delivery, and telecommunications, where one or a very small number of producers are allowed to corner the entire market.

Clearing and settlement in most trading markets reflect the same single-firm dominance.[201] As explored above, the clearing market for each product is served almost entirely by one clearinghouse. Even in new markets characterized by an assortment of providers, the field of initial entrants is soon whittled down to a few large players. The larger a clearinghouse is, the more margin it can access, thereby lowering trading costs for member firms and outcompeting other clearinghouses.

198 LAWRENCE A. SULLIVAN & WARREN S. GRIMES, THE LAW OF ANTITRUST: AN INTEGRATED HANDBOOK 742 (West Academic Publ'g, 2d ed. 2006).

199 Shubha Ghosh, *Decoding and Recoding Natural Monopoly, Deregulation, and Intellectual Property*, 2008 U. ILL. L. REV. 1125, 1138–39 (2008). *See also* SANFORD V. BERG & JOHN TSCHIRHART, NATURAL MONOPOLY REGULATION: PRINCIPLES AND PRACTICE 21–24 (1988); DANIEL F. SPULBER, REGULATION AND MARKETS 3–5, 42–43 (1989).

200 *See* SPULBER, *supra* note 199, at 33–34.

201 *See* TURING, *supra* note 5, § 5.6(8) ("CCPs have strong natural monopoly characteristics . . . . Where only one CCP offers clearing for a particular product, all market participants are obliged to use that CCP. Incumbents have an overwhelming advantage over newcomers owing to the cost of switching.") (citation omitted) (internal quotation marks omitted).

Natural monopolies arise because the average cost of production declines with increasing supply.[202] This might be attributed to very high fixed costs or to negligible costs of producing an additional unit of product.[203] As more of the product is supplied to the market, average costs are driven down. Simultaneously, however, high fixed costs also increase the stakes, since competitors must capture nearly the entire market to recoup the initial investment or sunk costs. The risk of harm from destructive competition is simply too great, so regulators have traditionally permitted one firm to service the market—subject to intense oversight.

These forces were behind the SEC's decision to push the securities clearing industry toward one provider in the 1970s. The agency saw that back-office processing could be more efficient if centralized in one clearinghouse. Despite fears that NSCC, the progeny of the three largest exchanges in the country, would become a natural monopoly, the SEC granted NSCC's registration.[204] A Philadelphia-based competitor subsequently challenged this decision because it feared that the Wall Street-backed NSCC would limit the access of competitors of the three New York exchanges to erode the market share of other exchanges. In *Bradford v. SEC*, the D.C. Circuit upheld the registration of NSCC. The court accepted the SEC's policy rationale that competition concerns must yield to the necessity of a national clearing framework. Peppered by language to that effect, the opinion culled through the statutory language and legislative history of the 1975 Amendments to distinguish between a "national market" system (the exchanges) and a "national clearing"

202 *See* Ghosh, *supra* note 199, at 1138–39.

203 *Id*.

204 The Application of the National Securities Clearing Corporation for Registration as a Clearing Agency, Exchange Act Release No. 13163, 11 SEC Docket 1448, 1471 (Jan. 13, 1977); Larry E. Bergmann, Sr. Assoc. Dir., Div. Mkt. Regulation, Sec. and Exch. Comm'n, Speech at the International Securities Settlement Conference (Feb. 10, 2004),*available at* http://perma.cc/TKL7-PVVQ.

system (the clearinghouses).[205] Whereas the former included enhancement of competition in its objectives, the latter merely listed competition as one among several factors to which the SEC was to give "due regard," but not supreme consideration, in the achievement of centralizing the processing of securities trades.[206]

Nearly three decades later, the same debate would surround the creation of derivatives clearinghouses. The legislative mandate for DCOs trumpeted stability and risk-mitigation above all other concerns. Nonetheless, Dodd-Frank also upheld competition as a key consideration.[207] In debates over what the derivatives clearing system should look like, small derivatives sellers expressed fears that the dominant dealers would leverage their control over DCOs to shut out competitors from the execution market.[208] This might occur in two ways: DCOs could either charge lower fees to clear member trades, which then raises trading prices for nonmembers; or DCOs could raise the standards of membership so high as to preclude small players from joining. While guidelines are built into Dodd-Frank to prohibit anticompetitive practices, some of this cannot be avoided—particularly the use of membership standards to conceal anticompetitive behavior. Recognizing that DCOs must set benchmarks of stability for admission, Dodd-Frank has set the minimum capitalization requirement that DCOs can impose on members at no more than $50 million.[209] This rule was likely proposed in response to LCH.Clearnet's highly publicized minimum capitalization threshold of $1 trillion for membership.[210] Nonetheless, there are other ways in which competition can be gamed in the name of risk mitigation.

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205 Bradford Nat'l Clearing Corp. v. SEC, 590 F.2d 1085, 1095–96 (D.C. Cir. 1978).

206 *Id.* at nn. 12, 13 & 33.

207 *See* 7 U.S.C. § 7a-1(c)(2)(N) (2012).

208 *See* CFTC Roundtable, *supra* note 197, at 19, 31.

209 *See* CFTC, *Risk Management Requirements for DCOs*, *supra* note 119, at 3701 (discussing proposed 17 C.F.R. § 39.12(a)(2)(iii)).

210 *See* TURING, *supra* note 5, § 5.6(3).

Ultimately, as with NSCC, competition concerns are secondary to risk mitigation.[211] Hence, in the battles over DCOs, the terms *public utility* and *natural monopoly* have reentered the conversation.[212]

2. Antitrust Remedies for Natural Monopoly

The traditional antitrust response to natural monopoly has been public utility regulation, where a producer is granted a monopoly in exchange for intimate regulation, typically of the rates charged to consumers.[213] Applied to clearinghouses, such a framework would subject cost and fee structures to regulatory oversight, as well as public hearings if those structures change. Clearing and settlement rates would be evaluated periodically to ensure that they are adjusted as cost fluctuates. The benefit of rate regulation is that end-users of financial products would not be subjected to inflated prices or price discrimination. NSCC, for example,

211 *See* CFTC Roundtable, *supra* note 197, at 67:

> At the end of the day, the point about this is to reduce systemic risk to the system and give people access to better counterparty controls and have less credit risk. We hope in that process this is viewed as a utility, but, you know, competition should be -- while it's important should be secondary to ensuring that the system does not become more risky. (Comments of Roger Liddell, CEO, LCH ClearNet Group)

See also id. at 71:

> The reason there is a mandate for clearing in Dodd-Frank is to make the financial system more stable, and I realize there are conflicts that have to be dealt with, but I have never heard the Dodd-Frank Act described as, you know, an act that was aimed at, you know, simply promoting competition among financial institutions. (Comments of Jonathan Short, ICE Trust)

212 *See id.* at 67 (comments of Roger Liddell); Singh, *supra* note 110, at 17–28; Levitin, *supra* note 110, at 445 n.75; Tucker, *supra* note 110, at 12. It is slightly inaccurate to mention public utility alongside natural monopoly. Public utility is more aptly thought of as a solution to natural monopoly's market failures.

213 *See* SPULBER, *supra* note 199, at 271–79.

has long maintained that it offers clearing services at cost;[214] still, the cost structures of clearinghouses may not be altogether transparent or straightforward.[215] Public hearings would confer the added benefit of shining light on an industry that is not well understood.[216] Meanwhile, rate regulation would ensure that clearing services are affordably priced, by preventing clearinghouses from disguising high prices (and high profit margins) as costs of compliance with Dodd-Frank's risk management requirements. If clearing prices were truly held at or very close to a clearinghouse's costs, then access to clearing services would be broadened.

But public utility treatment of clearinghouses is untenable. In general, public utilities are conferred the right to engage in practices that would otherwise be prosecuted as monopolization. As with other monopolies, a dominant clearinghouse has little incentive to devise improvements to its processes.[217] More specific to the clearing industry, it is very difficult for regulators to effectively monitor and set rates. Regulators simply may not have the expertise to gauge

214 *See* Crystal Bueno, *More Transparency on Clearing Costs*, DTCC CORP. NEWSLETTER, Aug. 2009, http://perma.cc/XED2-JLZ9. That contention was challenged, however, by NASDAQ as it tried to establish a rival clearinghouse to NSCC's "monopoly." NASDAQ's venture never took off though, in part because NSCC instituted price reductions beforehand. *See Nasdaq Drops Clearing Initiative*, SEC. TECH. MONITOR, Nov. 2, 2009, http://perma.cc/83CR-ZRSS.

215 *See Nasdaq Drops Clearing Initiative*, *supra* note 214. NSCC's price reductions might smack of price predation, a claim that the clearinghouse has encountered before. *See* Letter from Charles Douglas Bethill, Thacher Proffitt & Wood, to Jonathan G. Katz, Sec'y, Sec. and Exch. Comm'n (Feb. 2, 2004), *available at* http://perma.cc/SL8N-5ZV3.

216 Further complicating the cost issue is the fact that pricing for clearinghouses seems to be entwined with pricing in the execution market. On CFTC proposals for price transparency in trade execution, as well as efforts to derail those proposals, see Swap Execution Facility Clarification Act, H.R. 2586, 112th Cong. (2012); Karen Brettell, *CFTC Will Enforce Trade Price Transparency—Gensler*, REUTERS (May 2, 2013), http://perma.cc/SH7A-MFPQ.

217 SULLIVAN & GRIMES, *supra* note 198, at 742, 747.

appropriate pricing,[218] and clearinghouses might evade rate regulation by increasing prices in another market controlled by an affiliate—for example, in settlement or market-making. Hand in hand with the difficulty of rate regulation are the natural ebbs and flows to the scope of the utility's monopoly power. Over time, for instance, a dominant player's position might be eroded by technological advances which enable rivals to lower their prices and compete more effectively.[219] If so, then the setting of rates by regulation might be counterproductive, coddling anachronistic enterprises so as to stifle beneficial competition.

Over the last few decades, antitrust has become comfortable with a lighter regulatory touch. A slew of case law and academic commentary against the inefficiencies of public utility has resulted in the consensus that this regime is excessively cumbersome.[220] For natural monopolies, the movement has been away from heavy-handed public utility regulation and toward regimes where regulators sit back and let competitors do most of the work, intervening only where the bottleneck inherent in a natural monopoly might be manipulated to stifle competition.[221] One such regime is the essential facilities doctrine, a version of which already appears in Dodd-Frank.

218 On the general dearth of regulatory expertise regarding the clearing and settlement of OTC derivatives, see Dan Awrey, *Regulating Financial Innovation: A More Principles-Based Proposal?*, 5 BROOK. J. CORP. FIN. & COM. L. 273, 307–08 (2011).

219 The rise of ICE, for instance, is often attributed to the conglomerate's embrace of technology. Interestingly, as an upstart in the early 2000s, it was ICE that accused NYMEX of monopolization. *See* New York Mercantile Exch., Inc. v. InterContinental Exch., Inc., 323 F. Supp. 2d 559, 560 (S.D.N.Y. 2004).

220 *See, e.g.*, PROMOTING COMPETITION IN REGULATED MARKETS (Almarin Phillips ed., 1975).

221 Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323, 1361 (1998).

While disagreement persists over the vitality of the essential facilities doctrine,[222] courts and commentators agree as to its elements: (i) a monopolist controls an essential facility which (ii) a competitor is unable practically or reasonably to duplicate, and (iii) use of the facility is denied to a competitor even though (iv) it is feasible for the monopolist to provide access to the facility.[223] If clearinghouses were treated as essential facilities, clearinghouses would have to grant open, nondiscriminatory access to traders; where access is denied, either regulators or competitors would be able to bring actions if they could satisfy the above elements.

To some extent, this framework—where regulators simply set the "background rules" for industry behavior and then allow competition among rival producers to provide "the protection necessary for end-users"[224]—already exists. Dodd-Frank has mandated open-access rules for all clearinghouses.[225] On the enforcement front, at least one derivatives dealer has claimed that large clearinghouse members corner the trading market by restricting access to

222 *Compare* United States v. Terminal R.R. Ass'n of St. Louis, 224 U.S. 383, 411–13 (1912) (seminal case on equal and nondiscriminatory access, though the term *essential facilities* was not used), *and* Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 611 (1985) (affirming verdict for plaintiff but declining to address the essential facilities issue), *and* Otter Tail Power Co. v. United States, 410 U.S. 366, 382 (1973) (finding that an electric power utility's refusal to sell wholesale power or transmission services to a competing municipal utility constituted monopolization, though the term *essential facilities* was not used), *with* Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko LLP, 540 U.S. 398, 410–11 (2004) ("We have never recognized [the essential facilities] doctrine, and we find no need either to recognize it or to repudiate it here."). *See also* Brett Frischmann & Spencer Weber Waller, *Revitalizing Essential Facilities*, 75 ANTITRUST L.J. 1, 4–8 (2008); Glen O. Robinson, *On Refusing to Deal with Rivals*, 87 CORNELL L. REV. 1177, 1183–84 (2002).

223 MCI Commc'ns Corp. v. AT&T Co., 708 F.2d 1081, 1132–33 (7th Cir. 1983).

224 Kearney & Merrill, *supra* note 221, at 1361.

225 *See* 7 U.S.C. § 7a-1(c)(2)(C) (2012); CFTC, *Risk Management Requirements for DCOs*, *supra* note 119, at 3700–01.

clearing.[226] Yet neither the statutory hook nor the private action has used the term *essential facility*. Despite the controversy surrounding essential facilities in general antitrust circles, this framework can be useful in supplementing the regulation of clearinghouses by, among other things, giving shape to the open-access obligation and clarifying when rivals of clearinghouse members might be able to pursue a private right of action.

Central to the appropriateness of borrowing from the essential facilities doctrine, of course, is whether clearinghouses are even essential facilities. The simple answer is yes—they are essential to trading in securities and derivatives. Gone are the days when clearinghouses were tied only to exchange-traded products; with Dodd-Frank's universal clearing requirement, clearinghouses have become integral to the OTC derivatives market as well. Other than a few technical exceptions, no securities or derivatives trade can be completed without involving a clearinghouse.[227]

The more interesting takes on clearinghouse essentiality come by way of analogy. Clearinghouses are commonly referred to as the "plumbing" of the financial architecture.[228] Where they are required, they play a fundamental part in ensuring the execution of trades. It might be mere coincidence that the clearing and settlement function is likened to plumbing, just as it is that Title VIII of Dodd-Frank coined the term "utility" to describe certain trade-processing entities such as clearinghouses.[229] However, in these coincidences there is metaphor. Just as plumbing is a

226 *See* Complaint, MF Global Capital LLC v. Bank of America Corp., No. 1:13-cv-5417, 2013 WL 7210066 (N.D. Ill. July 29, 2013).

227 Dodd-Frank includes exceptions for some end-users as well as for hedging purposes. Of course, critics have charged that these exceptions are large enough to frustrate the spirit behind the law. *See* William F. Kroener III, *Derivatives Reforms, in* DODD-FRANK FINANCIAL REFORM AND ITS IMPACT ON THE BANKING INDUSTRY 247 (ALI-ABA, ed., 2010).

228 Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Remarks at the 2011 Financial Markets Conference: Clearinghouses, Financial Stability, and Financial Reform (Apr. 4, 2011), *available at* http://perma.cc/N6TW-LUPC.

229 *See* 12 U.S.C. § 5462 (2012).

function essential to property ownership that works better when overseen by a public entity (e.g., hooked up to a city sewer line), clearing is an essential part of trading that works better if more types of trades are routed through one clearinghouse. The most apt description of a clearinghouse, then, is a behind-the-scenes infrastructure that supports trading.

Infrastructures are well suited for essential facilities treatment.[230] Their primary value derives not from the immediate benefits of consumption but from the productive downstream use of the infrastructure.[231] As applied to clearinghouses, the argument is that collectively, the clearing infrastructure generates value for the financial markets by injecting stability into the trading of often-volatile products. Clearinghouses buffer one set of counterparties from default by the other set, and clearinghouses also enable end users to hedge against risk. These are unquantifiable benefits best protected by open, nondiscriminatory access.

If clearinghouses are an essential facility for trading, then what might denial of use of clearinghouses look like?

A clearinghouse is comprised of members who must meet capitalization and other requirements and pay into a guaranty fund in order to clear trades. The most powerful clearinghouse members are large banks, which tend to be the dominant market makers in OTC derivatives.[232] Nonmembers can only clear trades by going through a member. Within this framework, denial of use might occur if incumbent members set membership requirements so high as to bar smaller institutions from being able to join. In our hypothetical of the mid-size Midwestern bank and the goliath New York bank, assume that both banks sell derivatives but only the big bank belongs to a clearinghouse. Then, with all else being equal, the regional bank would

230 *See* Frischmann & Waller, *supra* note 222, at 11–18.

231 *Id.* at 14.

232 Griffith, *supra* note 12, at 1190–1204; Yadav, *supra* note 12, at 425.

have a higher markup on its products because it would have to pay a clearinghouse member in order to clear trades.

Lack of access to clearing and settlement threatens the viability of smaller sellers of derivatives. Now that clearing has been mandated for almost all trading, access to clearinghouses has become a primary concern. In both Europe and the United States, suppression of competition in the market-making of credit default swaps has allegedly come by way of denial of access to clearinghouses.[233]

C. Future Questions

Borrowing concepts from antitrust to enhance clearinghouse regulation implicates several questions. This Article highlights only a few of them for future exposition.

First, what incentives are created for consumers of clearinghouses—end-users, hedgers, and even speculators in derivatives—if these intermediaries are treated as essential facilities? Competition depresses prices, which would be the expected outcome for open-access clearing.[234] Yet foundational works on natural monopolies justified their regulation on the bases of sunk costs *and* public goods. That is, natural monopolies must provide highly useful services such as electricity that cannot be widely dispensed without government protection from competition.[235] The question of whether clearing is a public good is far from settled, especially if the clearing grid makes it easier to transact in instruments (specifically, OTC derivatives) associated with financial crises.

Second, even if the essential facilities approach is justifiable, what are the remedies for violation? If the

233 *See* Complaint at 21, MF Global Capital LLC v. Bank of America Corp., No. 1:13-cv-5417, 2013 WL 7210066 (N.D. Ill. July 29, 2013). Plaintiffs' attorneys even state that clearing is "essential," though they do not use the term "essential facilities." *Id.* *See* European Comm'n, *supra* note 16.

234 *See* Erik Gerding, *Derivatives: Learning to Love Anti-competitive Behavior?*, THE CONGLOMERATE (Aug. 2, 2013), http://perma.cc/BLJ7-77UB.

235 *See* SPULBER, *supra* note 199, at 4.

concept of open, nondiscriminatory access is protean, the remedy of the essential facilities doctrine is even more so. In *United States v. Terminal Railroad Association*, the seminal case on essential facilities, the Supreme Court struggled with this very issue. Short of divestiture, what was the proper scope of a consent decree meant to address the acquisition by a dominant operator of railroad lines of the railroad terminals surrounding St. Louis?[236] This question of remedies has vexed subsequent courts.

Third, what types of international coordination are necessary to give force to domestic regulation? Given the global nature of today's financial markets, financial intermediaries often have their pick of regulatory jurisdictions.[237] To pre-empt regulatory arbitrage, the CFTC, SEC, and U.S. antitrust authorities must understand European approaches to natural monopoly.[238]

Finally, what is the proper balance between antitrust and clearinghouse regulations? Dodd-Frank contains a savings clause that expressly preserves antitrust enforcement.[239] While in theory the savings clause permits the cohabitation of antitrust and regulation, in reality the force of such

236 *See* United States v. Terminal R.R. Ass'n, 224 U.S. 383, 411–13 (1912); Abbott B. Lipsky, Jr. & J. Gregory Sidak, *Essential Facilities*, 51 STAN. L. REV. 1187, 1195–96 (1999) ("Terminal Railroad is particularly notable for the remedial path that the Court specifically declined to take . . . . If the competitive independence of the various terminal companies and bridge owners could have been restored, it seems obvious that it would have been preferable from the perspective of consumer welfare to have done so, rather than rely on a remedy that required the creation of a permanent mechanism for control of the combination's undisputed monopoly power by continuous monitoring and adjustment of the rates, terms, and conditions of ownership and use.").

237 *See, e.g.*, BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENTS AND CAPITAL STANDARDS 219 (2006), *available at* http://perma.cc/X3LG-5ELY; Enhanced Risk Management Standards for Systemically Important Derivatives Clearing Organizations, 78 Fed. Reg. 49,663, 49,671 (Aug. 15, 2013) (to be codified at 17 C.F.R. pt. 39).

238 On the possibility of treating European clearinghouses as essential facilities, see TURING, *supra* note 5, § 7.8.

239 *See* 12 U.S.C. § 5303 (2012).

clauses has been muddled by Supreme Court decisions.[240] The next test of how antitrust laws apply to regulated industries might well come as a challenge to the dominance of clearinghouses. In anticipation of that development, clearinghouse scholars could take up that *re*balance now.

V. CONCLUSION

Financial regulators have taken disparate approaches to the oversight of banks and clearinghouses. Even though these two intermediaries play vastly different roles and are characterized by different core traits, both have become systemically important due to their size and connectivity. Yet banks today are regulated under a rubric that reins in sophistication and tries to eradicate TBTF, while growth and assumption of risk are tolerated for clearinghouses without similar measures being taken to prevent TBTF.

The paradox and ancillary issues explored in this Article can be boiled down to two simple questions: why does the paradoxical regulation of banks and clearinghouses exist, and who benefits from it?

The first question is straightforward. Regulators have prioritized mitigating certain risks over others—specifically, counterparty credit risk over systemic risk—in the trading markets. To effectively guarantee and efficiently net counterparty obligations, clearinghouses must be large and interconnected and therefore systemically significant.

As for the second question, the beneficiaries are the large banks that control clearinghouses. Because regulators have prioritized credit risk mitigation over antitrust considerations, they must also tolerate the anticompetitive effects of clearinghouses—which, due to economies of scale, are natural monopolies. Yet if financial regulators incorporate antitrust principles, then it will be less likely that a clearinghouse will be used as an instrument of dealer leverage.

240 *See* Shelanski, *supra* note 17.