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Sean J. Griffith

Fordham University School of Law, sgriffith@law.fordham.edu

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GOVERNING SYSTEMIC RISK: TOWARDS A GOVERNANCE STRUCTURE FOR DERIVATIVES CLEARINGHOUSES

Sean J. Griffith*

ABSTRACT

Derivatives transactions create systemic risk by threatening to spread the consequences of default throughout the financial system. Responding to the manifestations of systemic risk exhibited in the financial crisis, policy-makers have sought to solve the problem by requiring as many derivatives transactions as possible to be “cleared” (essentially guaranteed) by a clearinghouse. The clearinghouse will centralize and, through the creation of reserve accounts, seek to contain systemic risk by preventing the consequences of default from spreading. This centralization of risk makes the clearinghouse the new locus of systemic risk, and the question of systemic risk management thus becomes a question of clearinghouse governance. Unfortunately, each of the likely players in clearinghouse governance—dealers, customers, and investors—has significant incentive problems from the perspective of systemic risk management. I will argue that the policy-makers’ responses to these problems—focusing on voting caps and director independence—are inadequate to address the problem of systemic risk inherent in derivatives transactions. I argue, instead, in favor of the adoption of a new board structure more reflective of the public-private role of clearinghouses and suggest that models for this new governance structure can be found outside of traditional U.S. corporate governance norms in the dual-board structure of continental Europe.

* T.J. Maloney Chair in Business Law, Fordham Law School, and Director, Fordham Corporate Law Center. For their comments and suggestions on earlier drafts, thanks to Daniel Awrey, Martin Gelter, Yuliya Guseva, Kristin Johnson, Ruben Lee, Frank Partnoy, Elliot Ross, Richard Squire, Chuck Whitehead, and participants at the Fordham Global Finance Symposium and the Fordham Law School Faculty Retreat. For superlative research assistance, thanks to Arthur Lotz, Kirill Kan, David Murdza, Hannah Steinblatt, and Luba Waeldner. The viewpoints and any errors expressed herein are the author’s alone. Many of the rules referred to in this Article were not in final form as of this writing, and although every effort has been made to update references throughout the editorial process, total currency cannot be ensured in a dynamic rulemaking environment.

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INTRODUCTION

Derivatives are newly controversial, but they are not new. Derivatives transactions have been going on in the United States since at least 1848 and in Japan since at least 1730,¹ and by some estimates, derivatives go back much further than that.² Recently, however, derivatives have become a magnet for controversy, having been famously labeled “financial weapons of mass destruction” and implicated in the near destruction of the global financial system in 2008.³ As a result, they have become a target for regulatory reform.

Derivatives are all about risk. They are, at their core, nothing more than contracts by which parties agree to transfer the risk of an underlying asset or pool of assets.⁴ However, in providing a means for this transfer of risk, derivatives create a second risk—the risk of default on the contract.⁵ This second risk—counterparty credit risk—is inherent in derivatives transactions and is the basic way in which derivatives contribute to systemic risk.⁶

In targeting derivatives for regulatory reform, policy-makers have fastened upon the idea of centralizing counterparty credit risk in a single place—a clearinghouse—where it can be supervised and managed. A clearinghouse is a public–private solution to the problem of systemic risk. Funded with private capital to serve both commercial ends and the public purpose of containing systemic risk, clearinghouses provide a means for monitoring derivatives trades and, more importantly perhaps, for building reserves against default so that, if one party to a derivatives transaction defaults on its contractual

¹ See generally Don M. Chance, *A Chronology of Derivatives*, DERIVATIVES Q., Winter 1995, at 53, 54 (describing the founding of the Chicago Board of Trade and the operations of the Dojima Rice Exchange).

² See ARISTOTLE, *Politics*, in THE BASIC WORKS OF ARISTOTLE bk. I, ch. 11, at 1142 (Richard McKeon ed., Benjamin Jowett trans., Random House 1941) (c. 350 BCE) (noting the financial “device” attributed to Thales of Miletus, who effectively purchased an option on all the olive presses in Chios and Miletus ahead of a banner harvest).

³ See BERKSHIRE HATHAWAY INC., 2002 ANNUAL REPORT 15 (2003), available at <http://www.berkshirehathaway.com/2002ar/2002ar.pdf>. On the guilt that derivatives bear for the financial crisis, see *infra* Part I.B.

⁴ See ERIK BANKS, *THE CREDIT RISK OF COMPLEX DERIVATIVES* 10 (3d ed. 2004) (“Fundamentally, institutions enter into derivative transactions to protect against, or take advantage of, market volatility; this can be accomplished by establishing simple or compound derivative hedge or speculative positions in particular markets. If successful, the derivative position provides the necessary protection or payoff; if unsuccessful, it can result in a loss.”).

⁵ See ANTULIO N. BOMFIM, *UNDERSTANDING CREDIT DERIVATIVES AND RELATED INSTRUMENTS* 267 (2005) (“In the context of the credit derivatives market, counterparty credit risk refers mainly to the chance that a protection seller will fail to make good on its promise to make previously agreed-upon payments in the event of qualified defaults by reference entities.”).

⁶ See generally SCHUYLER K. HENDERSON, *HENDERSON ON DERIVATIVES* 402–04 (2d ed. 2010).

obligation, the consequences of the default will be contained within the clearinghouse and not spread throughout the broader financial system.⁷ For this strategy of containment to work, however, much depends upon how the clearinghouse is governed. Specifically, much depends on how the clearinghouse models the risk of derivatives instruments, what the clearinghouse requires of its members in terms of credit quality and contributions to collateral and reserve funds, and what products the clearinghouse accepts for clearing.⁸ These are core issues of risk management, and they depend ultimately on clearinghouse governance.

Recognizing that clearinghouse governance is critically important for the management of systemic risk, policy-makers have sought to engineer governance structures for clearinghouses. Unfortunately, the policy-makers' proposals have generally failed to address the pervasive free-riding problem underlying clearinghouse governance.⁹ Because no private party stands to enjoy a benefit equal to the costs of controlling systemic risk, no private party can be expected fully to internalize these costs.¹⁰ Worse, each of the major commercial interests involved in derivatives clearing faces a moral hazard problem—an incentive to engage in excessive risk taking as a result of the fact that a significant portion of the cost of that party's actions are borne by others.¹¹ These incentive problems are a fundamental outgrowth of the public-private nature of the clearinghouse.

This Article argues that solving the riddle of clearinghouse governance requires us to look outside of the confines of traditional American corporate

⁷ See DAVID LOADER, CLEARING AND SETTLEMENT OF DERIVATIVES 35 (2005) (“In general terms the role of the clearing house is to act as a counterparty to both sides of the trade thereby breaking the direct counterparty relationship between the two trading counterparties. It is fundamental to the integrity and credibility of the market for which it operates, as its purpose is to guarantee the performance of each and every transaction.”).

⁸ See *id.* at 43 (“A very significant role of the clearing house is managing the risk created by the transactions on the exchange. From setting the criteria for membership of the clearing house to establishing default rules, using margin systems and requiring daily settlement of resulting obligations of all members, the clearing house controls the risk that the exchange, the members and the users of the market face.”).

⁹ See generally Craig Pirrong, The Economics of Clearing in Derivatives Markets: Netting, Asymmetric Information, and the Sharing of Default Risks Through a Central Counterparty (Jan. 8, 2009) (unpublished manuscript), available at <http://ssrn.com/abstract=1340660> (noting that the formation of a central clearing party reduces the incentives dealers have to monitor other dealers).

¹⁰ See *id.* (manuscript at 55) (noting that, although dealers stand to benefit from fewer losses from default of a counterparty, clearing creates a contagion effect of spreading losses among individual dealers).

¹¹ See generally PAUL KRUGMAN, THE RETURN OF DEPRESSION ECONOMICS AND THE CRISIS OF 2008, at 63 (2009) (describing moral hazard as “any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly”).

governance mechanisms. A model for the delicate public–private balance of clearinghouse governance can be found instead in continental Europe. The supervisory board structure of the German public corporation offers a model for establishing a class of directors separately accountable to the public purpose of managing systemic risk. This Article articulates the advantages of this governance model as a means of addressing the unique context of derivatives clearinghouses, developing specific recommendations in hopes of influencing policy-makers going forward.

From this Introduction, the Article proceeds as follows. Part I examines the connection between derivatives and systemic risk, describing the role of derivatives in the financial crisis of 2008 and the focus of the reforms that followed in its wake. Part II looks more closely at the problem of clearinghouse governance, reviewing the incentives of each of the private parties with an interest in clearinghouses and finding pervasive free-riding and moral hazard problems among these parties. Part III then reviews the attempts of policy-makers to address these incentive problems and critiques their choice of fairly standard governance mechanisms that fail ultimately to address the underlying problems of free-riding and moral hazard. Part IV then outlines a set of recommendations for establishing a formal body separately accountable to the public purpose of controlling systemic risk, drawing support for this recommendation from the governance structure of the German public corporation and from various suggestions of domestic regulators. The Article closes with a summary and conclusion.

I. DERIVATIVES AND SYSTEMIC RISK

The clearinghouse structure currently being contemplated by policy-makers and market participants arises from a particular context of crisis and reform. Ultimately, to understand the clearinghouse governance issue, it is necessary to first understand that larger regulatory context, including the ways in which risk inheres in derivatives instruments and derivatives transactions, and the role of those instruments and transactions in contributing to the global financial crisis of 2008. This Part seeks to provide that contextual background, offering first a short introduction to derivatives, followed by an overview of the role of derivatives in the global financial crisis and a brief description of the legislative and regulatory efforts that followed fast upon it. The discussion that follows will reveal counterparty credit risk as the fundamental risk associated with derivatives transactions, and it will introduce the clearinghouse as the solution to this basic risk inherent in derivatives transactions.

A. *A Short Introduction to Derivatives*

Fundamentally, a derivative is nothing more than a contractual means by which parties allocate the risk of a fluctuation in price of an underlying reference value.¹² The reference value can be infinitely many things—an interest rate or exchange rate, an index of bonds or mortgage-backed securities (MBSs), commodity prices, or the weather.¹³ In the contract, the two sides, or counterparties, commit to one or several payments at some time in the future, the amount of which will depend upon the value of the underlying reference value at that time.¹⁴ This exchange of payments thus allows the counterparties to reallocate risk.¹⁵ The transfer of risk can be used to mitigate risk, as a farmer might seek to hedge fluctuations in grain prices or a banker might seek to hedge interest rate risk or to take risk on—to speculate.¹⁶ Moreover, it is important to realize that, although *speculation* is treated by some as a dirty word,¹⁷ both hedging and speculation are vital features of a working financial system—hedging because it enables parties to eliminate unwanted risk, and speculation because it speeds price discovery and, therefore, market efficiency.¹⁸

¹² See HENDERSON, *supra* note 6, at 5 (“A derivative is, simply, a financial arrangement the value of which is ‘derived’ from another financial instrument, index or measure of economic value.”).

¹³ See ROBERT W. KOLB & JAMES A. OVERDAHL, FINANCIAL DERIVATIVES: PRICING AND RISK MANAGEMENT 16 (2010) (explaining how structured products—like securities that result from the securitization process and have been successfully created with portfolios of mortgage, automobile, and boat loans as well as credit derivatives—relate to derivatives contracts); Norman Menachem Feder, *Deconstructing Over-the-Counter Derivatives*, 2002 COLUM. BUS. L. REV. 677, 687 n.16 (discussing various instruments, such as weather derivatives and environmental derivatives).

¹⁴ See KOLB & OVERDAHL, *supra* note 13, at 16–19.

¹⁵ See *id.* at 575–82 (discussing the use of derivatives to manage risks associated with interest rate fluctuations).

¹⁶ See *id.*

¹⁷ See Lynn A. Stout, *Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives*, 48 DUKE L.J. 701, 703 (1999) (“The public disapproves of speculators. So, traditionally, does the law.” (footnote omitted)).

¹⁸ Price discovery is the process by which trading in a market incorporates new information and market participants’ expectations into asset prices. KOLB & OVERDAHL, *supra* note 13, at 57. As a result of relatively low transaction costs and high liquidity of many derivatives markets, new information about assets is often reflected in derivatives prices first. *Id.*; see also Roberto Blanco et al., *An Empirical Analysis of the Dynamic Relation Between Investment-Grade Bonds and Credit Default Swaps*, 60 J. FIN. 2255 (2005) (providing an empirical study showing that the credit-default-swap market makes bond pricing more efficient); Arturo Bris et al., *Efficiency and the Bear: Short Sales and Markets Around the World*, 62 J. FIN. 1029 (2007) (providing a cross-sectional time-series analysis strongly supporting the view that short selling facilitates efficient price discovery).

1. Trading Underlying Risk

Derivatives trade in the sense that the underlying risk packaged in any particular derivative instrument can be decomposed, repackaged, and resold in a variety of forms. What the counterparties exchange is not typically a prepackaged financial instrument, as when securities traders sell shares of stocks or bonds, but is rather a portion (or all) of one or the other positions (long or short) on the underlying risk.¹⁹ Highly standardized derivatives, such as futures and most options, may be traded on exchanges, such as the Chicago Board of Trade or the London International Financial Futures and Options Exchange.²⁰ The rest of the derivatives world, however, trades only bilaterally: that is, on the basis of separately negotiated transactions between sellers—typically major financial institutions acting as dealers—and buyers—often the “end users” of the instrument who take a position on the underlying risk either for purposes of hedging or speculation.²¹ Because the transacting parties are effectively negotiating a new contract, either side (long or short) of the risk of the underlying reference asset may be transferred, in whole or in part, in a wide variety of ways. This form of derivatives transaction, in which trades are privately negotiated, rather than traded through an exchange, is referred to as the “over-the-counter” (OTC) derivatives market.²² And, as we shall see, all of the recent controversy in derivatives transactions has surrounded OTC derivatives generally and credit default swaps (CDSs) in particular.

In a typical swap contract, as the name suggests, counterparties exchange positions on the risk of the underlying asset. For example, in an interest rate swap, one party pays the other if interest rates rise and receives payments from the other if interest rates fall.²³ A party with interest rate exposure, either

¹⁹ Unlike traditional securities trading, where sellers must either own or be able to buy or borrow securities in order to sell them, the sell side of derivatives transactions effectively creates the instrument by agreeing to one position or the other on the risk. See Darrell Duffie, *The Failure Mechanics of Dealer Banks*, J. ECON. PERSP., Winter 2010, at 51, 55–58 (2010) (describing the mechanics of trading in over-the-counter (OTC) derivatives).

²⁰ See KOLB & OVERDAHL, *supra* note 13, at 21 (explaining that exchanges trade standardized derivatives through a centralized structure that is organized to promote liquidity and to mutualize credit risk).

²¹ Randall Dodd, *The Structure of OTC Derivatives Markets*, 9 FINANCIER 41, 41–44 (2002).

²² See Duffie, *supra* note 19, at 56–58. OTC derivatives transactions may also take place among dealers and, less frequently, among end users. *Id.* at 56.

²³ In a fixed-for-floating interest rate swap, a firm that is concerned about its exposure to interest rate fluctuations, due perhaps to an obligation to *make* payments based on a floating interest rate, might contract with a swap dealer to pay a fixed rate of interest in exchange for being paid the floating rate. See ROBERT E. WHALEY, DERIVATIVES 652–54 (2006). In this way, the firm effectively eliminates its interest rate risk, essentially exchanging a floating for a fixed rate. *Id.* As the counterparty to the swap, the dealer takes on the risk of fluctuations in interest rates but generally not for long, because the dealer will typically seek to enter

through borrowing or lending, can effectively cancel out this risk by taking the opposite position in a swap or, if they have a view about what interest rates are likely to be in the future, using a swap to speculate on their prediction.²⁴ In either case, the swap effectively transfers the risk of fluctuation in interest rates from one party to the other.

Similarly, a credit derivative is a privately negotiated agreement that explicitly transfers credit risk from one party, the “protection buyer,” to another, the “protection seller.”²⁵ Credit derivatives come in a variety of forms,²⁶ but the credit default swap has recently attracted much attention.²⁷ In a credit default swap, the protection buyer pays a fee, or “spread,”²⁸ to the protection seller in exchange for the seller’s commitment to offset any losses, real or hypothetical, suffered by the protection buyer in the event of a default or other credit event of another party, the “reference entity.”²⁹ In this way, credit default swaps allow parties to hedge or speculate based on the risk of default of an underlying entity or index.³⁰

into a second swap, often concurrently with the original swap, with a counterparty having risk preferences that are the exact opposite of those of the initial firm.

²⁴ See generally KOLB & OVERDAHL, *supra* note 13, at 575–86 (providing examples of various instruments that limit risk to buyers with interest rate exposure, including an interest rate option that allows the buyer to profit from a favorable move in the underlying interest rate while giving protection against an adverse move in the underlying interest rate).

²⁵ *Id.* at 679.

²⁶ For example, a credit-linked note is the functional equivalent of a normal note (or a bond or loan) with the embedded credit protection of a CDS, in which the credit-protection seller has prepaid the loss in the form of a bond. See BOMFIM, *supra* note 5, at 123–26 (describing the credit-derivatives market, major credit-derivatives tools, and coinciding valuation models). A total return swap, on the other hand, is an over-the-counter derivative where a dealer (total return payer) contracts to swap the total return of an asset or basket of assets in exchange for periodic cash flows paid by an investor (total return receiver). *Id.* at 83–89. Investors in a total return swap do not actually buy or own the underlying assets. *Id.* Credit-swap options allow an investor to purchase, from a dealer, the opportunity to buy (or sell) a CDS at a future date (exercise date) at a fixed price (strike price). *Id.* Credit-swap options allow investors to take financial positions reflecting their views on prospective credit and interest rate developments. *Id.* Additionally, credit-swap options may be used as hedging vehicles by banks and other institutions that have exposures to spread risk. *Id.* at 91–96.

²⁷ See Jessica Holzer, *SEC Proposes New Swaps Rules*, WALL ST. J., June 30, 2011, at C3 (describing recent proposed rules “aimed at protecting investors in some of the complex financial instruments blamed for exacerbating the financial crisis,” including credit default swaps).

²⁸ See WHALEY, *supra* note 23, at 674 (outlining the mechanics of a credit default swap as a protection seller who agrees, for an upfront or a continuing premium, to compensate the protection buyer upon a defined credit event).

²⁹ See *id.* at 684 n.6.

³⁰ In a typical CDS transaction, a fund may hold a large number of bonds of a particular debtor, thus exposing it to loss should the debtor default on its obligations. To hedge this risk, the fund may enter into a credit default swap whereby the risk of default is transferred to the protection seller in exchange for a fixed stream of payments. If the debtor defaults, the protection seller must make the protection buyer whole, typically by paying the difference between the par value of the bond and the post-default value. If the debtor

Seen in this way, derivatives in general and credit default swaps in particular operate like insurance. Both transfer risk and offset losses resulting from contingent future events. Following the analogy, the insured loss is the underlying credit event, the insurance premium is the fee or spread, and the policy limit is the notional amount. There are significant legal and economic differences that cause this analogy ultimately to break down.³¹ However, the basic intuition holds that derivatives, like insurance, transfer the risk of the underlying reference asset.³² By transferring the risk of the underlying reference asset, derivatives thus allow traders either to hedge their exposure to the reference asset or to speculate on its future value, both vital functions of the financial system.

2. *Creating Counterparty Credit Risk*

The risk of the underlying reference asset, however, is not the only risk involved in derivatives contracting. There is also the risk that a counterparty will fail to perform its obligations under the contract, leaving the other counterparty holding a risk that it thought it had transferred. Because performance is legally required under the contract, performance will only be excused when the counterparty is financially unable to perform—when it is insolvent.³³ Thus, the risk of nonperformance in the derivatives context is referred to as “counterparty credit risk”—the possibility that the party with

does not default, the protection seller enjoys the stream of payments with no payment obligation of its own. As with other forms of derivatives, neither party need hold the reference asset to receive payment on a credit default swap. Similarly, the protection buyer need not suffer any actual loss to be entitled to payment under a credit default swap. The payment obligation is triggered with regard to the reference entity alone and is calculated on the basis of the difference between the current and par values of the reference entity’s debt without regard to losses suffered (or not suffered) by the protection buyer. See James C. duPont, Comment, *A Second Chance at Legal Certainty: AIG Collapse Provides Impetus to Regulate Credit Default Swaps*, 61 ADMIN. L. REV. 843, 846–47 (2009) (describing a typical CDS transaction where the occurrence of a predefined credit event, such as bankruptcy or default on an obligation, allows the protection buyer to trigger the contract and affect settlement).

³¹ Legally, for example, recovery under an insurance policy requires the claimant to hold an insurable interest and actually suffer a loss, whereas with a credit default swap, neither party need hold the reference asset or suffer actual loss to be entitled to payment under the contract. See M. Todd Henderson, *Credit Derivatives Are Not “Insurance,”* 16 CONN. INS. L.J. 1, 11–12 (2009) (noting this distinction and arguing that it is inappropriate to regulate credit derivatives as insurance because the policies underlying insurance regulation—consumer protection and insurance-firm-governance issues—do not apply to credit derivatives).

³² See generally Timothy E. Lynch, *Derivatives: A Twenty-First Century Understanding*, 43 LOY. U. CHI. L.J. 1, 19 (2011) (“If a counterparty hedges a pre-existing risk with the use of a derivatives contract, he obtains insurance value from the derivative.”).

³³ See Feder, *supra* note 13, at 689.

whom you have contracted is, essentially, out of business and therefore unable to perform on the contract.³⁴

Counterparty credit risk is especially dangerous in the context of credit default swaps. If a protection seller defaults, the buyer remains exposed to the risk of default of the underlying reference entity.³⁵ If the underlying reference entity is not in default at the same time as the protection seller, the protection buyer may be able to replace the protection by entering into another credit default swap with another counterparty, which imposes additional transaction costs but does not otherwise alter the analysis.³⁶ If, however, the reference entity is in default at the same time as the protection seller, then the protection buyer is confronted with a dangerous scenario, the “double default,” in which protection is unavailable precisely when it is most needed.³⁷ When declines in the credit quality of the underlying entity and the counterparty are correlated, as may be the case in financial crises, protection may thus be illusory—in the words of one author, “protection sellers are least likely to pay out at the very moment they’re obligated to: upon someone else’s default.”³⁸ The protection buyer therefore loses both the value of its derivative contract and the value of its investment in the underlying reference entity.

Losses from counterparty credit risk are especially likely in periods of financial distress, when financial institutions, rendered unstable either by wild swings in the value of the underlying reference asset or by losses elsewhere in their portfolio, fail.³⁹ The failure of a large counterparty spreads loss

³⁴ See BOMFIM, *supra* note 5, at 15.

³⁵ Note here that the counterparty risk for the protection seller is not parallel because a default of the protection buyer means merely that the protection seller is not receiving its fixed stream of payments. Its long position in the credit of the reference entity is likely unaffected, although it may have to unwind its hedge (offsetting short position) if it hedged that risk, but again, this is just a transaction cost, not a double default. *See id.* at 267 (noting that, although a protection seller is technically subject to the risk that the buyer will fail to make the agreed-upon premium payments, the seller’s potential exposure is essentially limited to the marked-to-market value of the contract, a function of the difference between the premium written into the contract and the one prevailing in the marketplace at the time of default by the protection buyer).

³⁶ *See id.* at 268 (noting that the analysis of portfolio credit risk is impacted upon default by the reference entity if that entity either happens to default at around the same time as the protection seller or defaults after a default by the seller, and the original contract is not replaced).

³⁷ *See id.* at 10–11 (defining a protection buyer’s greatest loss as occurring when both the protection seller and the reference entity default at the same time).

³⁸ Charles Davi, *How to Understand the Derivatives Market*, ATLANTIC (July 16, 2009, 1:00 PM), <http://www.theatlantic.com/business/archive/2009/07/how-to-understand-the-derivatives-market/21426/>.

³⁹ *See* Manmohan Singh & James Aitken, *Counterparty Risk, Impact on Collateral Flows, and Role for Central Counterparties 4* (Int’l Monetary Fund, Working Paper No. 09/173, 2009), available at <http://www.imf.org/external/pubs/ft/wp/2009/wp09173.pdf> (“Counterparty risk largely stems from the creditworthiness of

throughout the financial system because other institutions find themselves holding unhedged positions precisely when they most need protection. In such a situation, the failure of a major counterparty may lead to the failure of its contracting partners, thus further spreading loss throughout the financial system.⁴⁰ This, of course, is systemic risk. Systemic risk refers to the linkages and interdependencies between participants in the financial market, such that a significant loss initially touching only a small number of participants can spread and threaten to engulf the entire system.⁴¹

Systemic risk is created by counterparty credit risk and spreads through the interconnected nature of derivatives transactions.⁴² Counterparty credit risk, unlike the risk of the underlying reference asset, is extremely difficult, if not impossible, to hedge and is inherent in every derivatives transaction.⁴³

an institution. In the context of a financial system . . . , counterparty risk will be the aggregate loss to the financial system from a counterparty that fails to deliver on its OTC derivative obligation.”)

⁴⁰ Darrell Duffie et al., *Policy Perspectives on OTC Derivatives Market Infrastructure 5* (Stanford Graduate Sch. of Bus., Research Paper No. 2046, 2010), available at <http://gsbapps.stanford.edu/researchpapers/library/RP2046.pdf>.

⁴¹ This basic theme is captured with greater formality by a leading scholar in the area, who defines systemic risk as

the risk that (i) an economic shock such as market or institutional failure triggers (through a panic or otherwise) 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, often evidenced by substantial financial-market price volatility.

Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 204 (2008).

⁴² Counterparty credit risk is not the only way in which derivatives may contribute to systemic risk, as defined *supra* note 41. Professor Whitehead offers two further examples. First, consider the case of banks using CDSs to transfer portfolio risk to the hedge fund industry. If an external shock were to bring down the hedge fund industry, even if all existing CDSs were fully paid, banks would no longer have counterparties to whom they could transfer risk, leading to a reduction in the amount they could lend or an increase in the cost of funding, potentially causing a contraction in the real economy. See Charles K. Whitehead, *The Volcker Rule and Evolving Financial Markets*, 1 HARV. BUS. L. REV. 39, 65–67 (2011). Second, if a substantial shock to the financial markets, such as the Lehman collapse, were to result in a sudden increase in CDS values, prompting the need for all CDS writers to post additional collateral, the terms of most standardized contracts would require that treasuries or similar instruments be posted within twenty-four hours, forcing writers to liquidate other asset classes in order to post collateral. Doing so would both lower the value of assets on the banks’ balance sheets and increase volatility in the markets, creating a vicious cycle further increasing CDS values and thus requiring more collateral to be posted. See Charles K. Whitehead, *Destructive Coordination*, 96 CORNELL L. REV. 323, 353–56 (2011) [hereinafter Whitehead, *Destructive Coordination*]. The creation of counterparty credit risk, however, remains the basic way in which OTC derivatives contribute to systemic risk, and it is the aspect of systemic risk that the central clearinghouse squarely addresses. Other manifestations of systemic risk are outside of the scope of this Article.

⁴³ If, for example, A and B enter into a CDS and B is later revealed to have weak credit, it is extremely difficult for A to hedge the risk of B’s default without taking on further counterparty credit risk. Most obviously, of course, A could enter into a new CDS with C, where the underlying reference is B, thus hedging A’s credit exposure to B, but in doing so, A would take on credit exposure to C. Alternatively, A could simply

Systemic risk, thus, can be seen as a negative externality of derivatives transactions.⁴⁴

This section has offered a brief overview of derivatives. The discussion has separated two kinds of risk involved in derivatives transactions: the risk of the underlying reference asset and counterparty credit risk. Derivatives are, in essence, a solution to the problem of risk arising from the underlying reference asset because they allow this risk to be hedged. In solving this risk problem, however, derivatives create another risk—counterparty credit risk. Counterparty credit risk is inherent in derivatives transactions, and it is the principal means through which derivatives transactions create systemic risk. The sections that follow describe the role of derivatives in the financial crisis and the way it became a focus of policy-makers in their response to the crisis.

B. Derivatives and the Financial Crisis

The global financial crisis began when the bubble in the U.S. housing market, which had been inflated by a combination of government policy,⁴⁵ unscrupulous lending practices,⁴⁶ and financial engineering, finally burst in

short B's bonds so that it would have gains to offset its losses as B's credit quality declines. This solution, however, may be excessively costly and difficult to manage and therefore unfeasible for many, if not most, derivatives transactions. The central clearing system, described below, has thus emerged as the central means of minimizing counterparty credit risk.

⁴⁴ Duffie et al., *supra* note 40, at 13 (“[T]he systemic risk associated with uncleared derivatives represents a ‘negative externality’ that may be appropriately treated with regulatory pressure or incentives.”).

⁴⁵ The government intervened directly in the housing market through the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan and Mortgage Corporation (Freddie Mac), government-sponsored entities (GSEs) through which the government pursued policies of widespread homeownership and affordable housing by purchasing subprime mortgages and related mortgage-backed securities, thereby offering an implicit government guaranty to bolster the market in subprime loans. *See, e.g.*, Housing and Community Development Act of 1992, Pub. L. No. 102-550, §§ 1302, 1332, 106 Stat. 3672, 3941–42, 3956–57 (codified as amended at 12 U.S.C. §§ 4501, 4562 (2006)) (incorporating the congressional finding that Fannie Mae and Freddie Mac “have an affirmative obligation to facilitate the financing of affordable housing for low- and moderate-income families” and requiring them to meet affordable housing goals set by the Department of Housing and Urban Development (HUD)). The initial annual goal for low- and moderate-income mortgage purchases for each GSE was 30% of the total number of dwelling units financed by mortgage purchases and was increased to 55% by 2007. *See* Carol D. Leonnig, *How HUD Mortgage Policy Fed the Crisis*, WASH. POST, June 10, 2008, at A1. HUD acquiesced in allowing subprime loans to meet affordable-housing goals, and Fannie Mae and Freddie Mac played a large part in creating the subprime market to meet these requirements. *Id.*

⁴⁶ In this environment where the highest risk loans were effectively guaranteed by the government, mortgage lenders adopted the “originate to distribute” business model by which mortgages would be underwritten and then immediately sold to mitigate risk and create funds for further underwriting. *See* Arthur E. Wilmarth, Jr., *The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis*, 41 CONN. L. REV. 963, 982 (2009). As the subprime market expanded,

2007.⁴⁷ Because the risks of the housing market had been repackaged, split into smaller pieces, and widely distributed, the effects soon spread throughout the entire economy.⁴⁸ The financial technology that enabled this risk to spread included, principally, securitization but also included derivatives.

1. *The Culprit: Securitization*

Securitization involves, essentially, collecting cash-flow rights in a large pool and then selling interests in the pool in smaller chunks to investors.⁴⁹ Almost any asset with a stable income stream can be securitized, and mortgages, because borrowers' interest obligations represent a predictable income stream, are particularly well-suited for securitization, hence the creation (through securitization) of MBSs, which became the principal means

underwriting standards became increasingly lax, allowing for the now-infamous No-Income-No-Job-or-Asset (NINJA) loans to be underwritten, in part because lenders did not bear the risk of the loans they made. *See* JAMES R. BARTH ET AL., *THE RISE AND FALL OF THE U.S. MORTGAGE AND CREDIT MARKETS* 92 (2009) (analyzing data that indicates that, as more new loans were made over the period 2003 to 2006, lenders steadily lowered underwriting standards to maintain their volumes of business, leading to more NINJA loans); *In a World of Overconfidence, Fear Makes a Welcome Return*, *FIN. TIMES* (London), Aug. 15, 2007, at 11 (summarizing the combination of events that led to the development of NINJA loans as large cuts in interest rates in 2000, followed by easy credit and “financial innovation,” which allowed lenders to collect fees but avoid the risks of the loans made).

⁴⁷ The Financial Crisis Inquiry Commission ultimately attributed the cause of the crisis to

- [w]idespread failures in financial regulation . . . ;
- [d]ramatic breakdowns in corporate governance including too many financial firms acting recklessly and taking on too much risk;
- [a]n explosive mix of excessive borrowing and risk by households and Wall Street that put the financial system on a collision course with crisis;
- [k]ey policy makers ill prepared for the crisis, lacking a full understanding of the financial system they oversaw;
- [a]nd systemic breaches in accountability and ethics at all levels.

Press Release, *Fin. Crisis Inquiry Comm'n, Financial Crisis Inquiry Commission Releases Report on the Causes of the Financial Crisis* (Jan. 27, 2011), *available at* http://fcic-static.law.stanford.edu/cdn_media/fcic-news/2011-0127-fcic-releases-report.pdf.

⁴⁸ *See* Wilmarth, *supra* note 46, at 970.

⁴⁹ In a basic securitization transaction, an originator first contributes a group of assets to a distinct legal entity—a so-called Special Purpose Vehicle (SPV)—which then sells debt securities to investors protected by a security interest on these assets. *See* Darrell Duffie, *Innovations in Credit Risk Transfer: Implications for Financial Stability* 12 (Bank for Int'l Settlements, Working Paper No. 255, 2008), *available at* <http://www.bis.org/publ/work255.pdf>. The income received from the pooled assets is used to pay the interest rate on the securities sold to investors, and the proceeds from the sale of these securities are paid to the originator to compensate for the contribution of assets into the SPV and to fund future activities. *See id.* Investors in the assets, meanwhile, receive a stream of payments, which, because they are pooled and typically given credit enhancements, are less risky than they were in the hands of the originator. *See id.* at 12–14.

by which housing risk was spread throughout the financial system.⁵⁰ Moreover, bankers often further securitized mortgage-backed securities to create another instrument, known as a collateralized debt obligation (CDO), which represented a financial claim to the cash flows generated by an underlying portfolio of mortgage-backed securities.⁵¹ The purpose of this second-step securitization was to achieve a higher credit rating through further diversification of the asset pool, interests that could be resold to investors worldwide.⁵² In this way, mortgage-backed securities and CDOs played a significant role in creating systemic risk, essentially allowing the consequences of the collapse in U.S. home prices and the concomitant mortgage defaults to spread throughout the global financial system.

2. *The Accomplice: Derivatives*

Derivatives, however, also share some of the responsibility for the global financial crisis.⁵³ Derivatives contributed to the crisis in two basic ways, the first having to do with the stimulating of the market for the underlying reference asset (in this case, subprime mortgages), and the second having to do with the accumulation of counterparty credit risk in large financial institutions.

First, derivatives fueled the credit boom through the creation of swaps in which the underlying asset was a pool of CDOs or an index of subprime

⁵⁰ See Andrea J. Boyack, *Laudable Goals and Unintended Consequences: The Role and Control of Fannie Mae and Freddie Mac*, 60 AM. U. L. REV. 1489, 1503–09 (2011). Housing market risk, in this context, is principally the risk that borrowers will default on their mortgages. Because it allowed them to raise funds and off-load risk, securitization arguably distorted lenders' incentives and led to the "originate-to-distribute" business model. See Amiyatosh Purnanandam, *Originate-to-Distribute Model and the Subprime Mortgage Crisis*, 24 REV. OF FIN. STUD. 1881, 1912 (2011).

⁵¹ Duffie, *supra* note 49, at 12. A CDO is created by combining mortgaged-backed securities in a pool with other debt obligations and securitizing that pool, once again, into tranches to be sold to investors with varying risk preferences. See *id.*

⁵² Mixing assets, even risky assets, reduces risk. By making a pool of mortgage-backed securities into CDOs, higher credit ratings were effectively generated even though the underlying loans themselves were no less risky. See Joshua Coval et al., *The Economics of Structured Finance*, J. ECON. PERSP., Winter 2009, at 3, 6–7 (discussing the method by which securities were manufactured by repackaging risks and creating "safe" assets that were viewed by investors and rating agencies as risk free); see also Frank Partnoy, *Overdependence on Credit Ratings Was a Primary Cause of the Crisis*, in *THE FIRST CREDIT MARKET TURMOIL OF THE 21ST CENTURY* 175, 178–83 (Douglas D. Evanoff et al. eds., 2009) (describing the dynamics of "second-level" securitizations and the role of credit ratings).

⁵³ See René M. Stulz, *Credit Default Swaps and the Credit Crisis* 3–4 (Nat'l Bureau of Econ. Research, Working Paper No. 15384, 2009), available at <http://www.nber.org/papers/w15384> (noting observers' arguments that derivatives contributed to the financial crisis by (1) enabling the credit boom, (2) allowing financial institutions to take on massive risk, and (3) providing a total lack of transparency regarding risk exposures and the resulting strength of financial institutions with large positions).

MBSs.⁵⁴ These “synthetic CDOs” created a further means by which investors could hedge or speculate on mortgage-backed securities and subprime loans, creating further liquidity in these markets and driving down the cost of capital even further.⁵⁵ Moreover, because swaps allow parties to take on risk without actually owning the underlying asset, both synthetic CDOs and indexed credit default swaps allowed “investors to take more exposure to subprime mortgages than there were such mortgages.”⁵⁶ Derivatives, in other words, allowed risk of the underlying reference asset—in this case, subprime mortgages—to spread even further.⁵⁷

A second way in which derivatives fueled the financial crisis was by allowing financial institutions to take massive but almost entirely opaque positions on this risk, resulting in an inability to assess their financial strengths, thereby creating the conditions for a bank run that would further exacerbate the credit crunch.⁵⁸ By some estimates, the CDS market grew tenfold in the years

⁵⁴ A synthetic CDO is essentially a credit default swap written on a reference index of CDOs combined with a pool of high-credit, quality bonds where the CDS spread plus the coupon payments from the high-quality bonds make the interest payment on the SPV securities. See Gary Gorton, *The Subprime Panic*, 15 EUROPEAN FIN. MGMT. 10, 27 (2009). The resulting CDO is “synthetic” because it mimics the return of a CDO written on a pool of MBSs (or whatever the reference index is) but does not actually hold collateralized debt obligations. *Id.* Likewise, in 2006, asset-backed-swap (ABX) indices were introduced, representing a basket of CDS contracts on securitized subprime mortgages for a prior period (typically the past six months). *Id.* at 28–29. These indices behaved like bond indices, falling when default risk rose and rising when default risk fell, and enabled investors to take positions on the underlying market without any ownership interest, direct or indirect, in MBSs. See *id.*

⁵⁵ See *id.*

⁵⁶ Stulz, *supra* note 53, at 11; see also Gorton, *supra* note 54, at 36–37 (commenting that investors were subject to greater exposure because of the complexity of synthetic CDOs and indexed credit default swaps preventing the valuation of the underlying mortgages). The ABX.HE index is a synthetic index that tracks the price of a single CDS on each of twenty individual subprime-mortgage-backed securities. See Richard Stanton & Nancy Wallace, *The Bear’s Lair: Indexed Credit Default and the Subprime Mortgage Crisis*, 24 REV. FIN. STUD. 3250, 3250–51 (2011). This tool allows market participants to trade the credit risk of a portfolio of pools using a single security without having to own or borrow the underlying reference assets. See *id.* at 1351–52. As a result of this structure, the net notional amount of ABX.HE indexed CDSs may significantly exceed the underlying principle balances. See *id.*

⁵⁷ This fact alone, however, does not render derivatives responsible for the financial crisis because the risk of the underlying reference asset can be hedged. If the risk of the underlying asset is to be blamed for the financial crisis, then the fault lies not with derivatives but with the traders who made foolish choices or the institutions that failed to hedge. On this point, consider the account of AIG offered *infra* Part I.B.3.

⁵⁸ See generally Colleen M. Baker, *Regulating the Invisible: The Case of Over-the-Counter Derivatives*, 85 NOTRE DAME L. REV. 1287, 1307 (2010) (discussing how the opaqueness of the market prevented market participants from knowing exactly what the exposures of their counterparties were to these entities, such as Bear Stearns, Lehman Brothers, and AIG, which resulted in quick drying up of liquidity).

leading up to the crisis. In 2004, for example, the total notional amount⁵⁹ of CDS contracts estimated by the Bank for International Settlements was around \$5 trillion,⁶⁰ while in June 2008, the peak of the market, it was \$57 trillion.⁶¹ Notional amounts, because they fail to take into account offsetting positions, can be misleading,⁶² and other means of measuring the absolute size of the market result in smaller estimates.⁶³ Nevertheless, there is little dispute over the fact that the CDS market grew considerably in the years leading to the crisis and that much of that exposure was housed in financial institutions.⁶⁴ That it is difficult to say how much exposure they in fact bore only demonstrates the difficulty in quantifying the exposure of financial institutions during the crisis, which is often cited as a significant part of the problem.

It is important to note here that, in discussing the role of derivatives in the financial crisis, we are focusing on OTC derivatives and, more specifically, on credit default swaps and other related swap instruments. As described above, these are highly tailored contractual instruments that did not (and still do not) trade on exchanges. Leading up to the crisis, many financial institutions had taken large positions in OTC derivatives to hedge or speculate on mortgages.⁶⁵

Moreover, insofar as we are focusing on the risk arising from financial institutions accumulating large derivatives positions, we are focusing primarily

⁵⁹ Notional principal, or notional amount, of a derivative contract is a hypothetical underlying quantity upon which interest rate or other payment obligations are computed. *Product Descriptions and Frequently Asked Questions*, ISDA, <http://www.isda.org/educat/faqs.html> (last visited Aug. 6, 2012).

⁶⁰ See MONETARY & ECON. DEP'T, BANK FOR INT'L SETTLEMENTS, OTC DERIVATIVES MARKET ACTIVITY IN THE FIRST HALF OF 2005, at 9 tbl.4 (2005), available at http://www.bis.org/publ/otc_hy0511.pdf.

⁶¹ MONETARY & ECON. DEP'T, BANK FOR INT'L SETTLEMENTS, OTC DERIVATIVES MARKET ACTIVITY IN THE SECOND HALF OF 2008, at 7 tbl.1 (2009), available at http://www.bis.org/publ/otc_hy0905.pdf.

⁶² Stulz, *supra* note 53, at 22–24 (listing various reasons that account for misleading notional amounts, thereby contributing to “the potential to create havoc in the financial markets”); see also Memorandum from J.P. Morgan to file, J.P. Morgan’s Response to FASB Statement No. 161 (FAS 161), Disclosures About Derivative Instruments and Hedging Activities (ASC Topic 815) 5 (Feb. 10, 2011) (on file with the Emory Law Journal) (“The information on notional amounts could be misleading because the gross presentation does not appropriately reflect the effect of some common strategies.”).

⁶³ Compare Press Release, Depository Trust & Clearing Corp., DTCC Values Additional CDS Contracts in Trade Information Warehouse at \$5.7 Trillion (Aug. 3, 2009), available at http://www.dtcc.com/news/press/releases/2009/cds_contract_values.php (reporting a \$26.5 trillion notional value of 2.2 million electronically confirmed CDS contracts in the warehouse’s registry in July 2009), with Press Release, Int’l Swaps & Derivatives Ass’n, Inc., ISDA Mid-Year 2009 Market Survey Shows Credit Derivatives at \$31.2 Trillion (Sept. 15, 2009), available at <http://www.isda.org/press/press091509.html> (finding a total notional value of \$31.2 trillion).

⁶⁴ See Stulz, *supra* note 53, at 27; see also duPont, *supra* note 30, at 854–58 (discussing the development of credit default swaps).

⁶⁵ See Stulz, *supra* note 53, at 2–4, 9–12.

on counterparty credit risk. Recall, from the previous discussion, that derivatives create two kinds of risk—the risk of the underlying reference asset, which can be hedged, and counterparty credit risk, which cannot. The risk even of toxic, securitized subprime mortgages can be eliminated by entering into offsetting swap transactions, but when financial institutions become parties to a vast number of derivatives transactions, they also accumulate counterparty credit risk—the risk that one of their transacting parties will fail to perform its obligations under a swap contract, leaving the dealer’s position in the underlying asset unhedged as a result. Because counterparty credit risk cannot be eliminated through hedging and, in fact, increases as one enters into more of such transactions, those financial institutions that acted as dealers in credit default swaps in the years leading up to the financial crisis accumulated a sufficient amount of counterparty credit risk to increase systemic risk and further destabilize the global financial system.

Still, financial institutions are not totally at the mercy of counterparty credit risk. Dealers can and do protect themselves by taking collateral.⁶⁶ Moreover, if they have multiple positions open with the same counterparty, dealers can reduce their total losses by netting positive and negative positions against one another.⁶⁷ Because several important counterparties did in fact fail as the financial crisis deepened in 2008, the crisis presents a case study to evaluate the ability of the dealers to respond to counterparty credit risk. And, in fact, the credit-default-swap settlement system seems to have worked fairly well during the crisis.⁶⁸ Both Lehman and Bear Stearns had been significant players in the

⁶⁶ See Whitehead, *Destructive Coordination*, *supra* note 42, at 353–56 (describing the standardized system of collateral posting under ISDA’s Credit Support Annex and the way in which this system of collateral may have contributed to the financial crisis because “[s]tandard provisions in the CSA caused protection sellers to react to the increase in CDS prices in the same way and at roughly the same time, simultaneously driving prices lower, which in turn required additional sales to raise further funds”).

⁶⁷ JOHN B. CAOUILLE ET AL., *MANAGING CREDIT RISK: THE GREAT CHALLENGE FOR GLOBAL FINANCIAL MARKETS* 75 (2d ed. 2008). Both collateral and netting are discussed in greater detail *infra* Part II.C.3.

⁶⁸ Stulz, *supra* note 53, at 21; see also Press Release, LCH.Clearnet, LCH.Clearnet Successfully Manages Lehman Default (Sept. 23, 2008), available at http://www.lchclearnet.com/media_centre/press_releases/2008-09-23.asp (commenting on the successful management of Lehman’s default which resulted in a 90% decrease in risk exposure); Press Release, Int’l Swaps & Derivatives Ass’n, Inc., ISDA CEO Notes Success of Lehman Settlement, Addresses CDS Misperceptions (Oct. 21, 2008), available at <http://www.isda.org/press/press102108.html> (commenting on the success of the CDS settlement system during the Lehman default and the continued liquidity of CDS contracts as opposed to their cash equivalents). One tool used during Lehman’s credit-default-swap settlement process was default management. See *id.* Default management transfers a defaulting client’s positions to mitigate risk to nondefaulting members through a combination of hedging, trading out of positions, and auctioning of parts of the remaining portfolio. LCH.Clearnet’s default rules are available at http://www.lchclearnet.com/Images/Default%20Rules_tcm6-43736.pdf. LCH.Clearnet, using SwapClear’s default-management process, successfully managed Lehman’s default using only 35% of

credit-default-swap market, and neither did credit default swaps directly cause the downfall of either firm nor did the failure of either firm lead to a domino of failures of credit-default-swap counterparties.⁶⁹ AIG, however, is another story.

3. AIG: A Case Study

AIG is often cited as proof of the inability of the market to cope with the risk created by derivatives transactions.⁷⁰ AIG was indeed a major participant in the derivatives market—it was a major seller of credit-default-swap protection—and its failure threatened to spread throughout and potentially destroy the financial system, thus necessitating a massive, taxpayer-financed bailout.⁷¹ However, AIG neither failed nor was bailed out because of derivatives. Its failure is perhaps better seen as a *sui generis* example of stupidity or cupidity or both.

Lehman Brothers' margining with no loss to other market participants. See *Building the New Derivatives Regulatory Framework: Oversight of Title VII of the Dodd-Frank Act: Hearing Before the Comm. on Banking, Hous., & Urban Affairs*, 112th Cong. 73–74 (2011) (statement of Ian Axe, Chief Executive, LCH.Clearnet Group Limited); see also Letter from Roger Liddell, Chief Exec. Officer, LCH.Clearnet, to Elizabeth M. Murphy, Sec'y, SEC (Jan. 18, 2011), available at <http://www.sec.gov/comments/s7-34-10/s73410-30.pdf> (expressing the concern that new proposed rules that would require real-time reporting and public dissemination of security-based-swap-transaction information would “undermine the default management process and have a negative effect on market stability”).

⁶⁹ See, e.g., *Clearing Up the Credit Swaps Fog—Letting Opaque Markets Grow Unchecked Was Inexcusable*, FIN. TIMES (London), Oct. 16, 2008, at 10 (“The Depository Trust and Clearing Corporation, where most CDS trades are registered, now estimates that only about \$6bn need physically change hands next week when Lehman CDS are settled. The vast majority is netted out, and systemic risk appears marginal.”); Stefano Giglio, *Credit Default Swap Spreads and Systemic Financial Risk* 3 (Jan. 2011) (unpublished manuscript), available at http://faculty.chicagobooth.edu/workshops/finance/archive/pdf/giglio_jmp.pdf (performing an analysis of CDS spreads and bond prices to find that spikes in CDS spreads in the month before Bear Stearns's collapse and after Lehman's default do not correspond to spikes in systemic risk but instead with idiosyncratic default risk of one or a small number of banks). The fear of counterparty risk did lead major dealers to frantically attempt to reduce exposure using novations and assignments. See Mark Pengelly, *Rocked by Counterparty Risk*, RISK.NET (Nov. 1, 2008), <http://www.risk.net/risk-magazine/feature/1498483/rocked-counterparty-risk>. Novations are a method by which to exit derivatives positions by transferring, rather than terminating, the transactions to alternate derivatives dealers. It is up to the transferee, generally a bank, to accept the assignment of the trade. See *id.* Many banks reported a spike in requests for novations in the run-up to Lehman and immediately afterwards. See *id.*; see also Duffie et al., *supra* note 40, at 11–12 (discussing the risks posed by “counterparty runs” through novation and by other means).

⁷⁰ See duPont, *supra* note 30, at 843–45.

⁷¹ See Brady Dennis & Robert O'Harrow, Jr., *A Crack in the System*, WASH. POST, Dec. 30, 2008, at A1 (treating the failure as the work of rogue derivatives traders); Press Release, Bd. of Governors of the Fed. Reserve Sys. (Sept. 16, 2008), available at <http://www.federalreserve.gov/newsevents/press/other/20080916a.htm> (announcing the bailout and explaining that “disorderly failure of AIG could add to already significant levels of financial market fragility and lead to substantially higher borrowing costs, reduced household wealth, and materially weaker economic performance”).

AIG did not fail because of its derivatives positions. In the words of Professor Richard Squire:

[I]n fact the liabilities on AIG's derivative contracts were not big enough in themselves to break the company. Rather, the conduct that undid AIG was a company-wide affair, in which derivatives traders at an AIG subsidiary sold contingent debts linked to subprime mortgages, and then fund managers at the AIG parent company cranked up the internal correlations on those debts by purchasing risky mortgage-backed securities for the company's general investment portfolio. When the housing market collapsed, it was the combined damage to both sides of AIG's balance sheet that brought the company to the brink of bankruptcy.⁷²

AIG had entered the derivatives business through a subsidiary offering bespoke instruments that were, initially at least, fully hedged.⁷³ Eventually, however, the subsidiary began to take unhedged credit-default-swap positions for investment purposes, many of which were based on indices of subprime loans.⁷⁴ AIG, in other words, began to behave more like a speculative investor than a hedged dealer.⁷⁵ Moreover, derivatives were only one means, and not even the principal means, by which AIG undertook subprime-mortgage risk. The company accumulated a portfolio of mortgage-backed securities more than twice the size of its credit-default-swap portfolio.⁷⁶ AIG failed because of the speculative positions it took on subprime mortgages, and derivatives were merely one of several means the company used to take on that speculative position.

Not only were derivatives not the underlying cause of AIG's collapse, they were also not the underlying cause of its bailout. AIG's failure may indeed have posed a grave danger to financial markets, but the source of this danger was not the typical risk inherent in derivatives transactions, which is the failure

⁷² Richard Squire, *Shareholder Opportunism in a World of Risky Debt*, 123 HARV. L. REV. 1151, 1184 (2010) (emphasis omitted).

⁷³ The subsidiary, AIG Financial Products (AIGFP), took advantage of the AAA credit rating and guaranty of its corporate parent to price its products aggressively. Am. Int'l Grp., 2007 Annual Report (Form 10-K), at 5 n.(g), 83, 179 (Feb. 28, 2008).

⁷⁴ However, even as AIG was increasing its exposure to subprime mortgages, the company did not do so entirely, or even principally, by means of derivatives. Instead, the company focused on purchasing mortgage-backed securities, in which it accumulated a portfolio more than twice the size of its \$60 billion notional exposure to credit default swaps. *See id.* at 102.

⁷⁵ *See* Stulz, *supra* note 53, at 25 ("AIG did not behave like a dealer. It did not run a matched book. It did not appear to hedge.")

⁷⁶ *See* Am. Int'l Grp., *supra* note 73, at 104.

of a major dealer spreading contagion to its counterparties.⁷⁷ Rather, the danger was that AIG would default on its debt “at a time when there already was a run on money markets.”⁷⁸ There is, in fact, little evidence to suggest that AIG’s collapse would have caused widespread counterparty failure.⁷⁹ AIG’s counterparties were protected by the collateral AIG had posted against its positions—\$35 billion by the time of AIG’s ultimate bailout in December 2008.⁸⁰ This collateral would have been available to AIG’s derivatives counterparties in the event of default.⁸¹ It may not have made AIG’s derivatives counterparties whole, but it would have cushioned the blow substantially.⁸² The far more dangerous scenario at the time was that AIG’s default would have led to a panic, causing short-term-credit markets to seize,

⁷⁷ See, e.g., Edmund L. Andrews et al., *Fed in an \$85 Billion Rescue of an Insurer Near Failure*, N.Y. TIMES, Sept. 17, 2008, at A1 (“If A.I.G. had collapsed—and been unable to pay all of its insurance claims—institutional investors around the world would have been instantly forced to reappraise the value of those securities, and that in turn would have reduced their own capital and the value of their own debt.”); Eric Dash & Andrew Ross Sorkin, *Throwing a Lifeline to a Troubled Giant*, N.Y. TIMES, Sept. 18, 2008, at C1 (“A.I.G. was one of the 10 most widely held stocks in 401(k) retirement plans, and . . . its collapse could potentially cause an enormous run on mutual funds.”); Stulz, *supra* note 53, at 26 (“A collapse of AIG would not have been a benign event for the markets.”).

⁷⁸ Stulz, *supra* note 53, at 27.

⁷⁹ CDSs are afforded special provisions under federal bankruptcy law permitting a nonbankrupt counterparty to offset any claims against collateral it holds without the general restraints imposed by bankruptcy law. William K. Sjostrom, Jr., *The AIG Bailout*, 66 WASH. & LEE L. REV. 943, 980–81 (2009). Accordingly, AIG’s counterparties would have been able to retain the massive collateral posted by AIG, thereby decreasing the negative impact of AIG’s collapse. *Id.*

⁸⁰ HENDERSON, *supra* note 6, at 633.

⁸¹ See Squire, *supra* note 72, at 1187–89 (discussing availability of collateral to counterparties in the event of default and how the operation of bankruptcy law made AIG’s general creditors, not its derivatives counterparties, the company’s most imperiled creditors). However, the coordinated collateral calls of various counterparties, uncertain about the value of their collateral, may have contributed to the collapse of the company. Cf. Whitehead, *Destructive Coordination*, *supra* note 42, at 354–56 (discussing this phenomenon in the context of credit default swaps). The valuation of collateral thus may be an advantage of the central counterparty system described *infra* Part I.C.1.

⁸² Market participants use (1) collateralization, or the posting of collateral against exposures resulting from credit derivatives positions, and (2) netting, or offsetting exposure before collateral is posted, to reduce the counterparty risk of the credit derivatives market. See BOMFIM, *supra* note 5, at 27. Posting collateral is expensive, however, and therefore the amounts pledged typically cover less than the total net exposure between counterparties. *Id.* To account for this gap, market participants call for additional collateral after their marked-to-market exposure to a particular counterparty has risen beyond a previously agreed upon threshold level. *Id.* Netting, on the other hand, takes effect prior to the posting of collateral by allowing counterparties to offset aggregate positions with one another. *Id.* For example, where Bank A and Bank B have a large number of CDSs between them such that Bank A’s exposure amounts to \$100 million and Bank B’s exposure amounts to \$90 million, netting allows for the exposure of Bank A to Bank B to be limited to only \$10 million. For further discussion of the method by which collateral is used to reduce counterparty risk, see Squire, *supra* note 72, at 1187–89. For further analysis of netting in the clearinghouse context, see *infra* notes 96–98 and accompanying text.

resulting in corporations no longer being able to fund their short-term obligations.⁸³ In other words, it could have resulted in a wave of insolvency in corporate America, triggering widespread layoffs and vast economic devastation—the possibility of which concerned policy-makers much more than counterparty credit risk.

Thus, AIG is a rather poor example of how derivatives caused the failure of a major financial institution during the crisis. First, AIG's failure was caused not by the paradigmatic risk inherent in derivatives transactions—counterparty credit risk. Rather, in amassing speculative risk in the underlying asset—here, subprime mortgages—the company behaved like an investor, not a dealer. Second, AIG was bailed out not because of the systemic risk it posed to derivatives counterparties but because of fears concerning the effect of its failure on short-term-credit markets. In fact, the counterparty failures that did occur during the financial crisis were handled fairly well with the tools traditionally at hand—collateral and netting.

Having nevertheless been repeatedly offered as an example of how derivatives may wreak financial havoc on a firm,⁸⁴ AIG has awakened discussion on several latent policy issues relating to derivatives regulation.⁸⁵ The financial crisis thus threw klieg lights onto the relationship between derivatives and systemic risk, and as systemic risk became the central focus of policy-makers in the wake of the crisis, these policy-makers likewise focused their efforts on derivatives reform. The results of these efforts, as enshrined in the Dodd–Frank Act and its regulatory progeny, are described in the next section.

⁸³ See Holman Jenkins, *The Never-Ending, Goldman–AIG Saga*, WALL ST. J., Jan. 27, 2010, at A13 (stating that one of the chief reasons for the bailout of AIG was fear of a “wholesale run on the nation’s banking system”).

⁸⁴ Craig Pirrong, *The Inefficiency of Clearing Mandates 2* (CATO Inst., Policy Analysis No. 665, 2010), available at <http://www.cato.org/pubs/pas/PA665.pdf> (noting that AIG has been “routinely trotted out to demonstrate the need for clearing” in spite of being a misleading example).

⁸⁵ In addition to the issues discussed below, the failure of AIG, Bear Stearns, and Lehman provoked a lively debate, beyond the scope of this Article, on the role of derivatives’ bankruptcy exemption in contributing to the financial crisis. See, e.g., DAVID SKEEL, *THE NEW FINANCIAL DEAL* 158–63 (2010) (advocating the repeal of the special preferences derivatives receive in bankruptcy); Mark J. Roe, *The Derivatives Market’s Payment Priorities as Financial Crisis Accelerator*, 63 STAN. L. REV. 539, 546 (2011) (arguing that existing bankruptcy rules subsidize derivatives, leading to overinvestment).

C. *Dodd–Frank and the Mandatory Clearing of Derivatives Transactions*

Regardless, ultimately, of whether derivatives were a major causal factor in the global financial crisis, they were indeed a major focus of the legislative reforms following on the heels of the crisis. The Dodd–Frank Wall Street Reform and Consumer Protection Act⁸⁶ has the principal objective of containing financial risk by regulating the instruments and the institutions that package and promulgate it.⁸⁷ Derivatives come under central focus in the Act as an instrument of financial risk, and Title VII of the Act sets forth a wholly new regulatory structure for OTC derivatives.

In sum, the regulation of OTC derivatives under Title VII of the Act has three primary goals: (1) the minimization of systemic risk from derivatives transactions, (2) the establishment of transparency in derivatives markets, and (3) the creation of credit protection for derivatives counterparties. Moreover, under the statute, each of these basic goals is to be accomplished largely through a single structural innovation—the introduction of central counterparties, or “clearinghouses,” for derivatives transactions.⁸⁸ The core idea, in other words, is to move as much OTC derivatives trading as possible onto clearinghouses and, wherever possible, onto exchanges, thus eliminating, or at least minimizing, bilateral transactions in favor of centralization.⁸⁹

⁸⁶ Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of 7, 12, and 15 U.S.C.).

⁸⁷ 23 *BROKER–DEALER OPERATIONS UNDER SECURITIES AND COMMODITIES LAW* § 2A:19 (Jerry W. Markham & Thomas Lee Hazen eds., 2d ed. 2011) (providing a brief overview of the Act’s purpose).

⁸⁸ Central counterparties (CCPs) are a special variety of clearinghouse. Generally, a clearinghouse, such as the Depository Trust & Clearing Corporation, exists to manage counterparty risk between institutions by “clearing” and “settling” transactions. See HAL S. SCOTT & PHILIP A. WELLONS, *INTERNATIONAL FINANCE: TRANSACTIONS, POLICY, AND REGULATION* 904–06 (9th ed. 2002). Clearing transactions involves identifying and reconciling the obligations created by the trades, while settling includes the actual processing of the transaction, such as handling the details of payment and delivery. *Id.* In addition to handling the details of payment and delivery, CCPs, such as LCH.Clearnet, “guarantee” the transactions that they clear, standing ready to fulfill the obligations of any defaulting members. KOLB & OVERDAHL, *supra* note 13, at 263; see also CAOUILLE ET AL., *supra* note 67, at 72–75. Although clearinghouses are employed across all asset classes, the risk exposure of derivatives, and, more specifically, credit derivatives, is fundamentally different than traditional securities, prompting some to recommend CCPs. Viral V. Acharya et al, *Regulating OTC Derivatives*, in *REGULATING WALL STREET* 367, 399 (Viral V. Acharya et al. eds., 2011). This Article uses the term *clearinghouse* in favor of the jargonized *central counterparty*, but in doing so, it is referring to the special problems of clearinghouses in the derivatives context, not in the more traditional securities context.

⁸⁹ How much bilateral trading will ultimately wind up on clearinghouses is a subject of great uncertainty and some debate. Some estimate a substantial majority will ultimately be cleared. See SKEEL, *supra* note 85, at 70 (offering the view that “a large majority of derivatives will find their way to clearinghouses and exchanges within a few years” and citing the prediction of Professor Duffie that “60 percent would be cleared within a year, [and] 80 percent within four years”).

Centralizing transactions on clearinghouses facilitates regulatory oversight of derivatives and increases the transparency of the market, but the principal systemic risk advantage, discussed in greater detail below, is the mitigation of counterparty credit risk through netting and reserving.⁹⁰ The paragraphs that follow discuss these advantages and describe how centralized clearing is expected to work.

1. *Central Counterparties and Clearing*

Clearinghouses use centralization to address the systemic risk inherent in bilateral derivatives transactions. “Clearing” a trade effectively means that a clearinghouse positions itself as a “central counterparty” between two market participants seeking to take opposite positions—a buyer and a seller.⁹¹ Rather than transacting bilaterally, the buyers and sellers transact with the clearinghouse.⁹² By positioning a clearinghouse as the seller to every buyer and the buyer to every seller, the hitherto disorganized world of bilateral derivatives trading thus comes to resemble an orderly hub-and-spoke arrangement with the clearinghouse at the center and all other sellers and buyers at the periphery.⁹³

This rearrangement of the derivatives market has the effect of redistributing the risk inherent in derivatives transactions. To see this, recall the two basic forms of risk in derivatives: the risk of the underlying and counterparty credit risk. First, with regard to the underlying, the clearinghouse remains perfectly

⁹⁰ In connection with the Act’s goal of making the OTC derivatives market more transparent, data, such as trading volumes and prices, must be gathered for all swaps. For cleared and exchange-traded swaps, this data will be compiled by the relevant clearing organization or exchange. For uncleared swaps, all parties must report their trades to a registered swap-data repository or, if no such repository exists for the relevant transaction, directly to the Commodity Futures Trading Commission (CFTC) or Securities and Exchange Commission (SEC), as applicable. 7 U.S.C. § 6r(a)(1) (Supp. IV 2010) (requiring that each security-based swap not accepted for clearing by a clearing agency or derivatives clearing organization (DCO) be reported to a swap-data repository, or if none exists, to the SEC); 15 U.S.C. § 78c-3(e) (same).

⁹¹ See Elizabeth Schubert & Antony Bryceson, *Mechanics of Derivatives Clearing*, PRACTICAL L. COMPANY, <http://usfinance.practicallaw.com/9-505-9203#null> (last visited Aug. 6, 2012) (providing a chart that models the relationship between the end user, counterparty, and clearinghouse).

⁹² End users will still execute their contracts with a dealer who, as a clearinghouse member, will bring the clearinghouse into the contract through one of two possible methods, depending upon the rules of the clearinghouse. First, the dealer may act as an agent of the clearinghouse, in which case the end user would technically contract with the clearinghouse through the dealer as the clearinghouse’s intermediary. See *id.* Alternatively, the dealer may act as a principal, facing the end user directly and then submitting the contract to the clearinghouse through novation, the result of which is that the clearinghouse is substituted as the counterparty to the transaction. See *id.*

⁹³ See Duffie et al., *supra* note 40, at 6 fig.1.

neutral, taking on no risk at all. Instead, whatever long position it takes from the original seller is immediately offset by a corresponding short position with the original buyer and so on with every cleared trade. The clearinghouse's trades offset automatically, leaving it with zero exposure to the underlying, the risk of which is borne entirely by the original transacting parties.

The situation is reversed with respect to counterparty credit risk. By becoming the seller to every buyer and the buyer to every seller, the clearinghouse effectively undertakes all counterparty credit risk while the transacting parties have zero exposure to their original counterparties and, as long as the clearinghouse remains solvent, no exposure to counterparty credit risk. Or, to say the same thing in a slightly different way, the clearinghouse steps in to guarantee the performance of every cleared trade. Maintaining the solvency of the clearinghouse, of course, is the critical issue to which we shall return directly, but before we do, it is worth pausing to consider the effect of this reallocation of risk on systemic risk. As we have seen, systemic risk, in the context of derivatives transactions, is principally counterparty credit risk, which had been spread throughout the bilateral derivatives market. Now, to the extent that previously bilateral trades are cleared, counterparty credit risk will be centralized in one place: clearinghouses. As long as clearinghouses can contain counterparty credit risk, their introduction will have effectively removed the systemic risk inherent in derivatives transactions from the financial system.

Whether clearinghouses will be able to contain counterparty credit risk thus becomes the all-important question. If they cannot, then the introduction of clearinghouses is likely to have the perverse effect of increasing systemic risk, rather than mitigating it, because the failure of a clearinghouse, as the counterparty to every buyer and every seller, will transmit losses throughout the financial system and, because such a failure is most likely in a period of extreme financial stress, either trigger still more failures or necessitate a government bailout. The stakes, in other words, are high. The discussion that follows will examine the clearinghouse in greater detail, focusing on who will ultimately decide such critical questions as who the clearinghouse members will be, what the clearinghouse reserve requirements will be, and what financial products the clearinghouse will clear.

2. Clearinghouse Membership

A first question to answer is who the clearinghouse will be. Clearinghouse members are those with the authority to bring the clearinghouse into derivatives trades, either directly by acting as an agent of the clearinghouse in executing trades with a counterparty or indirectly through novation of a contract separately entered into with the counterparty.⁹⁴ Thus, the clearinghouse functions only through its members. The question of clearinghouse membership thus becomes critical. Who will they be? From what pool will they be drawn, and what characteristics will they share?

First and most obviously, its members are likely to be the large dealers that execute trades that, in the new world of mandatory clearing, must be cleared by the clearinghouse.⁹⁵ But dealer membership raises the specter of anticompetitive behavior and the risk that large dealers will use clearinghouse access to protect their market share from new entrants. Recognizing this possibility, Congress in the Dodd–Frank Act required that clearinghouse membership rules be objective, be publicly disclosed, and “permit fair and open access.”⁹⁶ In putting these policies into effect, the regulators have gone some distance toward defining the contours of clearinghouse membership, but the clearinghouse itself will still have considerable discretion in determining the policies and procedures relating to membership.

Both the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) have proposed rules forcing open clearinghouse membership to all market participants meeting basic financial tests focusing on the risks prospective members would pose to the clearinghouse.⁹⁷ Following on the core risk requirement that clearinghouses be

⁹⁴ See *supra* note 92.

⁹⁵ See Antony Bryceson, *Clearing OTC Derivatives: The Dodd–Frank Act and the New EU Regulation*, PRACTICAL L. COMPANY, <http://us.practicallaw.com/1-504-8968?q#null> (last modified Jan. 1, 2011).

⁹⁶ Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, sec. 725(c), § 5b(c), 124 Stat. 1376, 1688 (2010) (codified at 7 U.S.C. § 7a-1(c) (Supp. IV 2010)); see also Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. 3698, 3700–01 (proposed Jan. 20, 2011) (to be codified at 17 C.F.R. pt. 39).

⁹⁷ See, e.g., Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. 69,334, 69,415 (Nov. 8, 2011) (codified at 17 C.F.R. pts. 1, 21, 39, 140) (requiring clearinghouses to “allow all market participants who satisfy participation requirements to become clearing members”); Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. 14,472, 14,479 (proposed Mar. 16, 2011) (to be codified at 17 C.F.R. pt. 240).

able to withstand the default of their largest member,⁹⁸ the basic membership test is whether the prospective member has “sufficient financial resources and operational capacity to meet the obligations arising from participation” in the clearinghouse.⁹⁹ The regulators therefore accept that clearinghouse membership standards will focus on capital requirements. Allowing capital requirements for membership to be set too high, however, goes against the principle of open access and raises the specter of anticompetitive behavior on the part of the clearing members. Both regulatory agencies would therefore cap the clearinghouse minimum-capitalization requirements at \$50 million.¹⁰⁰ In other words, every market participant with \$50 million in capital and an ability to meet ongoing operational requirements gets in.¹⁰¹

Having stipulated the basic admissions criteria for clearinghouse membership, the regulators reaffirm the authority of clearinghouses to make their own rules with regard to membership privileges by expressly allowing clearinghouses to scale a member’s activities to the risks the member poses to the clearinghouse.¹⁰² Members, that is, need not participate in clearing on equal terms. As described in the SEC’s proposed rule, “[T]he clearing agency’s policies and procedures could be reasonably designed to limit the activities of the participant in comparison to the activities of other participants that maintained a higher net capital level.”¹⁰³ Although this principle of scalable membership privileges reintroduces discretion to clearinghouses, both regulators emphasize that any differential granting of access among members

⁹⁸ Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,479. For further discussion of proposed capital requirements as they apply to clearinghouse’s “largest members,” see *infra* Part I.C.3.

⁹⁹ Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. 3698, 3700 (proposed Jan. 20, 2011) (to be codified at 17 C.F.R. pt. 39).

¹⁰⁰ Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69,355; Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,482. The SEC also expressly allows the minimum capital requirement to be raised upon a showing by the clearinghouse to the SEC that raising the bar is necessary for risk management purposes. *Id.*

¹⁰¹ In justifying the \$50 million minimum-capital limit, the SEC points out that only 4% of broker-dealers could satisfy this test and asserts that making the test any higher “could introduce unnecessary barriers to clearing access.” *Id.* Proposed Rule 17Ad-22(d)(4) sets forth several general, ongoing operational rules requiring “clearing agencies to establish, implement, maintain and enforce written policies and procedures reasonably designed to identify sources of operational risk and minimize these risks through the development of appropriate systems, controls, and procedures.” *Id.* at 14,486. Only one specific example of an operational requirement is provided as a “business continuity plan[] that allow[s] for timely recovery of operations.” *Id.*

¹⁰² *Id.* at 14,482; Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. at 3701.

¹⁰³ Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,482.

must be founded upon written policies and procedures and must be based upon principles of risk management.¹⁰⁴ The regulators, in other words, are concerned that the scalability of membership privileges will become the bar to competition that access to membership cannot be under their proposed rule-making. That they have sought to combat this by adopting principles, rather than rules, further reflects the amount of discretion that will remain with clearinghouses.

Both regulatory agencies would bar clearinghouses from requiring members to be dealers, maintaining a swap portfolio of a certain size, or clearing a minimum volume of transactions.¹⁰⁵ The CFTC goes further, adding to these bright-line rules several standards in principle, including a no-less-restrictive-alternative principle under which clearinghouses are enjoined from adopting restrictive membership requirements if less restrictive requirements would achieve the same objective and not materially increase clearinghouse or member risk.¹⁰⁶ The SEC rule-making, by contrast, seems to admit considerably more discretion on the part of the clearinghouse in designing its membership requirements. For example, while acknowledging that portfolio size and trading volumes are generally poor proxies for risk, the SEC emphasizes that they could be used as factors for admission as long as they are not absolute bars to entry.¹⁰⁷

In requiring the admission of nondealers as clearinghouse members, the regulators are seeking to promote indirect clearing arrangements. Such arrangements, where nonmembers clear their trades through separate contractual arrangements with a clearing member, are also referred to as “correspondent clearing.”¹⁰⁸ For correspondent clearing to work, clearinghouse

¹⁰⁴ *Id.* at 14,482–83; *see also* Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. at 3701.

¹⁰⁵ Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69,353–54; Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,480–82.

¹⁰⁶ Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69,352.

¹⁰⁷ In its rule-making, the SEC states:

[T]he proposed rule would not prohibit a clearing agency that provides CCP services from considering portfolio size and transaction volume as one of several factors when reviewing a potential participant’s operations. Rather, the proposed rule would prohibit the establishment of minimum portfolio sizes or transaction volumes that by themselves would act as barriers to participation by new participants in clearing.

Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,482.

¹⁰⁸ LYNN M. LOPUCKI, COMMERCIAL TRANSACTIONS: A SYSTEMS APPROACH 353 (2003).

members have to be willing to enter into these arrangements with nonmembers. Recognizing that dealer-members may be unwilling to enter into these arrangements with their competitors, the regulators have sought to mandate clearing access for nondealers.¹⁰⁹ While the SEC has been more explicit in articulating the rationale underlying this rule-making,¹¹⁰ the CFTC can be seen to have acted out of similar considerations in, for example, adopting its proposed rule prohibiting clearinghouses from requiring at least one of the parties to a trade to be clearinghouse members.¹¹¹ Again, however, in the interest of greater competition among dealers, these proposed rules do not require clearinghouses to disregard considerations of risk or to compromise on other admissions standards in order to promote the admission of nondealers, instead requiring only that clearinghouses not deny membership “to otherwise qualified persons solely by virtue of the fact that they do not perform any dealer . . . services.”¹¹²

In sum, the regulators are aware that the goal of enhancing dealer competition through open and fair access to clearing will occasionally clash with the goal of containing systemic risk.¹¹³ And it is important to note that,

¹⁰⁹ The logic underlying this view is that large dealers have an incentive to keep new entrants—smaller dealers who cannot meet membership-eligibility requirements—from capturing their trading volume. It is predictable, therefore, that large dealers will deny correspondent clearing arrangements with small dealers to deny them access to this trading volume. However, nondealer clearing members, such as hedge funds, will not have these incentives and may therefore be willing to enter into correspondent clearing arrangements with small dealers. To allow these arrangements to proliferate, the regulators are seeking to protect nondealer access to clearing membership. Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,481.

¹¹⁰ In the words of the Commission:

The Commission preliminarily believes that requiring clearing agencies that perform CCP services to allow persons who are not dealers . . . to become members of the clearing agency will promote more competition in and access to clearing through facilitating indirect clearing arrangements, commonly referred to as correspondent clearing. Correspondent clearing is an arrangement between a current participant of a clearing agency and a non-participant that desires to use the clearing agency for clearance and settlement services.

Id.

¹¹¹ See Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69,360.

¹¹² Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. at 14,481.

¹¹³ See, e.g., Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. 3698, 3700, 3701 (proposed Jan. 20, 2011) (to be codified at 17 C.F.R. pt. 39) (recognizing the “tension between these goals” but asserting a belief that “they can be harmonized”); Ownership Limitations and Governance Requirements for Security-Based Swap Clearing Agencies, Security-Based Swap Execution Facilities, and National Securities Exchanges with Respect to Security-Based Swaps Under Regulation MC, Exchange Act Release No. 63,107, 75 Fed. Reg. 65,882, 65,886 (proposed Oct. 26, 2010) (to be codified at 17 C.F.R. pt. 242) [hereinafter Proposed SEC Rule Regarding Ownership and Governance] (acknowledging that “affording

when they do clash, the regulators' consistent choice is to prefer the objective of risk management to that of enhanced competition among dealers. This underscores once again that risk management is primary in clearinghouse design and that the impulse to mandate inclusiveness in membership must be tempered by the need to allow clearinghouses the discretion to appropriately manage systemic risk. At the end of the day, clearinghouses will draft their own criteria for admission and design their own guidelines for access, subject to relatively few bright-line rules, provided that they can defend their policies and procedures as necessary for the management of systemic risk.

3. *Loss Mitigation: Netting and Reserving*

Clearinghouses have two basic tools for managing counterparty credit risk: netting and reserving. Netting can be understood as a positive externality of centralization. Once transactions are centralized on a clearinghouse, netting works automatically to reduce total losses. A reserve, by contrast, must be built and overseen, which requires human intervention and, therefore, governance.

Netting reduces total losses stemming from the failure of a dealer by offsetting the dealer's negative (or "out of the money") positions against its positive (or "in the money") positions.¹¹⁴ Netting is only possible with some level of centralization. To see this, consider the effects of a dealer's failure in the more-or-less decentralized world of bilateral transactions. In this scenario, the dealer may have positive trades with some counterparties and negative trades with others, but there would be no mechanism by which the positions could be combined to mitigate the aggregate loss. Contrast this with an environment in which all derivatives transactions are cleared by a single clearinghouse, in which case the aggregate loss stemming from a dealer's failure could be reduced by offsetting all of the dealer's positive trades with its negative trades.¹¹⁵ Real-world obstacles to such idealized cross-netting include

greater access to the clearing agency at some point may come at the expense of sound risk management practices").

¹¹⁴ SHANI SHAMAH, *A CURRENCY OPTIONS PRIMER* 55 (2004); *see also* ROBERT DUBIL, *FINANCIAL ENGINEERING AND ARBITRAGE IN THE FINANCIAL MARKETS* 146 (2011).

¹¹⁵ Netting through a clearinghouse may reduce systemic risk if a dealer becomes insolvent. To see this, assume that Dealer A is down \$100 on its position to Dealer B, who is down \$100 on its position to Dealer C, who is down \$100 on its position to Dealer A. Without clearing, if Dealer A defaults, Dealer B effectively loses \$100. A clearinghouse, however, can make adjustments across positions, reallocating the gains and losses so that Dealer B is made whole and Dealer C is no better or worse off than it would have been prior to A's default. This form of multilateral netting effectively reduces counterparty risk, thereby mitigating the systemic risk posed by the failure of a significant dealer. In order to accomplish netting, however, derivatives

multiple clearinghouses that are not linked, as well as contractual and other bars to netting across instruments and asset classes.¹¹⁶ Nevertheless, netting can play a significant role in reducing aggregate loss from counterparty credit risk without significant human intervention.¹¹⁷

The second means by which clearinghouses seek to contain counterparty credit risk is through the creation of reserves to settle the losses stemming from default. *Reserving* is a term from the insurance industry referring to the creation of pools of capital to pay expected losses.¹¹⁸ The term is not typically used in this context; however, clearinghouses clearly do build reserves against counterparty credit risk loss both through the taking of margin collateral and through the establishment of a guaranty fund, each of which is discussed below.

Clearinghouses take collateral, referred to as margin, from their members.¹¹⁹ There are two forms of margin: initial margin and variation margin.¹²⁰ Initial margin is the amount of collateral that a member must post to the clearinghouse to clear a trade.¹²¹ Variation margin is exchanged daily between the clearinghouse and the trader to reflect changes in value of the trader's position over time.¹²² The amount of each is the product of a fairly complex analysis. The amount of initial margin will be based upon the risk posed to the clearinghouse from the cleared trade—the expected cost to the clearinghouse of settling the trade in the event that the defaulting member fails to make a required variation payment.¹²³ The initial margin calculation thus

trades must be treated differently in bankruptcy than the claims of other creditors, as indeed they are. See *supra* note 85.

¹¹⁶ See Manmohan Singh, *Making OTC Derivatives Safe—A Fresh Look 5* (Int'l Monetary Fund, Working Paper No. 11/66, 2011), available at <http://www.imf.org/external/pubs/ft/wp/2011/wp1166.pdf> (“[I]f there are multiple CCPs that are not linked, the benefits of netting are reduced, because cross-product netting will not take place (since CCPs presently only offer multilateral netting in the *same* asset class and not *across* products).”).

¹¹⁷ See Pirrong, *supra* note 9 (manuscript at 3–4); Manmohan Singh, *Collateral, Netting and Systemic Risk in the OTC Derivatives Market* (Int'l Monetary Fund, Working Paper No. 10/99, 2010), available at <http://www.imf.org/external/pubs/ft/wp/2010/wp1099.pdf>.

¹¹⁸ Ronald F. Wiser, *Loss Reserving*, in CAS. ACTUARIAL SOC'Y, FOUNDATIONS OF CASUALTY ACTUARIAL SCIENCE 197, 197 (4th ed. 2001) (“Loss reserving is the term used to describe the actuarial process of estimating the amount of an insurance company's liabilities for loss and loss adjustment expenses.”).

¹¹⁹ See LOADER, *supra* note 7, at 125.

¹²⁰ *Id.* at 129.

¹²¹ ANDREW M. CHISHOLM, AN INTRODUCTION TO CAPITAL MARKETS: PRODUCTS, STRATEGIES, PARTICIPANTS 254–56 (2002).

¹²² *Id.*

¹²³ See Duffie et al., *supra* note 40, at 7. Should a trader default on a required variation payment, the clearinghouse would liquidate the instrument to settle the trade with the holder of the opposite position. *Id.*

depends upon the volatility and liquidity of the underlying instrument, as well as the size of the trade.¹²⁴ Variation margin, as the name suggests, changes depending upon fluctuations in the value of the trade. For relatively liquid instruments, such as interest rate swaps, the value of the trade can be marked to market and the variation margin easily determined by reference to the current market value.¹²⁵ For less liquid instruments without a readily ascertainable market value, however, clearinghouses will be forced to mark to model,¹²⁶ thus introducing the possibility of error inherent in such models.¹²⁷ Variation margin can result in the transfer of funds either way—from the trader to the clearinghouse or from the clearinghouse to the trader—depending upon fluctuations in the value of the instrument, but again, the clearinghouse is always net zero in variation margin because the gains of one trader triggering a clearinghouse margin payment will be exactly offset by the losses of another trader triggering a transfer to the margin account of the clearinghouse.

Margin accounts may be adequate to settle one-off failures in actively traded instruments. The success of margin as a defense against systemic risk, however, depends upon the ability of the clearinghouse to unwind positions in a timely and orderly manner. In the case of the default of a significant member holding large, inactively traded positions, it may be difficult for the dealer to manage the default by recourse to the defaulting dealer's margin alone. The lack of active trading in an instrument may necessitate a significant reduction in price to liquidate the position, especially if it is a large position. Likewise,

Because there will be some time lag between the calculation of and default on the variation payment, on the one hand, and the liquidation of the instrument, on the other, the clearinghouse must set initial margin at an amount equal to potential changes in market value during this time lag. *See id.* (“The initial margin should exceed, in most extreme scenarios, the change in market value of the derivatives position over this time window.”).

¹²⁴ *See id.* (“For example, the initial margin for a credit default swap is generally greater than that for an interest rate swap of the same notional size because of the potential of sudden changes in the credit quality of borrowers referenced in most credit default swaps.”). Liquidity is a consideration because “the difference between the bid and offer prices for some types of derivatives could suddenly increase during a period of financial stress.” *Id.*

¹²⁵ *See* Aline van Duyn & Gregory Meyer, *Exchange Template for Derivatives Criticised*, FIN. TIMES (Sept. 15, 2010, 8:14 PM), <http://www.ft.com/cms/s/0/c222f2ae-c0dc-11df-94f9-00144feab49a.html#axzz1kt6kO3VU> (citing a major dealer's estimate that “the most liquid derivative was the 10-year US dollar interest rate swap, with just over 500 trades a day” and that “[t]he most liquid credit default swaps, used to place bets or hedge against defaults on debt, were contracts on General Electric, and those traded just 15 times per day”).

¹²⁶ *See* STEVEN ALLEN, FINANCIAL RISK MANAGEMENT 110–20 (2003).

¹²⁷ On the failure of quantitative models and their consequences, see Felix Salmon, *A Formula for Disaster*, WIRED, Mar. 2009, at 74. Another famous example would be the failure of the quantitatively driven investment fund Long-Term Capital Management. *See generally* ROGER LOWENSTEIN, WHEN GENIUS FAILED (2000) (detailing the rise and fall of Long-Term Capital Management).

even actively traded instruments may decline significantly in value if multiple large positions must be sold at the same time. Such fire-sale prices may compound losses from default and exceed the defaulting dealer's margin account, in which case an additional mechanism would be required if the clearinghouse is to contain systemic risk. This is the guaranty fund.

A clearinghouse's guaranty fund is quite simply a reserve account against member default.¹²⁸ Each member, upon joining the clearinghouse, must make a contribution to the guaranty fund separate from and in addition to the establishment of a margin account.¹²⁹ The guaranty fund is then held by the clearinghouse to settle losses from dealer default in excess of margin.¹³⁰ Again, as with netting, the creation of a guaranty fund as a defense against systemic risk depends upon centralization. Without centralizing derivatives trading through a clearinghouse or other intermediary, market participants would have no mechanism by which to create pooled reserves and establish orderly default-management procedures.

The guaranty fund is likely to be the clearinghouse's last best means of containing counterparty credit risk.¹³¹ A clearinghouse may design additional protections, such as a further contractual right to contributions from clearinghouse members, but these additional protections are likely to be of less value in times of financial stress (when the member-guarantors are likely in weak financial condition themselves).¹³² Moreover, a contractual commitment from clearinghouse members to provide additional capital in times of severe stress does not, in any event, have the effect of *containing* risk because the required additional contributions have the effect of spreading loss to nondefaulting dealers.¹³³ Thus, the likely recourse to clearinghouse resources in the event of member default would proceed first from the exhaustion of a defaulting member's own margin account, second to the defaulting member's

¹²⁸ See Duffie et al., *supra* note 40, at 7 (defining a clearinghouse's guaranty fund as an "additional layer of defense, after initial margin," for the purpose of covering losses arising out of the failure of members to perform on a cleared derivative).

¹²⁹ *Id.*

¹³⁰ *Id.* at 7, 25.

¹³¹ *See id.*

¹³² *Id.* at 19, 22.

¹³³ Moreover, banks may object to backup draws on member interests in the event that the guaranty fund is depleted because the existence of this contingent liability would require banks to set aside capital against this prospective loss, thereby incurring costs today on an event that may not occur in the future. From a policy perspective, of course, this does not amount to a reason not to adopt backup draws, but as a practical matter, it may amount to an explanation for why they may not in fact be adopted and a further example of the moral hazard problem affecting the large dealers, described in greater detail *infra* Part II.A.1.

own guaranty fund contributions, and third to the pooled guaranty fund. This is the “waterfall” of clearinghouse losses.¹³⁴ Losses in excess of clearinghouse resources would lead to the failure of the clearinghouse and the imposition of loss on the clearinghouse’s counterparties—the members transacting through the clearinghouse.

Both netting and reserving are means by which clearinghouses seek to contain counterparty credit risk.¹³⁵ Failure to do so would result in clearinghouses, because of their central position in derivatives transactions, spreading loss and, ironically, *increasing* systemic risk. Furthermore, how the clearinghouses adapt and use these tools is left largely to the discretion of the clearinghouses themselves, underscoring again the vital importance of clearinghouse governance.

With regard to margin, although Dodd–Frank requires clearinghouses to use margin, it does not delegate authority to set clearinghouse margin to the regulators but rather leaves this determination up to the clearinghouses themselves.¹³⁶ The regulators have responded to this statutory structure by requiring clearinghouses to use “risk-based models” to determine margin requirements but leaving the substance and frequency of the risk modeling and margin requirements up to the clearinghouses themselves.¹³⁷ The SEC, for example, explicitly allocates discretion to clearinghouses to “tailor” margin requirements to their particular needs.¹³⁸

¹³⁴ See Duffie et al., *supra* note 40, at 24 fig.3.

¹³⁵ *Id.* at 4; see also JON GREGORY, COUNTERPARTY CREDIT RISK: THE NEW CHALLENGE FOR GLOBAL FINANCIAL MARKETS 50–53 (2010). Neither is necessarily unique to clearinghouses. Private parties can and typically do demand collateral in noncleared derivative trades. See Duffie et al., *supra* note 40, at 17. Moreover, private parties can also enter into netting agreements, allowing multiple contracts to be offset against each other. The main advantages of the clearinghouse would seem to be that it can accomplish netting more efficiently than can disaggregated private parties and that it can more easily provide for the creation of a guaranty fund. Insofar as clearinghouses can accomplish ex post loss mitigation more effectively through netting, it may be possible for them to take less collateral than private parties would ex ante and still maintain the same overall risk exposure.

¹³⁶ The Act requires dealers and major swap participants to meet initial and variation margin requirements but delegates regulatory authority to set those requirements only for uncleared swaps. See Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 731, 124 Stat. 1376, 1705 (2010) (codified as amended at 7 U.S.C. § 4s(e)(2)(A)–(B) (Supp. IV 2010)) (concerning swaps); *id.* § 764(a), 124 Stat. at 1786–87 (concerning security-based swaps).

¹³⁷ Clearing Agency Standards for Operation and Governance, Exchange Act Release No. 64,017, 76 Fed. Reg. 14,472, 14,478 (proposed Mar. 16, 2011) (to be codified at 17 C.F.R. pt. 240); see also Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. 69,334, 69,365 (Nov. 8, 2011) (codified at 17 C.F.R. pts. 1, 21, 39, 140).

¹³⁸ Clearing Agency Standards for Operation and Governance, 76 Fed. Reg. at 14,478. The CFTC offers a bit more detail, requiring that the clearinghouses “appropriately address jump-to-default risk” but leaving all

With regard to the guaranty fund and other capital requirements, Dodd–Frank generally requires a clearinghouse to have at least sufficient capital reserves to be able to withstand the default of its largest member and to cover operating costs for one year.¹³⁹ The regulators’ proposed rules regarding capital requirements differ slightly. The CFTC requires sufficient capital to enable the clearinghouse to withstand the default of its single largest member unless the clearinghouse is deemed systemically important, in which case it must have sufficient capital to withstand the default of its two largest members.¹⁴⁰ The SEC, by contrast, would require clearinghouses to “maintain sufficient financial resources to withstand, at a minimum, a default by the two participants to which it has the largest exposures in extreme but plausible market conditions,” unless the clearinghouse does not clear credit default swaps, in which case it needs to be able to withstand the default only of its single largest member.¹⁴¹ In spite of these general guidelines, clearinghouses retain broad discretion over how they model risk and design their reserve requirements. Overseeing these matters is perhaps the most vital aspect of clearinghouse governance.

4. *Clearing Eligibility*

The Dodd–Frank Act makes it illegal to enter into a swap transaction without submitting the swap to a clearinghouse “if the swap is required to be cleared.”¹⁴² Characteristically, the Act leaves the determination of what is required to be cleared to the regulators, here the SEC and the CFTC, enumerating a set of criteria on which the determination should be made, including the liquidity of the instrument and the quality of available pricing data.¹⁴³ Liquidity and pricing data figure prominently in the determination of clearing eligibility because they are essential factors in valuing derivative

details up to the discretion of the clearinghouses themselves. Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. 3698, 3704 (proposed Jan. 20, 2011) (to be codified at 17 C.F.R. pt. 39). Jump-to-default risk is “the risk that the sudden onset of a credit event will cause an abrupt change in a firm’s CDS exposure.” U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-09-397T, SYSTEMIC RISK: REGULATORY OVERSIGHT AND RECENT INITIATIVES TO ADDRESS RISK POSED BY CREDIT DEFAULT SWAPS 3 (2009).

¹³⁹ Dodd–Frank Wall Street Reform and Consumer Protection Act sec. 725(c), § 5b(c), 124 Stat. at 1688 (applying this rule to the CFTC); *id.* § 763(c), 124 Stat. at 1772 (applying the rule to the SEC).

¹⁴⁰ See Derivatives Clearing Organization General Provisions and Core Principles, 75 Fed. Reg. at 69,344–45. On the factors for deeming an institution to be “systemically important,” see 12 U.S.C. § 5468.

¹⁴¹ Clearing Agency Standards for Operation and Governance, 76 Fed. Reg. at 14,479.

¹⁴² Dodd–Frank Wall Street Reform and Consumer Protection Act § 723, 124 Stat. at 1675 (regarding swaps); *id.* § 763(a), 124 Stat. at 1762 (regarding security-based swaps).

¹⁴³ *Id.* § 723(a)(3), 124 Stat. at 1676, 1677 (CFTC review and criteria); *id.* § 763(a)–(b), 124 Stat. at 1762–69 (SEC review and criteria).

instruments and therefore in determining appropriate clearinghouse reserves, either in the form of margin or guaranty fund contributions.¹⁴⁴ Systemic risk is not well managed by a clearinghouse that accepts illiquid or difficult-to-price instruments for clearing because it may thus find itself with inadequate reserves and, therefore, at greater risk of failure. Foreseeing this possibility, the Act prohibits the regulators from requiring a swap to be cleared if it would threaten the “financial integrity” of the clearinghouse.¹⁴⁵

Of course, requiring too little clearing also has negative implications for the effective management of systemic risk. Because clearinghouses are the principal means of containing systemic risk, allowing derivatives transactions to take place off of clearinghouses effectively means that the systemic risk inherent in those trades continues unabated.¹⁴⁶ The larger the volume of trading that takes place off of the clearinghouse, the larger the lingering threat of systemic risk.¹⁴⁷ In this way, both too much and too little clearing threaten to increase systemic risk.

The regulatory solution to this problem appears to be to allocate considerable discretion to the clearinghouses themselves. Whether a swap “is required to be cleared” turns upon whether there is a clearinghouse that accepts the swap for clearing.¹⁴⁸ It is thus for the clearinghouse to make the initial

¹⁴⁴ Illiquid or difficult-to-price instruments pose problems for effective daily margining and, in the event of dealer failure, are difficult to unwind. Therefore, making the clearinghouse a party to such trades through clearing increases the risk of loss to the clearinghouse and, in an extreme case, increases the likelihood of clearinghouse failure. For a discussion of price discovery, see *supra* note 18 and accompanying text.

¹⁴⁵ Dodd–Frank Wall Street Reform and Consumer Protection Act sec. 745(b), § 5c, 124 Stat. at 1737.

¹⁴⁶ This is perhaps most clear when one considers banks’ incentives. If trades that are not cleared will be subject to higher capital charges or higher margin, a percentage of those trades will likely not be done, leaving the risk that the bank would otherwise have transferred on its own balance sheet. Balancing the cost of keeping the risk on the bank’s balance sheet against the cost of entering into the swap, indeed it seems likely that only the riskiest trades will then get done because less risky positions impose less cost on the balance sheet. Hence, either more risk remains at banks, or these high-risk, uncleared trades essentially remain subject to the problems experienced in the OTC market during the recent crisis—opacity as to both the value of the trade and the value of any collateral, difficulty in posting collateral, heightened fear of counterparty defaults, panicked collateral calls, and so on.

¹⁴⁷ It is worth pointing out in this context, as at least one other commentator has, that “the instruments that brought down AIG would never have been clearable.” Pirrong, *supra* note 84, at 24.

¹⁴⁸ Dodd–Frank Wall Street Reform and Consumer Protection Act § 723(a)(3), 124 Stat. at 1676; see also SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP & AFFILIATES, THE DODD–FRANK ACT: COMMENTARY AND INSIGHTS 56 (2010), available at http://www.skadden.com/cimages/sitefile/skadden_insights_special_edition_dodd-frank_act1.pdf.

determination of clearing eligibility.¹⁴⁹ Moreover, in the regulations implementing the statutory mandate, the CFTC makes clear that not all swaps that are in fact accepted for clearing will be made a subject of mandatory clearing.¹⁵⁰ Rather, “a DCO is required to submit to the Commission each swap . . . that it plans to accept for clearing, and the Commission is required to review each submission and determine whether clearing is required.”¹⁵¹ However, in its review, the CFTC notes that it will take into account the “views [of the clearinghouse] as to whether the swaps being submitted should be subject to a clearing requirement.”¹⁵²

In addition to the discretion of the clearinghouse in determining whether to accept a particular swap for clearing, thereby triggering a submission to determine whether clearing should be mandatory, the Dodd–Frank Act also allows for regulators to make this decision on their own accord, thus effectively mandating clearing for a particular category of swaps.¹⁵³ However, it is difficult to imagine that the regulators will act very aggressively in this context, because any error on their part essentially forces an inappropriate instrument onto a clearinghouse and thus increases systemic risk, the very opposite of the effect the regulators are seeking. Likewise, regulators may hesitate to disturb clearinghouse determinations regarding clearing eligibility in light of this fine line between mitigating and creating systemic risk. This conjecture is supported by the statement of the CFTC, which emphasized that at least its initial efforts to mandate clearing will be exclusively in reaction to determinations made by existing clearinghouses: “[T]he initial mandatory clearing determinations would only involve swaps that are either already being cleared or that a [clearinghouse] wants to clear. Once those determinations are made, the Commission will be in a better position to assess that portion of the swaps market that remains uncleared.”¹⁵⁴ The greater part of the discretion on this point, in other words, is likely to lie with the clearinghouse.

Some have suggested a structural solution to the clearing-eligibility problem, essentially advocating the adoption of punitively high margin

¹⁴⁹ If a clearinghouse decides a particular swap should be cleared, it submits its determination to the appropriate regulator for approval. Dodd–Frank Wall Street Reform and Consumer Protection Act § 723(a)(3), 124 Stat. at 1676.

¹⁵⁰ See 17 C.F.R. pt. 39.4(c)(2) (2011).

¹⁵¹ Process for Review of Swaps for Mandatory Clearing, 76 Fed. Reg. 44,464, 44,468 (July 26, 2011) (codified at 17 C.F.R. pts. 39, 140).

¹⁵² *Id.*

¹⁵³ Dodd–Frank Wall Street Reform and Consumer Protection Act § 723(a)(3), 124 Stat. at 1676.

¹⁵⁴ Process for Review of Swaps for Mandatory Clearing, 76 Fed. Reg. at 44,469.

requirements for bilateral trades, thereby incentivizing dealers to move as much trading onto clearinghouses as possible.¹⁵⁵ Others have responded to this suggestion by arguing that, because dealers would likely pass these costs on to their customers in the bilateral market, imposing them would have the effect of penalizing small-end users who have highly specific risk management needs—community banks, for example—thereby making it impossible for them to manage risk effectively.¹⁵⁶ As a result, it is highly likely that a great deal of discretion in determining clearing eligibility will remain in the hands of the clearinghouses.

II. INCENTIVE PROBLEMS IN CLEARINGHOUSE OPERATION

Thus, as we have seen, a great deal of discretion in the management of systemic risk will reside in the clearinghouses themselves. Although subject to some degree of regulatory supervision, clearinghouses have the discretion in the first instance to decide who their members will be and what privileges they will have, what reserves members will be required to set aside, and what products are eligible to be cleared. These decisions, of course, go to the heart of systemic risk management. The clearinghouses, in other words, have the basic responsibility for making the decisions that determine whether they will be successful in managing systemic risk. The question thus becomes who at the clearinghouse will make those decisions. Who, in other words, will direct clearinghouse governance?

The first and most obvious answer to this question is that those parties with commercial interests in the clearinghouse, either as dealers or as customers, are most likely to seek a controlling role in clearinghouse governance, either by investing in the clearinghouse and exerting this control as owners or by leveraging their commercial relationships to exert influence over clearinghouse governance. But do these commercial parties have the correct incentives to manage systemic risk? The dealers, after all, are the same financial institutions

¹⁵⁵ See, e.g., Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. 23,732, 23,744 (proposed Apr. 28, 2011) (to be codified at 17 C.F.R. pt. 23) (requiring each covered dealer to calculate and to collect from its counterparties initial margin for each bilateral swap transaction that was not cleared by or through a DCO); Duffie et al., *supra* note 40, at 13 (“[R]egulations should favor the provision of collateral to counterparties and the clearing of derivatives positions.”).

¹⁵⁶ See, e.g., Letter from Mark Scanlan, Vice President of Agric. & Rural Policy, Indep. Cmty. Bankers of Am., to David A. Stawick, Sec’y, CFTC (Feb. 22, 2011), *available at* <http://www.sec.gov/comments/s7-39-10/s73910-47.pdf> (urging the SEC to adopt an exception to capital and margin requirements for community banks that would not hinder the use of customized swaps utilized by community banks, which generally have little risk).

on whose watch the housing bubble was inflated, the bursting of which nearly destroyed the global financial system.¹⁵⁷ Even if derivatives dealers are not directly responsible for the financial crisis, their hands may not be sufficiently clean to leave critical decisions in the management of systemic risk largely up to their discretion. Likewise, the commercial incentives of end users and clearinghouse shareholders may be more powerful than and occasionally contrary to their interest in minimizing systemic risk.

The discussion that follows examines the commercial incentives of the parties involved in derivatives transactions and asks how these incentives are likely to impact clearinghouse governance, specifically with regard to the management of systemic risk. Is the enlightened self-interest of the various commercial parties likely to result in effective governance? Or is there reason to doubt the ability or willingness of various commercial parties to engage in the effective management of systemic risk?

A. *Dealers: Large and Small*

Most derivatives transactions in the United States are concentrated in the hands of a small number of banks. Two frequently cited statistics from a report by the Office of the Comptroller of the Currency reveal that five banks—JPMorgan Chase, Bank of America, Citigroup, Goldman Sachs, and HSBC—account for 96% of the notional amounts and 83% of the net credit exposure of the U.S. banking industry.¹⁵⁸ Others acknowledge the statistic but argue that it is misleading both to view the derivatives market as comprised only of banking companies and to view the market as national, rather than global.¹⁵⁹ A competing study measuring the market from a global perspective not limited to banking companies puts the market share of the five largest U.S.-based dealers at 37%, rather than 96%.¹⁶⁰ The difference in these numbers reflects the fact

¹⁵⁷ The same could be said, of course, of the regulators. *See supra* Part I.B.

¹⁵⁸ *See* ADM’R OF NAT’L BANKS, COMPTROLLER OF THE CURRENCY, OCC’S QUARTERLY REPORT ON BANK TRADING AND DERIVATIVES ACTIVITIES: FIRST QUARTER 2011, at 1, Graph 5A (2011), *available at* <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq111.pdf>.

¹⁵⁹ *See, e.g.*, Letter from Robert Pickel, Exec. Vice Chairman, Int’l Swaps & Derivatives Ass’n, Inc., to Elizabeth M. Murphy, Sec’y, SEC 4 (Nov. 23, 2010) [hereinafter ISDA Comment Letter], *available at* <http://www.sec.gov/comments/s7-27-10/s72710-79.pdf>.

¹⁶⁰ *See Summaries of Market Survey Results*, ISDA, <http://www.isda.org/statistics/recent.html> (last visited Aug. 6, 2012) (reporting results of a survey of seventy-one International Swaps and Derivatives Association (ISDA) “Primary Member firm” participants).

that a significant portion of the derivatives business is offshore.¹⁶¹ But, even considering the market from a worldwide perspective, trading volume remains fairly concentrated, with 82% of the total notional amount outstanding (\$354.6 trillion of \$466.8 trillion) in the hands of fourteen dealers.¹⁶²

How did this happen? Two basic market factors may be sufficient to explain the concentration of trading volume in the hands of a small number of major dealers. First, in a world of bilateral trading and widespread counterparty credit risk, dealers may have developed a preference for trading with large, well-established financial institutions on the grounds that such institutions had higher credit quality and therefore represented lower counterparty credit risk. Second, at least with regard to credit default swaps, part of the explanation is in the product itself.¹⁶³ Credit default swaps are uniquely difficult to hedge. The principal means of doing so requires either taking a position on the underlying debt securities or entering into an offsetting credit default swap.¹⁶⁴ Of these two possibilities, entering into another credit default swap is the better alternative for efficiency reasons—it can be done faster and can more precisely match the risk of the instrument to be hedged. However, because the best way to hedge a credit default swap is with another credit default swap, firms with access to a large volume of credit default swaps are in a better position to manage risk efficiently, which in turn enables them to price aggressively and capture greater volume, thus creating a self-perpetuating cycle concentrating the credit-default-swap market in the hands of a few major dealers. Market factors may thus have been sufficient to drive the vast majority of derivatives trading volume into the hands of a few major dealers.¹⁶⁵

¹⁶¹ The total combined notional amount outstanding of interest rate, credit, and equity derivatives on June 30, 2010, was \$466.8 trillion. *Id.* The five largest U.S.-based dealers accounted for a notional amount outstanding of \$172.3 trillion, representing 37% of the total global notional amount. *Id.*

¹⁶² *Id.*

¹⁶³ Many other types of derivatives products exist aside from CDSs, with CDSs accounting for only 5.6% of the total derivatives market as reported by the ISDA Market Survey. *Id.* The unique structure of CDSs, as further explored in this paragraph, results in the concentration of CDS trading volume in a small group of dealers.

¹⁶⁴ Other underlying assets may be hedged via synthetic positions created by call options, put options, or forward contracts. For example, buying an asset today and at the same time locking in a future selling price with a forward contract generates a hedged return, which does not depend on what happens to the underlying asset price. *See* KOLB & OVERDAHL, *supra* note 13, at 509 (defining synthetic positions).

¹⁶⁵ Some have suggested other reasons for dealers' concentration in CDSs, including the prospect of insider trading on the basis of the dealer's inside knowledge of a borrower's credit situation. *See, e.g.,* Viral V. Acharya & Timothy C. Johnson, *Insider Trading in Credit Derivatives*, 84 J. FIN. ECON. 110 (2007).

Volume, of course, means profitability, both for dealers and for market-infrastructure providers.¹⁶⁶ Clearinghouses, exchanges, and other market-infrastructure providers all depend upon fee income based on trading volume.¹⁶⁷ Moreover, the value of clearinghouses and exchanges to their participants increases on the basis of their ability to offer liquidity,¹⁶⁸ which is of course closely related to trading volume. The ability to provide a high level of liquidity thus gives rise to another self-perpetuating cycle: more volume means more liquidity, which attracts further volume, creating further liquidity, and so on. Furthermore, the marginal cost to a market platform of taking on additional volume is minimal, while the benefits in providing further liquidity are potentially great. As a result, access to volume is extremely valuable to market-infrastructure providers and is a considerable source of market power for dealers.¹⁶⁹ Large dealers are therefore able to extract terms from market-infrastructure providers that smaller dealers cannot hope to receive.¹⁷⁰ Meanwhile, entering into these arrangements lowers large dealers' cost of trading, thereby enabling them to compete more effectively on price and thus capture even greater volume. Moreover, because these deals based on trading volume are available to large dealers but not small dealers, small dealers pay more for market infrastructure, effectively subsidizing the cost of providing these services to their large-dealer competitors.

Because of the differences in market power between large dealers and small dealers, the following discussion considers their incentives separately, examining their sources of profit and how a new regime of mandatory clearing is likely to affect those profits. It also discusses how large and small dealers are likely to react to the new regime and how their actions will affect the ability of clearinghouses to manage systemic risk.

¹⁶⁶ See generally RUBEN LEE, *RUNNING THE WORLD'S MARKETS: THE GOVERNANCE OF FINANCIAL INFRASTRUCTURE* 9–13 (2011) (defining *infrastructure* and discussing the economics of providers of market infrastructure).

¹⁶⁷ *Id.* at 128.

¹⁶⁸ *Id.* at 257, 267.

¹⁶⁹ See Letter from Kenneth A. Monahan, Vizier Ltd., to Elizabeth M. Murphy, Sec'y, SEC 4 (Feb. 8, 2011) [hereinafter Monahan Comment Letter], available at <http://www.sec.gov/comments/s7-27-10/s72710-107.pdf> (“[E]ven the top 100 end users combined have less market impact than the smallest dealer.”).

¹⁷⁰ Market platforms offer discounts, rebates, and profit-sharing arrangements to large dealers, essentially seeking to buy their trading volume. See Letter from Dennis M. Kelleher, President & CEO, Better Mkts., Inc., and Wallace C. Turbeville, Derivatives Specialist, Better Mkts., Inc., to Elizabeth M. Murray, Sec'y, SEC 3 (Nov. 26, 2010) [hereinafter Better Markets Comment Letter], available at <http://www.sec.gov/comments/s7-27-10/s72710-88.pdf> (“It [is] commonplace for Market Infrastructure providers to buy volume from dominant dealers by so-called commercial arrangements like revenue or profit sharing, liquidity rebates, or discounts.”).

1. Large Dealers

Dealers profit from derivatives transactions through the spreads that they charge on their trades—the difference between the (lower) price at which they will buy and the (higher) price at which they will sell,¹⁷¹ a fee arrangement familiar to anyone who has ever changed currency at an airport.¹⁷² Dealer profits thus have both a quantitative and a qualitative dimension. The quantitative dimension is simple volume—the more volume a dealer controls, the greater its profits will be even if spreads are relatively narrow. Certain kinds of trades, however, such as highly customized, or “bespoke,” swaps, are qualitatively different from more standardized trades and can therefore command higher spreads and significant profitability without large trading volumes.¹⁷³ This is the qualitative dimension.

Major dealers historically have enjoyed large profits of both types. Because bilateral derivatives trading is notoriously opaque, it is difficult to estimate the profitability of dealers’ trading activities with any precision, but at least one estimate put banks’ revenues from derivatives trading in the tens to hundreds of billions of dollars annually.¹⁷⁴

Clearing, it is generally supposed, will reduce major dealers’ profits from derivatives trading along both quantitative and qualitative dimensions.¹⁷⁵ The mandate to clear as much as possible is likely to reduce the availability of highly customized, high-margin bilateral transactions, thus shrinking profits

¹⁷¹ See Duffie et al., *supra* note 40, at 10

¹⁷² LARRY HARRIS, TRADING AND EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS § 3.4.7, at 58–59 (2003).

¹⁷³ See RICHARD BRUYÈRE ET AL., CREDIT DERIVATIVES AND STRUCTURED CREDIT: A GUIDE FOR INVESTORS 124 (Gabrielle Smart trans., 2006).

¹⁷⁴ See Letter from Sherrod Brown, U.S. Senator, to David A. Stawick, Sec’y, CFTC, and Elizabeth M. Murphy, Sec’y, SEC 4 (Nov. 17, 2010) *available at* <http://www.sec.gov/comments/s7-27-10/s72710-68.pdf> (“[B]anks’ derivatives dealing profits frequently exceed \$100 billion per year . . .”).

¹⁷⁵ Why else, some have argued, would most dealers have lobbied so fiercely against it? Consider the reaction of Senator Harkin:

Some market participants have argued that the types of conflicts described by the Commissions . . . will not emerge because clearing and executing on trading platforms is financially profitable or because clearing does not reduce profits in trading. This argument is incorrect. Indeed, if this were the case, those market participants would not have opposed the clearing and execution requirements of the Act in the first place.

Letter from Tom Harkin, U.S. Senator, to David A. Stawick, Sec’y, CFTC, and Elizabeth M. Murphy, Sec’y, SEC 3 (Nov. 17, 2010) (footnote omitted), *available at* <http://www.sec.gov/comments/s7-27-10/s72710-63.pdf>.

along the qualitative dimension.¹⁷⁶ Likewise, profits derived from the quantitative aspect of derivatives trading are likely to be reduced as well for three basic reasons.¹⁷⁷ First, bid–ask spreads are likely to shrink to the extent that clearing and, especially, exchange trading brings greater transparency to the market, enabling clients to demand narrower spreads and competitors to price more aggressively. Second, clearinghouses are likely to enforce more stringent collateral and reserve requirements than most large derivatives dealers had observed in their bilateral trades, thereby reducing the dealers’ ability to deploy this capital more productively. Although it may be possible, due to the efficiencies promised by clearinghouses through netting, for clearinghouses to demand less ex ante collateral than private parties would have required in the OTC market and nevertheless maintain the same level of risk overall,¹⁷⁸ many have argued that derivatives transactions have been woefully undercollateralized relative to their risk.¹⁷⁹ It is therefore difficult to imagine, especially considering the highly regulated environment in which they are likely to operate, that clearinghouses will be able to demand significantly less collateral than private parties in fact have demanded. Similarly, clearinghouse requirements that dealers maintain segregated collateral accounts may limit the ability of dealers to earn returns by investing client collateral.¹⁸⁰ Third and finally, the institution of clearing, if successful, effectively eliminates dealers’ counterparty credit risk and, with it, the principal advantage of keeping the vast majority of derivatives trading among a

¹⁷⁶ In other words, the profits of dealers’ OTC operations are likely to be eroded as more and more previously customized products are moved into standardized forms and brought onto clearinghouses and, possibly, exchanges. See Brian Bollen, *Central Clearing Could Damage Pensions*, FIN. TIMES (London), Jan. 10, 2011, at 17, 17 (noting that the standardization of previously customized OTC products “would be felt not only on the technical side of the business” but would also affect “mean additional costs (widely estimated at the equivalent of 100–200 basis points lower performance), making it a certain drag on income”).

¹⁷⁷ See, e.g., DARRELL DUFFIE, PEW ECON. POLICY DEP’T, HOW SHOULD WE REGULATE DERIVATIVES MARKETS? (2009), available at http://fic.wharton.upenn.edu/fic/policy%20page/Pew_Duffie_Derivatives_Paper_FINAL-TF-Correction.pdf; ROBERT E. LITAN, INITIATIVE ON BUS. & PUB. POLICY AT BROOKINGS, THE DERIVATIVES DEALERS’ CLUB AND DERIVATIVES MARKETS REFORM: A GUIDE FOR POLICY MAKERS, CITIZENS AND OTHER INTERESTED PARTIES 29 (2010), available at http://www.brookings.edu/~media/Files/rc/papers/2010/0407_derivatives_litan/0407_derivatives_litan.pdf (discussing the likelihood that bid–ask spreads will decrease due to increased transparency despite dealer attempts to widen margins); Duffie et al., *supra* note 40, at 10–11.

¹⁷⁸ See *supra* note 135.

¹⁷⁹ See Singh & Aitken, *supra* note 39, at 12 (finding that, although CCPs are a positive initiative, the recent problems market participants face with derivative positions are those of insufficient collateral and initial margin).

¹⁸⁰ Protection of Collateral of Counterparties to Uncleared Swaps; Treatment of Securities in a Portfolio Margining Account in a Commodity Broker Bankruptcy, 75 Fed. Reg. 75,432, 75,433 (proposed Dec. 3, 2010) (to be codified at 17 C.F.R. pts. 23, 190).

small group of (supposedly) high-credit, quality dealers. As a result, small dealers may be able to compete more effectively with large dealers for trading volume and, if successful, eventually erode the ability of the major dealers to extract concessions and subsidies as a result of their control over volume.

Some challenge the notion that clearing necessarily will reduce the profitability of the major dealers.¹⁸¹ Objectors point to at least two significant advantages to large dealers that may offset the reduction in per-trade profitability. First, clearing reduces banks' regulatory capital requirements because derivatives transactions that require daily payment of variation margin may be excluded altogether from Basel II's risk-based capital requirements.¹⁸² Similarly, banks can attribute a zero-risk weight for regulatory capital purposes to derivative transactions when made through a clearinghouse.¹⁸³ These reductions in banks' regulatory capital requirements will free capital for more productive uses, thereby at least partially offsetting reductions in trading profits. Second, clearing allows large dealers to benefit from trade compression—essentially, the flip side of netting—whereby a dealer's position with a clearinghouse is viewed on the aggregate for purposes of determining collateral requirements.¹⁸⁴ Central clearing may also offer back-office savings to major dealers.¹⁸⁵

¹⁸¹ *E.g.*, Letter from John M. Damgard, President, Futures Indus. Ass'n, to David A. Stawick, Sec'y, CFTC, and Elizabeth M. Murphy, Sec'y, SEC 6 (Nov. 17, 2010) [hereinafter Damgard Comment Letter], available at www.sec.gov/comments/s7-27-10/s72710-62.pdf ("Swap dealers and other enumerated entities . . . will have a significant incentive to submit their trades to a clearinghouse that outweighs any potential pricing advantage they might gain by trading in the OTC markets."); Letter from Ernest C. Goodrich, Jr., Legal Dep't Managing Dir., Deutsche Bank AG, and Marcelo Riffaud, Legal Dep't Managing Dir., Deutsche Bank AG, to David A. Stawick, Sec'y, CFTC, and Elizabeth M. Murphy, Sec'y, SEC 2-3 (Nov. 8, 2010) [hereinafter Goodrich & Riffaud Comment Letter], available at <http://www.sec.gov/comments/s7-27-10/s72710-9.pdf> ("Clearing itself does not adversely affect the profitability of bilateral swaps. In fact, swaps subject to clearing result in more favorable regulatory capital requirements, and clearing can therefore improve profitability." (footnotes omitted)).

¹⁸² See generally BASEL COMM. ON BANKING SUPERVISION, BANK FOR INT'L SETTLEMENTS, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS (2006), available at <http://www.bis.org/publ/bcbs128.pdf>.

¹⁸³ That is, exposure at default of zero. See generally 12 C.F.R. pt. 208 app. F (2011) (discussing capital-adequacy requirements); *id.* pt. 225 app. G (same).

¹⁸⁴ To understand trade compression, consider that, currently, if A enters into a trade with B and into another trade with C, there is no netting across the A-B and A-C transactions. However, if both transactions are centrally cleared and if A-B is positive and A-C is negative, netting will allow for A to post a lower amount of collateral. This compression of trades has the effect of lowering the dealer's total cost of trading.

¹⁸⁵ I am grateful to Professor Whitehead for raising this possibility. He writes:

Today, bank A must enter into, monitor, and coordinate separate collateral arrangements with customers B, C and D. That requires that the trades with each of them be monitored and marked daily/weekly, etc., and collateral sent or received to/from each of them. With a central

Although large dealers' profitability of trading through clearinghouses remains ambiguous and depends, in large part, on the specific rules adopted by clearinghouses and regulatory agencies, there are several reasons to doubt that the advantages to clearing will outweigh their ultimate costs to major dealers. Both of the principal advantages cited above amount to a liberation of unproductive capital from either regulatory requirements or disaggregated margin commitments, but high clearinghouse margin and guaranty fund requirements are likely to more than offset the regulatory capital advantage. Moreover, the advantages of compression may not be so great when compared with collateral requirements that previously may have been honored more in the breach than in the observance and that, going forward, are likely to be strictly enforced. In any case, the compression of spreads and the increase in competition from smaller dealers is likely to significantly erode the trading profits of the major dealers.

All of this, then, raises the question of what dealers are going to do about it. Will they stoically accept reduced profits as the business changes around them, or will they act decisively to preserve the profitability of their business? To ask this question, of course, is to answer it.¹⁸⁶ Indeed, the board of directors of a dealer would breach its fiduciary duties to its shareholders if it did not seek ways to preserve its profitability in a shifting regulatory environment. So, assuming a new regulatory environment of mandatory clearing, we can ask how the major dealers will seek to influence clearinghouse governance to protect the profitability of trading.

Most obviously, perhaps, major dealers have an incentive to exert governance control to keep clearing-eligible products off of clearinghouses so that they can continue to trade in the higher margin bilateral market. The key factors in deciding whether a particular instrument must be cleared are

counterparty, it will be much more of a one-stop system. I suspect the annual back office savings to the large dealers will be significant.

E-mail from Charles K. Whitehead, Assoc. Professor of Law, Cornell Law Sch., to author (Aug. 14, 2011, 6:19 PM) (on file with author).

¹⁸⁶ Any significant doubt on this point is quickly set aside by reference to the amounts dealers have been spending to lobby legislators and regulators on these issues. See *Brokers & Banks Group Spends \$1.3M Lobbying in 1Q*, YAHOO! NEWS (June 30, 2011), <http://news.yahoo.com/brokers-banks-group-spends-1-3m-lobbying-1q-023557519.html> (noting that the securities-industry trade group spent \$1.33 million in the first quarter of 2011 to lobby the federal government on new rules governing the financial markets); Ben Protess, *Wall Street Lobbyist Aims to "Reform the Reform,"* N.Y. TIMES DEALBOOK (July 14, 2011, 11:06 AM), <http://dealbook.nytimes.com/2011/07/14/wall-street-lobbyists-try-to-reform-the-reform/?ref=business> (profiling the work of a leading industry lobbyist in altering proposed rules for the financial industry).

liquidity and the ability to reliably price the instrument—both of which come down to, essentially, the standardization of a particular instrument.¹⁸⁷ Dealers with an interest in keeping their trades on the bilateral market may therefore engage in faux customization and seek to use their leverage over clearinghouse governance to induce clearinghouses to accept their characterization of an instrument that is, in fact, fairly standardized as, instead, highly customized and therefore not eligible for clearing. Regulators may (or may not) see through such attempts at faux customization, but one should remember that, in the first instance, determinations concerning clearing eligibility are likely to be made by the clearinghouse, which may be subject to dealer influence. Moreover, regulators may be hesitant to disturb clearinghouse determinations concerning clearing eligibility, considering the fine line between mitigating systemic risk by bringing in as many appropriate instruments as possible and potentially increasing systemic risk by imposing clearing on illiquid or difficult-to-price instruments.¹⁸⁸ Dealers may be able to take advantage of this deference to keep trades off of clearinghouses that should in fact be cleared.

A significant dealer role in clearinghouse governance is therefore problematic because dealers have a clear incentive to protect the profits they receive from the bilateral market—what I have called the qualitative dimension—by keeping trades off of clearinghouses. Keeping trades off of clearinghouses has obvious systemic risk implications: a clearinghouse cannot contain the risk of trades that it does not clear. In this way, a significant dealer role in clearinghouse governance raises systemic risk concerns.

The major dealers may also use their influence over clearinghouses to protect the quantitative dimension of trading profits, using the clearinghouse as a means of increasing their market share and excluding competitors. The clearinghouse offers two bases for exclusion: capital requirements or sophistication standards.¹⁸⁹ Major dealers may use their influence on clearinghouses to cause margin collateral (or guaranty fund contributions) to be set at an excessively high level in an effort to limit membership to none but the largest financial institutions, thereby preventing smaller dealers and large end users from obtaining direct access to clearing and thereby preserving (or even strengthening) their stranglehold on trading volume. Alternately, large dealers might influence the clearinghouses into adopting sophistication

¹⁸⁷ See *supra* Part I.C.4.

¹⁸⁸ See *supra* Part I.C.4.

¹⁸⁹ See 17 C.F.R. §§ 39.10–.13 (2011).

standards that limit membership to those dealers handling a high volume of derivatives trading as a means of excluding small dealers and end users. This may be an even more attractive means of controlling entry because it does not require the large dealers to commit large reserves of their own capital merely to keep less financially strong parties away. Rather, they can define the requisite volume requirements in such a way that only the largest dealers will be eligible to become members, confident that, once these sophistication standards are in place, smaller dealers, without the ability to clear trades directly, will never be able to meet them.

As discussed in Part I.C.2, above, several proposed rules speak to some of these tactics, setting maximum-capital requirements and barring the use of volume and other sophistication standards as a means of limiting access to clearing. However, these rules clearly do not address every such means of excluding new entrants. For example, although the rules impose a maximum-capital requirement, they do permit clearinghouses to scale membership based on risk.¹⁹⁰ Moreover, although the rules bar sophistication as the sole basis for rejecting an applicant, they continue to allow it to be used as one of several factors in a determination to exclude.¹⁹¹ Thus, in spite of these efforts, ample discretion remains for major dealers to use the clearinghouse platform to exclude competitors.

The major dealers have been charged with similar sharp tactics in the past. For example, in the fall of 2008, the hedge fund Citadel entered into a partnership with Chicago Mercantile Exchange (CME), a leading commodities exchange, to develop a clearinghouse and electronic-trading facility for credit default swaps.¹⁹² Around the same time, the major dealers entered into an arrangement with Intercontinental Exchange (ICE), one of CME's key competitors then also in the early stages of establishing a clearinghouse for credit default swaps.¹⁹³ Once the major dealers became a part of the ICE

¹⁹⁰ See *id.* § 39.12(a)(2)(ii).

¹⁹¹ See *id.* § 39.12(a).

¹⁹² Serena Ng & Gregory Zuckerman, *Crisis on Wall Street*, WALL ST. J., Oct. 7, 2008, at C2. End users, such as hedge funds, that frequently transact in derivative instruments will have strong incentives to reduce trading costs. See *infra* Part II.B. Their incentive, thus, will be to minimize dealer spreads, which pits them directly against dealers' interests.

¹⁹³ Louise Story, *House Advantage*, N.Y. TIMES, Dec. 12, 2010, at A1 (describing an arrangement under which the major dealers were entitled to a share of profits from clearing as well as influence over the governance structure of the clearinghouse). The history of ICE is also instructive. The major dealers, along with several major energy companies, had started ICE in 2000 as a platform to trade energy derivatives. *Id.* When ICE went public in 2005, the dealers cashed out much of their stake. *Id.* That they were able to exert so much influence over ICE's efforts to clear credit default swaps three years *after* they had cashed out their

clearinghouse, they began to clear their trades exclusively through it, with the effect, due to their control over trading volume, that the ICE clearinghouse had trades to clear, and the CME clearinghouse had none.¹⁹⁴ In this competitive environment, CME's relationship with Citadel soon ended, and CME brought the dealers aboard on similarly preferential terms.¹⁹⁵ Indeed, stories of dealer willingness to use their leverage over trading volume to extract significant commercial concessions abound. For example, in 2008, dealers allegedly won significant concessions from the London Stock Exchange by threatening to direct orders to their own exchange, Turquoise, instead.¹⁹⁶ Likewise, Dealerweb, a dealer-backed bond-trading system, immediately captured 85% of the market for mortgage-bond trading within two months of its creation simply because the dealers directed their trading volume to it rather than to the competing platform.¹⁹⁷

Perhaps most instructive, however, are the governance arrangements that the major dealers won from the ICE clearinghouse in late 2008, including extremely high capital requirements with the effect of excluding all but the largest dealers from direct access to clearing. These requirements were used to deny membership to the Bank of New York and to State Street Corporation, as well as a number of smaller brokerage firms,¹⁹⁸ decisions that generated sufficient controversy to induce a Bank of New York executive to comment in the *New York Times*, “‘We are not a nobody’ . . . ‘But we don’t qualify. We

ownership stake illustrates that the major dealers do not need ownership or voting stakes to effectively control market infrastructure for derivatives.

¹⁹⁴ *Id.* According to the same press accounts, the dealers also used their leverage with Markit, which is an infrastructure provider that reports derivatives trading data and therefore is wholly reliant upon the information provided by the dealers, to refuse to provide market data to the CME clearinghouse unless a leading dealer was made a party to every trade. *See id.* (“Markit put . . . [the CME clearinghouse] in a tough spot by basically insisting that every trade involve at least one bank, since the banks are the main parties that have licenses with Markit.”).

¹⁹⁵ *Id.* The dealers allegedly extracted governance concessions from CME similar to those they had won from ICE. *Id.*

¹⁹⁶ *See* Monahan Comment Letter, *supra* note 169, at 6 (describing the transaction). The London Stock Exchange subsequently removed the nascent competitor by acquiring a 60% stake and merging the platform with subsidiary Baikal. Press Release, London Stock Exch., London Stock Exchange Group and Global Investment Banks to Partner in Pan-European Trading Venture (Dec. 21, 2009), *available at* <http://www.londonstockexchange.com/about-the-exchange/media-relations/press-releases/2009/londonstockexchangeandglobalinvestmentbankstopartnerinpaneuropeantradingventure.htm>.

¹⁹⁷ Matthew Leising & Jody Shenn, *ICAP Loses 85% of Mortgage Bond Trading to Dealerweb*, BLOOMBERG (Apr. 21, 2009, 5:29 PM), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aCxaCOeOAPBE>.

¹⁹⁸ *See* Story, *supra* note 193.

certainly think that's kind of crazy.”¹⁹⁹ Likewise, an executive at a brokerage firm commented, “It appears that the membership criteria were set so that a certain group of market participants could meet that, and everyone else would have to jump through hoops.”²⁰⁰ Similar allegations have surfaced surrounding LCH.Clearnet, a dealer-owned, European clearinghouse specializing primarily in interest rate swaps that requires a \$1 trillion swap portfolio as a prerequisite to admission as a member.²⁰¹ How one new entrant could acquire a \$1 trillion swap portfolio without access to clearing is, of course, a good question and, perhaps, precisely the point of the admission requirement.

None of this makes the major dealers look particularly good. However, it is not immediately clear what impact any of it has on systemic risk. Indeed, such allegations have the character of a trade dispute—when a pie is about to be divided, the hungry take out their knives. If our concern is principally systemic risk, then why not leave antitrust law to police the niceties of market power and appropriately competitive behavior?²⁰² However, if the major dealers are able largely to exclude smaller dealers from direct access to clearing, requiring smaller dealers effectively to place their trades through larger dealers and thereby increasing their costs, then smaller dealers might have the same incentive as large dealers, described above, to avoid clearing and seek higher-margin trading activity through faux customization. On balance, therefore, it would seem to make sense to give as many parties direct access to clearing as possible, including both large and small dealers as well as significant end users, provided that all of these parties can meet appropriate reserve requirements. What appropriate reserves are in this context is, of course, a

¹⁹⁹ *Id.* (quoting Sanjay Kannambadi, CEO, BNY Mellon Clearing). Another possibility, however, is that ICE viewed BNY, which may then have been considering launching its own clearing unit, as a prospective competitor in clearing and therefore sought to exclude it for those reasons. See Jacob Bunge, *BNY Mellon Launches New Derivative Clearing Unit*, WALL ST. J. MARKETWATCH (June 22, 2010, 9:37 AM), <http://www.marketwatch.com/story/bny-mellon-launches-new-derivative-clearing-unit-2010-06-22> (reporting on the launch of a derivatives clearing unit by BNY Mellon).

²⁰⁰ Story, *supra* note 193 (quoting Marcus Katz, Senior Vice President, Newedge) (internal quotation marks omitted).

²⁰¹ LCH.CLEARNET LTD., CLEARING HOUSE PROCEDURES 6 (2012), available at http://www.lchclearnet.com/Images/Section%201_tcm6-57514.pdf.

²⁰² See generally Letter from Christine A. Varney, Assistant Att’y Gen., U.S. Dep’t of Justice Antitrust Div. et al., to the U.S. Commodity Futures Trading Comm’n (Dec. 28, 2011), available at <http://comments.cftc.gov/PublicComments/ViewComment.aspx?id=26809> (follow “26809ChristineVarney.pdf” hyperlink) (urging the implementation of more stringent rules regarding ownership, conflicts of interest, and independent directors for designated contract markets, DCOs, and swap execution facilities out of concern that such entities may be able to use their control over trading platforms to limit competition).

question of clearinghouse governance that is perhaps not wise to leave in the hands of the major dealers.

Still another objection that might be raised to the account up to this point is that, even accepting that the major dealers are not perfect and may suffer from the temptation to engage in anticompetitive conduct, they nevertheless have better incentives to manage systemic risk than any other interested party because they are in a position to bear the greatest share of losses from counterparty credit risk. The waterfall of losses inside the clearinghouse hits them first, and the failure of the clearinghouse to contain counterparty credit risk is a threat, primarily, to those dealers that most often transact through it. We ought, therefore, to trust in major dealers' self-interest to protect both these resources and their solvency generally in granting them a leading role in clearinghouse governance.

Nevertheless, drawing upon such familiar incentive problems as moral hazard²⁰³ and agency costs,²⁰⁴ as well as several well-documented cognitive biases, several strong reasons emerge for not simply entrusting dealers with the responsibility for managing systemic risk. First, and perhaps most obviously, dealers are likely to understand that, regardless of what politicians might say to the contrary, the federal government will not be able to keep itself from bailing out a failing clearinghouse.²⁰⁵ Knowing that they are thus the implicit beneficiaries of a federal guarantee, dealers may seek to impose excess risk on the clearinghouse in order to reap the benefits of higher fees through trading

²⁰³ See Y. Kotowitz, *Moral Hazard*, NEW PALGRAVE DICTIONARY ECON. ONLINE, http://www.dictionarofeconomics.com.proxy.library.emory.edu/article?id=pde2008_M000259&edition=current&q=moral%20hazard&topicid=&result_number=1 (last visited Aug. 6, 2012) ("Moral hazard may be defined as actions of economic agents in maximizing their own utility to the detriment of others, in situations where they do not bear the full consequences or, equivalently, do not enjoy the full benefits of their actions due to uncertainty and incomplete information or restricted contracts which prevent the assignment of full damages (benefits) to the agent responsible." (emphases omitted)).

²⁰⁴ See Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305, 308 (1976) ("[I]t is generally impossible for the principal or the agent at zero cost to ensure that the agent will make optimal decisions from the principal's viewpoint. . . . [T]here will be some divergence between the agent's decisions and those decisions which would maximize the welfare of the principal." (footnote omitted)).

²⁰⁵ Indeed, Dodd-Frank evinces a federal commitment to bail out clearinghouses. The so-called Pushout Rule in Dodd-Frank's § 716 that prohibits "[f]ederal assistance . . . to any swaps entity with respect to any swap, security-based swap, or other activity," Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 716(a), 124 Stat. 1376, 1648 (2010) (codified at 15 U.S.C. § 8305(a) (Supp. IV 2010)), does not include clearinghouses, *id.* § 716(d)(3), 124 Stat. at 1649. Moreover, § 806 authorizes the Federal Reserve to assist clearinghouses under "exigent circumstances." *Id.* § 806(b), 124 Stat. at 1811.

volume.²⁰⁶ This is textbook moral hazard—essentially, playing with house money—and it has the predictable effect of inducing dealers to take excessive risk through the clearinghouse.

Second, it is important to remember that dealers are not cohesive, monolithic entities but are far-flung institutions suffering from agency costs in the same way as any other large business. Agency costs harm organizations as a result of the disconnect between the incentives of the actors and interests of those for whom they are acting.²⁰⁷ In this case, the trading activity of major dealers is likely to be undertaken by a relatively small group of individuals who, because they have a history of producing large profits for the institution, are likely to be well-regarded and highly compensated.²⁰⁸ In fact, these traders are customarily paid through incentive compensation arrangements that award them for their productivity—the more trading profits they generate, the more highly they are paid.²⁰⁹ It does not take much effort to see that these traders may not have the same incentives as the organization as a whole because they may be able to maximize their personal compensation by taking on excessive trading risk that will be borne by the institution, not themselves personally. This dynamic is well illustrated by the many stories involving rogue traders at derivative desks in particular.²¹⁰

Dealers, of course, well understand this threat and have strong incentives to design controls to minimize it. Their ability to do so, however, may be constrained by a handful of well-documented behavioral biases that cause them predictably to underestimate the risk the institution bears as a result of trading activity. One set of biases suggests that individuals and institutions will systematically underestimate the likelihood of low-probability, high-impact events because of a tendency to focus only on risks that rise above an often-

²⁰⁶ See Better Markets Comment Letter, *supra* note 170, at 9 (“It is predictable that, in an asymmetrical and anti-competitive market, an oligopoly of banks will take on excessive market price risk . . .”).

²⁰⁷ See Jensen & Meckling, *supra* note 204.

²⁰⁸ See, e.g., GILLIAN TETT, FOOL’S GOLD 3–22, 41–56 (2009) (describing the importance of derivatives traders to banks).

²⁰⁹ Bonus compensation schemes provide traders with little or no incentive to lower risks, instead creating heavy inducements for increased risks. See KOLB & OVERDAHL, *supra* note 13, at 319–25 (describing trader incentive compensation plans and highlighting various financial disasters, such as at Barings and SocGen, caused by traders).

²¹⁰ See, e.g., David Gauthier-Villars, *Rogue French Trader Sentenced to 3 Years*, WALL ST. J., Oct. 6, 2010, at C1 (describing the sentencing of low-level trader Jerome Kerviel for hiding risky trading, at one time making an unauthorized bet of 50 billion euro); Jeremy Grant, *Conduits of Contention*, FIN. TIMES (London), June 16, 2011, at 9 (discussing the systemic importance of rogue traders, such as Singapore-based Nick Leeson, who triggered the collapse of the U.K.’s Barings Bank in 1995).

informal, experientially determined threshold.²¹¹ These suggest that dealers may often fail to appreciate the risks that their traders are taking in driving up profits. Similarly, recent accounts of major institutions' failures to account for "tail risk" leading up to the most severe financial crisis have emphasized overoptimism and a similar tournament atmosphere where market-topping performance is valued more highly than conservative risk selection.²¹² Another candidate for the systematic underestimation of risk in this context is the "expert effect," where higher level managers, several steps removed from the mathematical complexities of trading models, may be overly deferential to the financial expertise of star traders and their teams.²¹³ These behavioral biases further suggest that the agency costs of major dealers are at the very least highly difficult to resolve, suggesting that incentives favoring excessive risk taking will persist.

Third, and quite apart from accounts suggesting that excessive risk taking is in fact a mistake that dealers would like but are somehow unable to avoid, there is the possibility that dealers in fact act in their shareholders' interests by taking on excessive risk, which, in the new regulatory environment, they will impose on clearinghouses. In an insightful theoretical account that he refers to as "correlation-seeking," Professor Squire suggests that managers may in fact seek to correlate their firm's contingent debt obligations with insolvency risk.²¹⁴ By correlating contingent obligations to insolvency, a firm gets all of

²¹¹ See Henry T.C. Hu, *Misunderstood Derivatives: The Causes of Informational Failure and the Promise of Regulatory Incrementalism*, 102 YALE L.J. 1457, 1488 (1993) (review essay) (describing the role of "threshold effects" in derivative regulation). For more on the cognitive science underlying threshold effects, see John C. Hershey et al., *Sources of Bias in Assessment Procedures for Utility Functions*, in DECISION MAKING: DESCRIPTIVE, NORMATIVE, AND PRESCRIPTIVE INTERACTIONS 422, 428 (David E. Bell et al. eds., 1988); Howard Kunreuther, *The Economics of Protection Against Low Probability Events*, in DECISION MAKING: AN INTERDISCIPLINARY INQUIRY 195, 195 (Gerardo R. Ungson & Daniel N. Braunstein eds., 1982); and Paul Slovic et al., *Facts Versus Fears: Understanding Perceived Risk*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 463, 468–70 (Daniel Kahneman et al. eds., 1982).

²¹² See RAGHURAM G. RAJAN, *FAULT LINES* 136–46 (2010) (accounting for the causes and consequences of tail risk—essentially, low-probability, high-impact events occurring at the edges of a probability distribution); Donald C. Langevoort, *The Organizational Psychology of Hyper-Competition: Corporate Irresponsibility and the Lessons of Enron*, 70 GEO. WASH. L. REV. 968, 973–74 (2002) (discussing tournament incentives and their impact on managers).

²¹³ See Hu, *supra* note 211, at 1491 (discussing the expert effect as applied to derivatives trading). The example of Long-Term Capital Management is also apt here. See LOWENSTEIN, *supra* note 127, at 58 (describing the demise of Long-Term Capital Management and the willingness of partners to defer monitoring of traders).

²¹⁴ See Squire, *supra* note 72, at 1153 ("[It] creates an incentive for a firm's managers to sell contingent claims against their firm that correlate—or that through asset purchases can be made to correlate—with the firm's insolvency risk.").

the upside of the contingent debt—fee income from undertaking the obligation—and none of the downside—if the triggering event should in fact occur, the firm will be insolvent and therefore excused of its obligation to pay.²¹⁵ Squire views this as a form of opportunism and suggests it may have been present among firms—especially AIG—leading to the financial crisis.²¹⁶ If dealers were to engage in correlation-seeking, they would not mistakenly underestimate risk but intentionally undertake large amounts of contingent risk correlated to other events likely to lead to their insolvency. Although such a strategy might perversely benefit a dealer’s shareholders, it would also have the clear effect of imposing excessive risk on the dealer’s contractual counterparties—in this case, the clearinghouse.

The purpose of this discussion has not been to prove that dealers will engage, for example, in correlation-seeking, but rather to demonstrate that the incentives of major dealers are sufficiently problematic not simply to entrust them with clearinghouse governance in spite of the fact that they are likely to suffer most directly in the event of clearinghouse failure. If they do not seek to keep clearable instruments off of the clearinghouse to preserve the qualitative dimension of trading profits, then they will be tempted to maximize the quantitative dimension by taking on additional risk and imposing that risk on the clearinghouse. In fact, they will very likely do both.

2. *Small Dealers*

Unlike the major dealers, small dealers do not have the trading volume to exert market power or extract concessions. Moreover, trading effectively costs small dealers more than large dealers because the various price concessions that infrastructure providers do offer to large dealers to buy volume are, in essence, subsidized by the smaller dealers who must use the same infrastructure service without pricing concessions. A similar situation is likely to develop on clearinghouses, where small dealers, if they are admitted at all, will in all likelihood be made to cross-subsidize large dealers. In this context,

²¹⁵ Essentially, correlation-seeking creates an opportunity to benefit shareholders at unsecured creditors’ expense. Corporate managers may engage in correlation-seeking, first because the law charges them with a duty to make decisions in *shareholders’* best interests, and second because their compensation plans create powerful incentives to do so. *Id.* at 1183 (“[T]he concept of correlation-seeking explains how managerial decisions that caused the firms to suffer deep losses may in fact have been consistent with the managers’ duty to maximize shareholder value.”).

²¹⁶ *Id.*

small dealers will have two clear incentives: either avoid clearing altogether or reduce the cost of the clearinghouse.

The small dealers' incentives to avoid clearing are much the same as those of large dealers. Trades that are not cleared can be executed at larger spreads. Additionally, trades that are not cleared require less use of infrastructure services and therefore lower costs from the small dealers' perspective. Small dealers may therefore seek to engage in faux customization and, if they have a voice in clearinghouse governance, to induce the clearinghouse to acquiesce.

However, small dealers are also likely to seek to clear many of their trades because first, in a world of mandatory clearing, they will have no choice and second, without access to clearing, they will face difficulties in building their book of business and will always be at the mercy of larger dealers with direct access to clearing. However, because small dealers do not have the market power to extract concessions, clearing trades will remain a significant source of cost for smaller dealers. A central concern of small dealers, therefore, will be to reduce these costs, and one obvious means of doing so is through the reduction of reserve requirements. Moreover, the interest of small dealers in driving down reserve requirements is likely to be even greater than that of large dealers if, as discussed above, the lion's share of the reserve account is effectively contributed by others—the large dealers. Small dealers in this situation will predictably take on more risk because they are effectively playing with other peoples' money—yet another manifestation of moral hazard exposing the clearinghouse to systemic risk.

Putting aside, again, the differences between large and small dealers, it is possible to view the incentive problems facing all dealer members of the clearinghouse as a variation of the traditional prisoners' dilemma game.²¹⁷ Even assuming that all dealer members would prefer *ex ante* to maximize systemic stability, each would also recognize the moral hazard created by a clearinghouse structure that allows members to enjoy all of the benefits of trading (i.e., profits) without internalizing all of the costs (because losses, in the event of default, will be borne by other clearinghouse members). Understanding this, clearinghouse members could choose either to increase the

²¹⁷ See Richard H. McAdams, *Beyond the Prisoners' Dilemma: Coordination, Game Theory, and Law*, 82 S. CAL. L. REV. 209, 211 (2009) (describing the prisoners' dilemma as the basic coordination game in legal scholarship but emphasizing that game theory has evolved several other, potentially more applicable, models of various coordination problems); Whitehead, *Destructive Coordination*, *supra* note 42, at 330–36 (applying the Stag Hunt, Dove–Hawk, and Battle of the Sexes games to illustrate various coordination problems in financial markets).

monitoring of their fellow members or to capture some of these abnormal profits themselves by likewise engaging in activities that undermine the stability of the clearinghouse. The prisoners' dilemma teaches that, without an opportunity to coordinate their activities and credibly commit to bringing about the outcome they favored *ex ante*, participants in such a game are likely to engage in *ex post* opportunism. The governance structure of the clearinghouse must ultimately respond to this incentive problem.

B. End Users

End users are dealers' customers. They are the parties who buy and sell derivatives instruments to hold the risk for some period of time, not as in the case of dealers, for immediate resale to maintain a balanced book. End users may thus be industrial corporations or financial institutions seeking to hedge various exposures—to currencies or interest rates, for example. But, in terms of trading volume, they are more likely to be hedge funds and other financial investors often seeking to speculate on a particular risk.²¹⁸

The principal exposure to risk of end users in derivatives trading is the risk of the underlying, rather than, as in the case of dealers, counterparty credit risk. To be sure, end users will not want their counterparties to default—an end user who suffers losses in the underlying asset and faces simultaneous default from the counterparty with which the end user thought it had created a hedge faces a situation similar to the double-default scenario described above.²¹⁹ In other words, while end users will be concerned about the credit quality of the counterparties to their trades—an interest they can address themselves through their contracts—they are likely to be less concerned about the systemic effects of counterparty credit risk. Moreover, the trading activity of end users engaged in hedging has much less potential to create systemic risk because their trades, driven by individual exposures to particular risks, are idiosyncratic and not interconnected.²²⁰

Even more significantly, from the perspective of clearinghouse governance, end users engaged in hedging transactions are generally exempt from

²¹⁸ See MONETARY & ECON. DEP'T, BANK FOR INT'L SETTLEMENTS, OTC DERIVATIVES MARKET ACTIVITY IN THE SECOND HALF OF 2010 (2011), available at http://www.bis.org/publ/otc_hy1105.pdf.

²¹⁹ See *supra* note 37 and accompanying text.

²²⁰ See Giglio, *supra* note 69, at 3 (finding that spikes in systemic risk were linked to idiosyncratic default risk of one or a small number of banks, not CDSs in general).

mandatory clearing.²²¹ Policy-makers' rationale for exempting end users from mandatory clearing was essentially the fear of damaging commercial firms (and thereby consumers and investors) by burdening them with additional costs associated with mandatory clearing.²²² The likely result of this exemption, of course, is that end users engaged in hedging are likely to be little more interested in clearinghouse governance than the average citizen in the street. End users whose activities do not meet the requirements for the exemption—I am speaking primarily of hedge funds and other investment vehicles that either fail to qualify as nonfinancial institutions or whose trading activities fail to qualify as commercial hedging—because they will have to clear their trades may still have an interest in how clearinghouses operate. The question remains, then: What will their interest be?

The reduction of trading costs would seem to be an interest that all end users can agree on. Moreover, they are likely to view clearinghouses as a platform for doing so. Indeed, in a comment letter on the question of clearinghouse governance, TIAA-CREF makes this point explicitly, arguing that “the primary function of the Clearinghouse is to provide fair, open and transparent access to *reasonably priced* swap contracts.”²²³ Reducing costs from the customer's perspective, of course, likely means reducing revenue—at least per-trade revenue—from the dealer's perspective.²²⁴ Insofar as this is a

²²¹ See Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 723(a)(3), 124 Stat. 1376, 1679 (2010) (codified at 7 U.S.C. § 2(h)(7) (Supp. IV 2010)) (providing exceptions to the clearing requirement for swaps); *id.* § 763(a), 124 Stat. at 1762 (providing exceptions to the clearing requirement for security-based swaps); End-User Exception to Mandatory Clearing of Swaps, 75 Fed. Reg. 80,747 (proposed Dec. 23, 2010) (to be codified at 17 C.F.R. pt. 39); End-User Exception to Mandatory Clearing of Security-Based Swaps, Exchange Act No. 63,556, 75 Fed. Reg. 79,992 (proposed Dec. 21, 2010) (to be codified at 17 C.F.R. pt. 240).

²²² According to a letter from Blanche Lincoln and Christopher Dodd addressed to Barney Frank and Collin Peterson, the principal reason for the end-user exemption was the “substantial public interest in keeping costs low [for end users] (i.e., to provide consumers with stable, low prices, promote investment, and create jobs.)” 156 CONG. REC. H5248 (daily ed. June 30, 2010) (statement of Rep. Collin Peterson). Likewise, Texas Senator Kay Hutchinson expressed the fear that, rather than hedging, end users might “choose market volatility instead of risk-controlling derivatives altogether, exposing Americans to higher prices, slower economic growth, and more job losses.” 156 CONG. REC. S5881 (daily ed. July 15, 2010) (statement of Sen. Kay Hutchinson).

²²³ See Letter from Jon Feigelson, Senior Vice President, Gen. Counsel & Head of Corporate Governance, TIAA-CREF, to Elizabeth M. Murphy, Sec'y, SEC, and David A. Stawick, Sec'y, CFTC 4 (Mar. 7, 2011) [hereinafter TIAA-CREF Comment Letter] (emphasis added), *available at* <http://www.sec.gov/comments/s7-27-10/s72710-110.pdf>.

²²⁴ This need not necessarily be the case if significant cost savings are also achieved. See *supra* note 185 and accompanying text.

zero-sum game, the more success end users have in reducing fees, the greater the dealers' need will be to seek revenue elsewhere.

Dealers may seek to make up this lost revenue either by increasing volume, thereby pushing more and potentially inappropriate products across the clearing platform, or by innovating new products that are sufficiently customized to trade bilaterally where spreads are higher. As noted above, either one of these responses creates systemic risk. In this way, although it is true that end users, unlike dealers, do not have a direct interest that will result in increasing systemic risk, success in attaining their principal interest may indirectly spur dealers to do so.²²⁵

C. Clearinghouse Shareholders

The only other interest so far left out of this discussion of clearinghouse governance is that of investors in the clearinghouse other than dealers and end users. The reason for this is simple: There aren't likely to be any.

Dealers provide first-loss capital to clearinghouses through their contributions to margin accounts and guaranty funds, for which they are certain to demand a return.²²⁶ They may seek to extract rewards as equity holders—by providing some amount of equity capital in addition to their contributions to various clearinghouse reserves—or they may just as easily contract for a share of clearinghouse returns through price concessions and profit-sharing agreements. Both of these arrangements are common.²²⁷ But either method of allocating clearinghouse revenue to dealer interests, of course, has the effect of reducing the amount of such revenue available to other investors. Worse, these investors will not be able to free themselves of dealer influence because dealers' control over trading volume—an absolute necessity for any clearinghouse because order flow not only generates fees but also provides the liquidity necessary to attract other traders—can effectively be used as a weapon to destroy a noncompliant clearinghouse.²²⁸ Additionally, dealers are a vital source of expertise in clearinghouse management.

²²⁵ See TIAA-CREF Comment Letter, *supra* note 223, at 5 (“[C]ustomers will not be bound by the same profit motives as owner and clearing member constituencies, and will serve as a counterweight against efforts either to open the Clearinghouse to products that may introduce unnecessary risks or strategies not currently sought by market participants . . .”).

²²⁶ See *supra* Part I.C.3.

²²⁷ See *supra* Part II.A.

²²⁸ For a discussion of the self-perpetuating cycle between trading volume, liquidity, and clearinghouses, see *supra* Part II.A.

Clearinghouses with significant links to the dealer community, either through equity participation or contractual arrangement, may be able to call upon this expertise at low or no cost, while clearinghouses seeking independence from dealers will be forced to hire this expertise at significant cost.²²⁹ All of this suggests that much of the revenue generated from clearinghouses will, in one way or another, be captured by dealers, which in turn suggests that clearinghouses will be at a disadvantage in seeking equity capital from other sources.²³⁰

If, contrary to the foregoing analysis, a class of nondealer clearinghouse shareholders should arise, this class would not necessarily have optimal incentives to manage systemic risk. This is so, again, because dealers bear, by far, the greatest amount of risk in clearinghouses. Only after the dealer-funded reserve accounts are exhausted do the equity holders suffer.²³¹ This arrangement creates a strong incentive on the part of nondealer equity holders to impose excessive risk on the clearinghouse because, as owners, they would enjoy the full upside (in the form of additional clearing fees) of this risk and only a fraction of the downside (because dealers, through their reserve contributions, are in the first-loss position). This, once again, is moral hazard, and it leads to increased systemic risk, this time as a result of the fact that nondealer shareholders would not sufficiently internalize the risk of clearinghouse losses. Worse, nondealer shareholders and the managers that serve them may also be tempted to engage in correlation-seeking, which has the effect of increasing the risk of the clearinghouse and thereby increasing systemic risk.²³²

²²⁹ See Damgard Comment Letter, *supra* note 181, at 7 (arguing that dealers have expertise to contribute to the running of clearinghouses that nondealers would have to hire, therefore causing nondealer-owned clearinghouses to run at greater cost).

²³⁰ See Letter from Kenneth E. Bentsen, Jr., Exec. Vice President, Pub. Policy & Advocacy, SIFMA, to David A. Stawick, Sec'y, CFTC, and Elizabeth M. Murphy, Sec'y, SEC 5 (Nov. 12, 2010), available at <http://www.sec.gov/comments/s7-27-10/s72710-21.pdf> ("Swap dealers, in particular, are among the most likely equity investors in new DCOs and Clearing Agencies.").

²³¹ See 23 BROKER-DEALER OPERATIONS UNDER SECURITIES AND COMMODITIES LAW, *supra* note 87, § 5:5.

²³² See *supra* notes 214–16 and accompanying text (discussing correlation-seeking).

D. Commercial Incentives and the Public Good of Protection from Systemic Risk

Another way of analyzing the foregoing incentive issues is to view protection from systemic risk as a public good.²³³ We all would suffer if the systemic risk inherent in derivatives transactions broke the confines of the clearinghouse—either because of the havoc such an outbreak would wreak upon the financial system or because of our status as the ultimate payers in a taxpayer-funded bailout aimed at keeping the clearinghouse afloat. The parties with commercial interests in derivatives trading—dealers and end users—would suffer, too. But because some of their suffering would be borne by the rest of us (and because they stand to benefit by undertaking some forms of risk), they are not induced to internalize the entire burden of controlling systemic risk. The management of systemic risk thus has the character of a public good, the basic consequence of which, economic theory teaches, is a pervasive free-rider problem.²³⁴

Seeing the containment of systemic risk as a public good changes one's perspective on clearinghouse governance. Because no private party can enjoy the full benefit of eliminating systemic risk, no private party has an incentive to fully internalize the cost of doing so. As a result, no private party can simply be entrusted with the means of doing so because it is more likely to use those means to some other ends, described above. In other words, none of the commercial parties has the right incentives. Rather, each will choose, on the margin, to increase systemic risk by keeping standardized trades off of the clearinghouse, suppressing margin and reserve requirements, or seeking to clear inappropriate instruments through the clearinghouse.

²³³ A leading economist working in this area comes to a similar conclusion. See Craig Pirrong, *The Clearinghouse Cure*, REG., Winter 2008–2009, at 44, 48 (“There is thus a public goods problem that weakens the CCP’s incentive to create a good model [for evaluating risk].”); Pirrong, *supra* note 84, at 3 (“Risk sharing through a clearinghouse makes the balance sheets of the clearinghouse members public goods, and encourages excessive risk taking. That is, the clearing mechanism is vulnerable to moral hazard.”).

²³⁴ Public goods are goods that are either nonexcludable (i.e., nonpayors cannot be denied access), nonrival (i.e., one person’s consumption does not diminish the amount of the good available for others), or both. See Tyler Cowen, *Introduction to PUBLIC GOODS & MARKET FAILURES: A CRITICAL EXAMINATION* 1, 3–4 (Tyler Cowen ed., Transaction Publishers 1999) (1988). Paradigmatic examples are lighthouses and national defense. See R.H. Coase, *The Lighthouse in Economics*, 17 J.L. & ECON. 357, 358 (1974).

III. RULE-MAKING ADDRESSING THE INCENTIVE PROBLEMS

In enacting legislation to address the problem of systemic risk following the financial crisis, Congress showed some level of awareness of the incentive problems in the trading of derivatives and ultimately adopted specific provisions in the Dodd–Frank Act to address the problem.²³⁵ Speaking from the floor of the House, Representative Stephen Lynch characterized the problem as follows:

Mr. Chairman, I want to call your attention to sections 726 and 765 of the bill. These two provisions require the CFTC and the SEC to conduct rulemakings to eliminate the conflicts of interest arising from the control of clearing and trading facilities by entities such as swap dealers and major swap participants.

This problem arises because, right now, 95 percent of all the clearinghouses in this country are owned by just five banks. So, while we are relying on the clearinghouses to reduce systemic risk, we have the banks now owning the clearinghouses.²³⁶

The solution that Representative Lynch had originally drafted to address the conflicts he foresaw—the so-called Lynch Amendment—would have limited the major dealers’ voting interests in swap clearinghouses to 20% and would have prevented the majority of the members of clearinghouse boards from being drawn from major dealers.²³⁷ The Lynch Amendment, however, failed to win sufficient support to be included in the final bill.²³⁸ Representative Lynch therefore settled for what ultimately became sections 726 and 765 of the Dodd–Frank Act.

Sections 726²³⁹ and 765²⁴⁰ of Dodd–Frank direct the CFTC and the SEC, respectively, to review the conflict of interest problems affecting clearinghouse governance and, if they deem it necessary and appropriate, to adopt rules

²³⁵ Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, secs. 726, 765, 124 Stat. 1376, 1695–96, 1796–97 (2010) (codified at 15 U.S.C. §§ 8323, 8343 (Supp. VI 2010)) (sections directed to rulemaking on conflicts of interest).

²³⁶ 156 CONG. REC. H5217 (daily ed. June 30, 2010) (statement of Rep. Lynch).

²³⁷ See H.R. REP. NO. 111-370, at 188–92 (2009); 155 CONG. REC. H14,710–12 (daily ed. Dec. 10, 2009) (reprinting the proffered amendment and floor debate). In the sections that follow, this Article generally uses the term *incentive problem* to refer to what Representative Lynch and Congress referred to as conflicts of interest.

²³⁸ See Sarah N. Lynch, *Rep. Frank Plans Two Key Changes to Derivatives Bill*, WALL ST. J. (Nov. 4, 2009, 2:52 PM), <http://online.wsj.com/article/SB125735995425928573.html>.

²³⁹ Dodd–Frank Wall Street Reform and Consumer Protection Act § 726(b), 124 Stat. at 1695.

²⁴⁰ *Id.* § 765(b), 124 Stat. at 1797. For language focusing on the source of the conflict of interest in equity ownership and voting power, see *id.* §§ 726(c), 765(c), 124 Stat. at 1695–96, 1797.

aimed at improving governance, mitigating systemic risk, promoting competition, and mitigating conflict of interest arising from equity ownership or voting power. Although the statute can be read to encourage the agencies to adopt rules addressing these issues, it no more than suggests voting limits as a means of doing so. The agencies are directed to “adopt rules which *may* include numerical limits on the control of, or the voting rights with respect to” clearinghouse governance.²⁴¹ The discretionary nature of voting or ownership rules suggested by this language again reflects the failure of the Lynch Amendment to win support in the final bill. Undeterred, Representative Lynch urged his colleagues in the house to “agree [with] my reading . . . [that] sections 726 and 765 affirmatively require these agencies to adopt strong conflict of interest rules on control and governance of clearing and trading facilities.”²⁴²

Dodd–Frank further directs clearinghouses to adopt governance arrangements that “fulfill public interest requirements” and “permit the consideration of the views of owners and participants” and ensure that the governing boards of clearinghouses include market participants.²⁴³ The Act also requires clearinghouses to adopt fitness standards for directors, members, and clearing affiliates.²⁴⁴ The detail work in turning these concepts into rules, of course, was left to the regulatory agencies, here, principally, the SEC and the CFTC, and the efforts of each are described below.

A. *The Regulators’ Proposed Rules for Clearinghouse Governance*

Starting from the statutory mandate, the regulatory agencies acknowledged the presence of incentive problems on the part of the various commercial parties that might lead to a reduction in clearinghouse access, on the one hand, or to a failure to manage and contain systemic risk, on the other. Noting the potential for conflict between these goals, the regulatory agencies sought to design governance structures that would respond to each problem.²⁴⁵ The

²⁴¹ *Id.* secs. 726(a), 765(a), 124 Stat. at 1695, 1796–97 (emphasis added). Here and elsewhere in Dodd–Frank, Congress targets a list of enumerated entities for special attention, including large bank holding companies and their affiliates, as well as swap dealers, major swap participants, and associated persons, a focus that is picked up by the CFTC in its rule-making, described below.

²⁴² 156 CONG. REC. H5217 (daily ed. June 30, 2010) (statement of Rep. Lynch).

²⁴³ Dodd–Frank Wall Street Reform and Consumer Protection Act sec. 725(c), § 5b(c), 124 Stat. at 1692.

²⁴⁴ *Id.*

²⁴⁵ *See, e.g.*, Risk Management Requirements for Derivatives Clearing Organizations, 76 Fed. Reg. 3698, 3701 (proposed Jan. 20, 2011) (to be codified at 17 C.F.R. pt. 39) (recognizing the “potential for tension between these goals” but asserting a belief that “they can be harmonized”); Proposed SEC Rule Regarding

governance structures they propose have two basic foci: voting power and governance. The voting-power rules impose a set of caps on clearinghouse members' voting interests,²⁴⁶ and the governance rules focus on the independence of the clearinghouse board of directors and the composition of certain board committees.

Both agencies propose to give clearinghouses a choice between two sets of voting-power rules, with each rule set offering a tradeoff between individual and aggregate voting power.²⁴⁷ There is, however, a subtle but important difference in the voting power that each agency seeks to cap. The SEC's proposed voting caps are aimed at *member* voting interests only—any clearinghouse member or affiliate, whether it is a large or small dealer, end user, or any other entity.²⁴⁸ The CFTC's proposals, by contrast, also target specific enumerated entities, including bank holding companies and their affiliates, as well as swap dealers, major swap participants, and associated persons.²⁴⁹ So although each agency proposes similar caps—individual caps of either 5% or 20%, and a potential 40% aggregate entity cap²⁵⁰—the SEC applies these caps to all clearinghouse members, while the CFTC takes special aim at the enumerated entities and grants greater leeway to other members.

A further complication of the voting-power rules is that they are written in the alternative. A clearinghouse therefore is given a choice between a relatively low individual voting cap in exchange for no aggregate entity cap on the one hand and a higher individual voting cap with an additional aggregate voting cap on the other hand. Under the first alternative, the voting interest of

Ownership and Governance, *supra* note 113, at 65,886 (“[A]ffording greater access to the clearing agency at some point may come at the expense of sound risk management practices.”).

²⁴⁶ Members of a clearinghouse are likely to consist largely of dealers because these are the parties most likely to be able to meet admissions criteria.

²⁴⁷ See Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, 65,893 (SEC proposal for alternative voting rules); Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. 63,743–44 (proposed Oct. 18, 2010) (to be codified at 17 C.F.R. pts. 1, 37, 38, 39, 40) (CFTC proposal for alternative voting rules).

²⁴⁸ See Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,894–95 (discussing the application of the rules to “related persons”).

²⁴⁹ These enumerated entities include (i) bank holding companies with over \$50 billion in total consolidated assets; (ii) a “nonbank financial company . . . supervised by the Board of Governors of the Federal Reserve System”; (iii) an affiliate of (i) or (ii); (iv) a swap dealer; (v) a major swap participant; or (vi) an associated person of (iv) or (v). Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,750.

²⁵⁰ See *id.* at 63,733–34.

an individual member (under the SEC proposal)²⁵¹ or an enumerated entity (under the CFTC proposal)²⁵² would be capped at 5%, and no limit would be placed on members' or enumerated entities' voting power in the aggregate. Under the second alternative, the voting interest of any member (under both the SEC and CFTC proposals) would be capped at 20%²⁵³ while members (under the SEC rule)²⁵⁴ or enumerated entities (under the CFTC rule)²⁵⁵ would have their aggregate voting interests capped at 40%.²⁵⁶ The tradeoff facing clearinghouses is thus whether to accept low individual limits in exchange for no aggregate limits on the regulated class or to accept higher individual limits along with an aggregate limit for the regulated class.

The agencies also part ways slightly on the relationship between the governance rules and the voting-power rules. The CFTC prescribes a single set of governance rules,²⁵⁷ while the SEC offers two alternatives tied to the clearinghouse's choice of voting-power rules.²⁵⁸ In either case, the governance rules focus on the independence of the clearinghouses' directors and the composition of certain board committees. Under the CFTC's proposed governance rules, clearinghouse boards must consist of at least 35% independent directors, with a minimum of two such directors.²⁵⁹ To prevent boards from circumventing the independence rules by delegating authority to committees, any committee with authority to act as the board must meet the same independence requirements as the board as a whole.²⁶⁰ In addition, two board committees are mandated under the CFTC's proposed rules: a

²⁵¹ Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,900.

²⁵² Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,743–44.

²⁵³ *Id.* at 63,733; Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,895.

²⁵⁴ Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,895.

²⁵⁵ Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,733.

²⁵⁶ Members' affiliates and related persons are counted together under each rule. *See* Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,894; Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,743.

²⁵⁷ Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,737–38.

²⁵⁸ Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,893–94.

²⁵⁹ Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,738. CFTC "public directors" are functionally equivalent to the SEC-termed independent directors because the proposed rules include a definition of *public directors* that serves to bring the CFTC definition in line with the SEC's currently accepted practices. *Id.* at 63,742.

²⁶⁰ *Id.* at 63,738.

nominating committee and a risk management committee.²⁶¹ The nominating committee—whose role, as in a public corporation, is to nominate directors to the board—must have a majority of independent directors and must have an independent director chair.²⁶² The risk management committee, meanwhile, is given responsibility for advising on risk modeling and default procedures, determining eligibility for membership, approving or denying application for membership, and determining which derivatives are eligible for clearing.²⁶³ Like the board as a whole, the risk management committee must consist of 35% independent directors, but, interestingly, 10% of its members must represent customers.²⁶⁴ The rules also specify that the CFTC must be notified any time a recommendation of the risk management committee is not followed by the board.²⁶⁵ Finally, the CFTC’s proposed rules would require that any disciplinary panel convened by a clearinghouse include at least one independent person—a person, whether a member of the board, meeting the board test for independence—as well as an independent chair.²⁶⁶ According to the CFTC’s proposal, this set of governance rules applies regardless of which voting-power alternative a clearinghouse selects.²⁶⁷

The SEC, by contrast, offers two sets of proposed governance rules depending upon the clearinghouse’s choice of voting-power rules.²⁶⁸ If, on the one hand, the clearinghouse chooses the higher individual voting cap (and therefore the 40% aggregate-member voting limit), then the concomitant governance rules essentially parallel the CFTC’s rules.²⁶⁹ Under this alternative, the board must consist of at least 35% independent directors, as

²⁶¹ *Id.* at 63,733.

²⁶² *Id.* at 63,740.

²⁶³ *Id.* at 63,749.

²⁶⁴ *Id.* at 63,740. If the risk management committee delegates authority to a subcommittee meeting these composition requirements, then the risk management committee need not meet these requirements. *Id.* at 63,740–41.

²⁶⁵ *See id.* at 63,741 n.65 (“The Commission is contemplating requiring the DCO to report to the Commission . . . whenever the Board of Directors overrules the Risk Management Committee.”).

²⁶⁶ *Id.* at 63,740.

²⁶⁷ *See id.* at 63,737 (noting that the Commission’s proposed rules impose structural governance requirements and regulate the exercise of voting power to accomplish two different goals, and affirming the Commission’s belief that stricter governance requirements do not necessarily justify more lenient limits on the exercise of voting power).

²⁶⁸ *See Proposed SEC Rule Regarding Ownership and Governance, supra* note 113, at 65,893.

²⁶⁹ *Compare id.* at 65,896–98 (summarizing governance requirements under the Voting Interest Focus Initiative), *with* Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. at 63,738–41 (summarizing governance requirements for DCOs).

must any committee empowered to act on behalf of the board.²⁷⁰ The nominating committee must consist of a majority of independent directors, and any disciplinary panel must include at least one person who would qualify as independent.²⁷¹ If, on the other hand, the clearinghouse chooses the lower individual voting cap (and thus no limit on member voting power in the aggregate), then the corresponding governance rules differ somewhat. Rather than meeting the 35% board-independence standard, clearinghouse boards (and any subcommittees acting for the board) must have a majority of independent members.²⁷² Moreover, nominating committees must be wholly (as opposed to majority) independent, and as above, any disciplinary panel must have at least one person qualifying as independent.²⁷³ Finally, unlike the CFTC, the SEC does not expressly mandate a risk management committee, but the composition of such a committee, if formed, must be either 35% or majority independent, depending upon which alternative rule structure the clearinghouse chooses.²⁷⁴

The various rule choices are summarized in the table below:

	CFTC Clearinghouse Governance Rules	SEC Clearinghouse Governance Rules
Enumerated Entity/Member Voting Cap	20% per member, 40% aggregate enumerated entities.	A: 20% per member, 40% aggregate members.
	5% per enumerated entity, no aggregate.	B: 5% per member, no aggregate.
Board Independence	35%, minimum of 2.	A: 35%.
		B: majority.
Nominating Committee Independence	Majority, plus chair.	A: majority.
		B: wholly.
Disciplinary Panel Independence	1, plus chair.	1.
Risk Management Committee Independence	35%, plus 10% customers.	If adopted, then: A: majority, or B: wholly.

²⁷⁰ Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,896–97.

²⁷¹ *Id.* at 65,897–98.

²⁷² *Id.* at 65,901.

²⁷³ *See id.* at 65,902 (noting that the Governance Focus Alternative would impose special composition requirements on disciplinary panels of security-based-swap clearing agencies similar to those proposed under the Voting Interest Focus Alternative).

²⁷⁴ *Id.* at 65,897, 65,902.

The regulatory agencies' foci on voting caps and independence is designed to put in place structural governance features to accomplish the dual desiderata of open access and systemic risk management. The logic of these rules is fairly clear from the perspective of promoting competition and open access. It is the major dealers, after all, that are likely to have both the power and the incentive to use the clearinghouse structure to exclude new entrants and otherwise engage in anticompetitive behavior. The strategy of the regulators therefore appears to be to use voting caps and independence requirements to separate the major dealers from clearinghouse governance to prevent decisions affecting access—such as decisions on membership applications and reserve requirements—from being motivated by a desire to exclude competitors. That the rules are aimed at the major dealers is perhaps especially clear in the CFTC's special focus on enumerated entities, but it also inheres in the SEC's more general focus on members because the membership of clearinghouses, in the first instance at least, is likely to consist mainly of the major dealers. This focus may well make sense from the perspective of open access and promotion of competition, because separating major dealers from control of the clearinghouse may leave control in the hands of smaller dealers or customers who are less likely to use the clearinghouse to stifle competition among dealers.

From the perspective of controlling systemic risk, however, it is harder to articulate the underlying rationale of rules focusing on voting caps and director independence. From the perspective of controlling systemic risk, driving a wedge between the major dealers and control of the clearinghouse is not such an unambiguously good idea because the major dealers, in the first instance at least, bear the vast majority of the risk from clearinghouse failure and therefore have a strong incentive to prevent it. It is true, as discussed above, that their incentives are not perfect, but this of course raises the question of whose incentives are better. With regard to risk management, as opposed to clearinghouse access, the incentives of smaller dealers and end users are similarly problematic.

Still, taking the proposed rules on their own terms, the underlying principle seems to be to vest significant governance control in representatives of nonmember shareholders who, as such, have no particular interest in profit from trading but do have an interest in the success or failure of the clearinghouse. Because these shareholders would lose their investment if the clearinghouse failed, the thinking seems to be that they will have the right

incentives to prevent that from occurring by taking appropriate steps to manage systemic risk.

As noted in the prior discussion, however, there is strong reason to doubt both whether there ever will be a significant constituency of nonmember clearinghouse shareholders and, even if there were, whether they would have optimal incentives from the perspective of risk management. These considerations return immediately below in the critique of the regulators' proposals.

B. Critiquing the Proposed Rule-Making

The previous section of this Article described the two principal means by which the regulators propose to address incentive problems in clearinghouse governance: voting caps and independence requirements. The current section argues that each of these is misguided. Neither is likely to be effective in doing the job that policy-makers have set out for it, nor is either the best approach for addressing the central problem faced by clearinghouses—the effective containment of systemic risk.

1. Voting Caps

Voting caps are the most controversial aspect of the proposed rules. Many of the public comment letters sent to the regulators complained that some of the rule permutations failed to impose mandatory caps on dealers and that, as a result, dealers could band together as a group to exert majority voting control over clearinghouses.²⁷⁵ On the other side, banks and industry groups argued that the independence rules alone would be adequate to curtail dealers' incentive problems and that voting caps would likely constrain clearinghouse development by deterring investment from the most important capital provider

²⁷⁵ See, e.g., Letter from David W. Brown to Elizabeth M. Murphy, Sec'y, SEC (Nov. 17, 2010), available at <http://www.sec.gov/comments/s7-27-10/s72710-43.htm>; Letter from Ian Magruder, President, Cal. Coll. Democrats, to SEC (Nov. 16, 2010), available at <http://www.sec.gov/comments/s7-27-10/s72710-41.htm>; Letter from Laurie McBride, Chair, Cal. Democratic Party LGBT Caucus (North), to SEC (Nov. 16, 2010), available at <http://www.sec.gov/comments/s7-27-10/s72710-42.htm>; Letter from Paula Villescaz, Member, Cal Berkeley Democrats, to SEC (Nov. 16, 2010), available at <http://www.sec.gov/comments/s7-27-10/s72710-40.htm>. Several of these letters appear to be form letters generated by politically affiliated organizations. See Letter from Karrie McMillan, Gen. Counsel, Inv. Co. Inst., to Elizabeth M. Murphy, Sec'y, SEC, and David A. Stawick, Sec'y, CFTC (Nov. 17, 2010), available at <http://sec.gov/comments/s7-27-10/s72710-69.pdf> (supporting measures to limit the influence and control that any one set of enumerated entities may attempt to exert over others by putting its interests and those of its members ahead of its regulatory responsibilities).

for clearinghouses—large dealers.²⁷⁶ Each of these lines of argument, however, misses the two most basic problems with voting caps. First, because they fail to account for dealers' greatest source of power—their total control over order volume—voting caps simply will not work to constrain dealer influence in clearinghouse governance. Second, because they break the traditional alignment of economic and voting interests, they increase the opportunity for moral hazard, thereby increasing systemic risk. Voting caps, in other words, are both ineffective and dangerous.

Voting caps are likely to be ineffective in reducing dealer control over clearinghouses because dealers do not require ownership or voting interests to exert a controlling influence over market infrastructure. Their greatest source of power is their virtual lock on trading volume and the concomitant ability to direct order flow. The discussion in Part II revealed several examples of how dealers have used the ability to direct order flow to obtain concessions—including the victory of the ICE credit-default-swap clearinghouse over the CME platform, the threatened competition and then ultimate merger between Turquoise and the London Stock Exchange, and the market domination of Dealerweb only weeks after its launch.²⁷⁷ The lesson is that dealers exert power through their control over trading volume, to which voting caps speak not at all. Voting caps are therefore likely to be ineffective in limiting dealer control over clearinghouses.

But, perhaps more fundamentally, voting caps conflict with the basic corporate law premise that voting interests should be aligned with ownership interests. This is so because, when an investor has voting control that is disproportionate to her ownership interest, she has an incentive to use her voting power to increase her distribution of benefits from the firm at the expense of other owners' proportional interests. The misalignment of ownership and voting, in other words, creates moral hazard.

The moral hazard problem may be especially acute in clearinghouses. Recall again that dealers bear by far the greatest amount of risk in

²⁷⁶ See, e.g., Goodrich & Riffaud Comment Letter, *supra* note 181, at 3 (arguing that the incentive problems are overstated and that the proposed voting control limitations “would increase systemic risk due to the misalignment of interest” between those “who make the decisions and those who bear the risks of loss”); Letter from R. Glenn Hubbard, Co-Chair, Comm. on Capital Mkts. Regulation et al., to David A. Stawick, Sec’y, CFTC, and Elizabeth M. Murphy, Sec’y, SEC 3 (Nov. 15, 2010), available at <http://sec.gov/comments/s7-27-10/s72710-32.pdf> (“[T]o the extent conflicts of interest actually do pose a problem, . . . voting restrictions are . . . ill-suited to address the problem.”).

²⁷⁷ See *supra* Part II.A.1.

clearinghouses.²⁷⁸ If voting caps function as intended, they will limit the ability of dealers to exert a level of control commensurate with the risk they bear. Instead, nondealer equity holders, who suffer loss only after the dealer-funded reserves have been exhausted, will enjoy significantly greater control than the amount of risk they bear.

Equity owners who enjoy voting rights in excess of their risk may seek to clear inappropriate instruments or to underweight risk to capture additional volume, understanding that they suffer only when losses are large enough to destroy the clearinghouse but that they benefit from dollar one of profit. These incentives feed into some of the behavioral explanations explored above, in which the likelihood of low-probability, high-severity events is systematically underestimated.²⁷⁹ Here, equity holders have an economic interest in downplaying such possibilities because, by lowering risk weights and permitting more trading, they extract greater fees.²⁸⁰ Unfortunately for the rest of us, clearinghouses run in this way have the effect of increasing, rather than minimizing, systemic risk.

It is possible under such an arrangement that dealers, well aware of these risks, would not provide capital to clearinghouses. Understanding the dangers of moral hazard, in other words, they will refuse to invest their capital unless they receive control rights commensurate with their risk. Consider, too, that clearinghouses will likely need to call upon dealers not only for capital but also for expertise and understanding, which dealers may be unwilling to provide if their benefits are enjoyed disproportionately by others.²⁸¹ As a result, the argument goes, clearinghouses will be unfunded or underfunded and will not develop into the robust bulwarks against systemic risk that policy-makers intend for them to become.²⁸²

This outcome, however, seems unlikely, at least as the current proposed rules stand, simply because the voting-interest cap is likely to be totally ineffective at limiting the control of large dealers. That is, precisely because the voting-cap rule is unlikely to have its intended effect, it is also unlikely to

²⁷⁸ See *supra* Part II.A.1–2.

²⁷⁹ For a discussion of the behavioral biases impacting incentive, see *supra* Part II.A.1.

²⁸⁰ For a discussion of the nondealer shareholder's incentive to either clear too much or seek to reduce reserve requirements to increase trading volumes and the concomitant fees, see *infra* Part III.B.2.

²⁸¹ See Damgard Comment Letter, *supra* note 181, at 7 (noting that it is “impractical” to think dealers will contribute the capital and other resources necessary to form clearinghouses if they can have no “meaningful role in its governance and operations”).

²⁸² See *id.*

result in the dire predictions of either dooming undercapitalized clearinghouses to failure or increasing systemic risk through moral hazard. Dealers will retain effective control over clearinghouses through their power over volume. Only if rules were enacted that also effectively limited the ability of dealers to leverage their market power into effective control would it be necessary to seriously consider this moral hazard problem.²⁸³ As long as dealers retain effective control, however, it remains a hypothetical issue.

It is sufficient, therefore, to reject the current voting-cap proposals as ineffective. The moral hazard problem, however, teaches us that we ought to be careful in seeking to improve them by adding other means of limiting dealer control. Because of the importance of aligning control and risk, dealers must exert a level of control over clearinghouse operations that is commensurate with their exposure to risk through the clearinghouse. This cannot be achieved through simple voting caps but rather will require a delicate governance structure, explored in Part IV below.

2. Independence

The other key component of the regulatory agencies' proposed governance rules is mandatory minimum numbers of independent directors on clearinghouse boards and board committees. That the regulators should seize upon director independence in the clearinghouse context is, in one sense, unsurprising because director independence is, after all, a familiar corporate governance remedy. It has been suggested as the solution to incentive problems arising from the demand requirement in derivative suits,²⁸⁴ management buyouts,²⁸⁵ takeover defenses,²⁸⁶ self-dealing transactions,²⁸⁷ and,

²⁸³ Dealer power would also be diminished if there were only one clearinghouse. A single clearinghouse would effectively eliminate the dealers' threats to take their order volume to a competing clearinghouse with more amenable rules. Indeed, many have suggested that a single clearinghouse would be optimal for a host of reasons, including maximum efficiencies in netting. See, e.g., Darrell Duffie & Haoxiang Zhu, *Does a Central Clearing Counterparty Reduce Counterparty Risk?*, REV. ASSET PRICING STUD., Dec. 2011, at 74, 74–75 (“[C]ounterparty credit risk in the OTC derivatives market is exacerbated by a multiplicity of CCPs.”); Craig Pirrong, *Clearing Up Misconceptions on Clearing*, REG., Fall 2008, at 22, 24 (emphasizing that clearing is subject to strong economies of scale and scope). So far, however, the regulators have not sought to enter this debate, and no rule-making on this point appears imminent.

²⁸⁴ See, e.g., *Rales v. Blasband*, 634 A.2d 927, 933–34 (Del. 1993) (explaining that the relevant inquiry in assessing demand futility is only whether the board can exercise its independent and disinterested judgment in responding to a demand).

²⁸⁵ *In re Emerging Commc'ns, Inc. S'holders Litig.*, No. 16415, 2004 WL 1305745 (Del. Ch. May 3, 2004).

perhaps most famously, in Sarbanes–Oxley as a cure for accounting scandals, such as those that occurred at Enron and Worldcom.²⁸⁸ In those contexts, however, independence has a different meaning than it does here. There, and indeed generally in discourse about corporate governance, independence means that a director is not also a member of management or controlled by someone else who is.²⁸⁹ Here, however, independence means, basically, that one is not a large dealer. This is not quite (indeed not nearly) the same idea, and the unintended consequences that this distinction is likely to have on clearinghouse governance constitute a good reason to reject the attempt to use independence to solve the governance problems of clearinghouses. But it is not the only reason. Another equally good, if not better, reason is that independence simply does not work. There is no good reason to believe that independence solves corporate governance problems generally or that it will solve clearinghouse governance problems in particular.

Corporate board independence from management is not the same as clearinghouse board independence from dealers. The basic problem that independence is meant to solve in the context of corporate boards is the principal–agent problem between managers and shareholders.²⁹⁰ Since Berle and Means, corporate law theorists have recognized that managers have incentives to behave in ways that are not in the best interests of shareholders by, for example, consuming excessive compensation or perquisites, engaging in related-party transactions, or resisting acquisition for reasons of

²⁸⁶ *Unocal Corp. v. Mesa Petrol. Co.*, 493 A.2d 946, 955 (Del. 1985) (stating that the standard for the reasonable takeover defense is more easily met when the action has “the approval of a board comprised of a majority of outside independent directors”).

²⁸⁷ DEL. CODE ANN. tit. 8, § 144(a)(1) (2006) (providing that conflict of interest transactions are not voidable if approved by a majority of disinterested directors).

²⁸⁸ See P.M. Vasudev, *Default Swaps and Director Oversight: Lessons from AIG*, 35 J. CORP. L. 757, 782 (2010) (discussing how the enactment of the Sarbanes–Oxley Act, in the aftermath of Enron and Worldcom, promoted the idea of independent directors).

²⁸⁹ See ZABIHOLLAH REZAEI, CORPORATE GOVERNANCE POST-SARBANES–OXLEY: REGULATIONS, REQUIREMENTS, AND INTEGRATED PROCESSES 101 (2007) (“An independent director is someone whose only nontrivial professional, financial, or non-financial connection to the corporation, its chairman, CEO, or any other executive officer is his or her directorship.” (quoting *Corporate Governance Policies*, COUNCIL OF INSTITUTIONAL INVESTORS, [http://www.cii.org/UserFiles/file/CII%20Corp%20Gov%20Policies%20Full%20and%20Current%2012-21-11%20FINAL%20\(2\).pdf](http://www.cii.org/UserFiles/file/CII%20Corp%20Gov%20Policies%20Full%20and%20Current%2012-21-11%20FINAL%20(2).pdf) (last updated Dec. 21, 2011))). In addition, *independent* is sometimes used as a synonym for *disinterested* in the sense of identifying directors without a direct interest in an underlying transaction or dispute. See *id.*

²⁹⁰ See, e.g., Lisa M. Fairfax, *The Uneasy Case for the Inside Director*, 96 IOWA L. REV. 127, 138 (2010) (“The principle corporate-governance response to the agency problem has been the independent director.”).

entrenchment.²⁹¹ Independent board members are thought to be part of the solution to this problem because, as nonmembers of management, they do not have the same incentive to favor managers over shareholders.²⁹² However, in the clearinghouse context, the problem for which independence is being offered as a solution is not at all the same. True, in the clearinghouse context, there is a similar concern that dealers will engage in rent-seeking behavior, but in doing so, they are not, like managers in the corporate context, behaving as disloyal agents. Instead, the fear is that clearinghouse members will seek to extract rents by imposing excessive risk on the clearinghouse and thereby on the financial system or society generally.²⁹³ There is no principal-agent relationship but rather the possibility that members will seek their own gain by imposing an externality on others.

Independence makes some sense in the corporate context because it not only creates a class of directors who are, theoretically at least, immunized from management's self-serving incentives but also gives these directors a clear constituency—shareholders—and a clear group over which to ride herd—managers. In the clearinghouse context, by contrast, directors who are independent from the major dealers are neither immunized from the incentives of the major dealers nor given a clear constituency to serve. The regulators' understanding of independence seems to be purely negative—it means only nondealer. And although there is a clear affirmative interest to protect—the interest of the public in containing systemic risk in clearinghouses—it is not clear how or to whom independent clearinghouse directors are to be made accountable to that interest.

All of this can be seen most clearly by asking whose interests independent clearinghouse directors are likely to represent. The most obvious suggestion

²⁹¹ See generally ADOLF A. BERLE & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* (Transaction Publishers 1991) (1932) (detailing the rise of the modern corporation and the resulting divergence between directors' incentives and shareholder interests). The field of corporate governance grew out of the classic work of Berle and Means, which continues to be widely cited. See William W. Bratton, *Berle and Means Reconsidered at the Century's Turn*, 26 J. CORP. L. 737 (2001) (discussing the rare longevity of Berle and Means's theory in the field, despite decades of critical scholarship); Nicola Faith Sharpe, *The Cosmetic Independence of Corporate Boards*, 34 SEATTLE U. L. REV. 1435, 1440 n.16 (2011) ("Ten years later, the number of citations to Berle and Means has more than doubled. As of May 4, 2011, the database shows 1,561 citations when searching with Bratton's search terms 'berle/10 "modern corporation and private."").

²⁹² See, e.g., Fairfax, *supra* note 290, at 178 ("Independent directors' independence from the corporation means that they have no direct tie to the corporation and thus may not have incentives to advance corporate and shareholder interests.").

²⁹³ See Mark Roe, *Derivatives Clearinghouses Are No Magic Bullet*, WALL ST. J., May 6, 2010, at A19.

would be small dealers and end users, because these are the commercial parties with the greatest commercial interest in clearinghouses after the major dealers, but there is also the (slim) possibility that there may be a separate nondealer, non-end-user shareholder constituency as well. Unfortunately, the incentives of these parties are no better with regard to systemic risk than are those of major dealers and indeed may be worse. This is so, again, for reasons of moral hazard because ensuring any of these communities of board representation in excess of the residual risk they bear creates an incentive on the part of each to impose additional risk on the clearinghouse.

To see this as applied to each of the private interests in the clearinghouse, recall that small dealers, as discussed above, have an incentive either to keep trades off of the clearinghouse or impose additional risk by, for example, seeking to reduce reserve requirements.²⁹⁴ Likewise, nondealer shareholders have an incentive either to clear too much or to seek to reduce reserve requirements to increase trading volumes and the concomitant fees. With respect to end users, the story is similar but not the same. As noted above, end users' principal incentive in derivatives trading is to reduce costs—that is, to minimize spreads, which of course means reducing dealer per-trade revenue. This, in turn, may have the effect of inducing dealers, either by pushing inappropriate products onto the clearinghouse or by creating new products to trade bilaterally, to increase systemic risk. Of course, one possible response to these hypothetical reactions is the assertion that the best defense against this possibility is the inclusion of end users on clearinghouse boards (and risk committees) to prevent it. But end users have no special incentive to monitor this risk. Worse, there is a potential for side deals between end-user and dealer constituencies on clearinghouse boards. For example, dealers could offer a concession on derivatives spreads in exchange for end users' acquiescence in a reduction on margin requirements. Such a deal would make all parties happy—end users receive lower trading costs and dealers offset their losses by reducing the amount of margin collateral they need to make available—but it would increase systemic risk.

All of this is to say that the problem with independence as a solution to the governance problem of clearinghouses is that, unlike independent corporate boards, it does not create a constituency to solve the problem. Independent corporate directors are supposed to represent shareholders, not managers. Who are independent clearinghouse directors supposed to represent? As we have

²⁹⁴ See *supra* Part II.A.2.

seen, the most interested private parties do not have an adequate incentive to solve the systemic risk problem. What is needed, as articulated in greater detail in Part IV below, is a board specifically designed to represent the public interest in solving the problem of systemic risk.

But, before getting there, another deficiency of the independence mechanism proffered by the regulatory agencies is worth consideration. Quite simply, it doesn't work. Or, perhaps less provocatively, there is not strong evidence to support the view that it does work. In a seminal metastudy analyzing the body of empirical work on the effect of director independence on corporate governance, Professor Roberta Romano found that, "[a]cross a variety of analytical approaches, the learning of that literature is that independent boards do not improve performance and that boards with too many outsiders may, in fact, have a negative impact on performance."²⁹⁵ Share price performance, it is true, is not the same as effective corporate governance, which may have other benefits, for example, in reducing accounting fraud.²⁹⁶ But Professor Romano's article analyzed this question as well, specifically with respect to independent audit committees, gathering studies on whether firms with independent audit committees had fewer accounting misstatements than other firms. Of the sixteen studies she found addressing this question, ten failed to support a relationship between complete independence and fewer misstatements, while the data on majority (as opposed to complete) independence was mixed.²⁹⁷ Taking into account the relative weakness of these findings, along with the typical problems associated with regression analyses, such as the difficulty in establishing causality, it is difficult to find strong support in the literature for independence as the cure to all governance ailments.²⁹⁸ The literature since Professor Romano's 2005 study does not disrupt this basic conclusion in spite of the fact that board independence is often repeated, like a mantra, by policy entrepreneurs.²⁹⁹

²⁹⁵ Roberta Romano, *The Sarbanes–Oxley Act and the Making of Quack Corporate Governance*, 114 YALE L.J. 1521, 1530 (2005).

²⁹⁶ See Anup Agrawal & Sahiba Chadha, *Corporate Governance and Accounting Scandals*, 48 J.L. & ECON. 371, 374–75 (2005).

²⁹⁷ Romano, *supra* note 295, at 1532.

²⁹⁸ The difficulty in establishing causation with a regression study comes down to the basic point that correlation does not prove causation. Positive findings may be explained by other factors, such as better management generally, that firms that establish independent audit committees happen to possess more often than firms without independent audit committees. *Id.*

²⁹⁹ See Sharpe, *supra* note 291, at 1435 (addressing the “pervasive misperception on the part of regulators that director independence significantly increases the efficacy of corporate boards”); Vasudev, *supra* note 288 (performing a case study of AIG to test the efficacy of the contemporary models of governance, which

Finally, for those who prefer anecdotal to statistical evidence, I will point out that the board of directors of AIG—the *bête noir* of the financial crisis, whose downfall was caused in no small part by its derivatives transactions—had a supermajority of independent directors.³⁰⁰ From 2006 to 2009, all but two members of the holding company board, which ranged from twelve to sixteen total members, were independent.³⁰¹ Enron, too, had a highly independent board—eleven of fourteen of its members were independent prior to its fall—which nevertheless failed to uncover massive, hidden risk taking.³⁰² Nor did the independent directors of Citigroup, a solid majority of the board, prevent the company from becoming embroiled in the subprime lending market and taking on assets that later became toxic.³⁰³ The anecdotes, in other words, support the statistics—-independent directors have not demonstrated any special ability to monitor or manage risk.

That policy-makers would settle on board independence as a solution to the problem of clearinghouse governance suggests both a lack of imagination and a failure to reflect deeply on the causes of the basic clearinghouse problem. As weak a governance solution as it is for corporate governance generally, independence is particularly ill suited to the clearinghouse context. In the Part that follows, this Article suggests a governance structure better suited to respond to the unique problems of clearinghouses.

IV. RECOMMENDATIONS

The basic undercurrents of the discussion to this point have been problems of moral hazard and free-riding. A recurring moral hazard problem underlies the incentives of each of the parties most likely to become involved in clearinghouse governance. And the central function of the clearinghouse—the

emphasize director independence, to conclude that such emphasis may impede effective business oversight by directors and undermine directorial accountability).

³⁰⁰ As described above, the chaos at AIG was caused by a wholly owned subsidiary, AIGFP, which had its own board of directors that was, of course, appointed by and answerable to the holding company board. See *supra* Part I.B.3 (discussing the AIG situation).

³⁰¹ See Am. Int'l Grp., Proxy Statement (Form DEF 14A), at 13–15 (June 6, 2009); Am. Int'l Grp., Proxy Statement (Form DEF 14A), at 6–9 (Apr. 4, 2008); Am. Int'l Grp., Proxy Statement (Form DEF 14A), at 7–10 (Apr. 6, 2007); Am. Int'l Grp., Proxy Statement (Form DEF 14A), at 3–6 (Apr. 5, 2006).

³⁰² Enron Corp., Proxy Statement (Form DEF 14A), at 4–8 (Mar. 27, 2001).

³⁰³ See Citigroup Inc., Proxy Statement (Form DEF 14A), at 7–8 (Mar. 13, 2008); Citigroup Inc., Proxy Statement (Form DEF 14A), at 7 (Mar. 13, 2007); see also *In re Citigroup Inc. S'holder Derivative Litig.*, 964 A.2d 106 (Del. Ch. 2009) (dismissing a derivative suit against Citigroup directors for failure to monitor and manage company risks).

management of systemic risk—has revealed itself to have the character of a public good, leading to a pervasive free-rider problem.

Putting these two insights together, the optimal clearinghouse governance structure would seem to require a separate governing body with a public charge—the containment of systemic risk. Additionally, to be rendered accountable to that public interest, the governing body must be appointed directly by electors representing that interest. The optimal clearinghouse governance structure thus would have a dual aspect, guided in part by commercial interests seeking to ensure the sustainability of the clearinghouse from a business perspective³⁰⁴ and in part by the public interest in managing systemic risk. These two aspects of clearinghouse governance would interact for the good of the clearinghouse—the failure of either interest dooms both—but their separate foci and separate lines of accountability assure that neither interest absorbs the other.

Although such a structure, where separate organs of a firm's board are appointed by and accountable to different interests, is unusual in American corporate governance, there is a model for it in the supervisory board structure of continental Europe. In the sections that follow, this Article develops the European model as a source for designing such a dual governance structure, then argues that, in spite of its foreign origins, many aspects of this structure are not dramatically different from certain suggestions of the regulatory agencies in their proposed rule. Finally, the Article ties these threads together to weave a structural solution to the problem of clearinghouse governance.

A. *The Supervisory Board in Europe*

Companies from certain continental European countries have long functioned with a dual-board structure consisting of management and supervisory boards. The paradigmatic example is the German public company (*Aktiengesellschaft*, or AG), but companies in other countries, most of them in Europe—such as Austria, Sweden, and Holland—follow similar models.³⁰⁵ The dual-board structure is formally separate from, but often intertwined with, another principle of German corporate governance: codetermination. Together

³⁰⁴ This, of course, is an essential aspect of clearinghouse governance. If the clearinghouse fails as a sustainable business model, it must also fail as a solution to the problem of systemic risk.

³⁰⁵ Martin Gelter, *Tilting the Balance Between Capital and Labor? The Effects of Regulatory Arbitrage in European Corporate Law on Employees*, 33 *FORDHAM INT'L L.J.* 792, 803–04 (2010) (listing countries following board models in some way similar to that of Germany).

these principles offer a promising model for solving the governance problem faced by derivatives clearinghouses.

The dual-board structure of the German *AG* is mandated by statute.³⁰⁶ The German Federal Stock Corporation Act requires that all companies, regardless of size or public trading of shares, have a management board (*der Vorstand*) and a supervisory board (*der Aufsichtsrat*).³⁰⁷ From the unitary board perspective of American corporations, this structure may seem quite alien. However, the German dual-board structure can be seen as a mere variation in conceptualizing the basic locus of authority in firms: whereas German firms separate management and oversight functions into separate boards, American firms split these functions between officers and directors.

Under German law, the management board is charged with responsibility for the day-to-day operation of the firm.³⁰⁸ It acts on behalf of the corporation as a whole,³⁰⁹ with fiduciary duties to the corporation.³¹⁰ In addition to responsibility for the day-to-day operations of the corporation, the management board is charged with what in American corporate governance

³⁰⁶ Aktiengesetz [AktG] [Stock Corporation Act], Sept. 6, 1965, BUNDESGESETZBLATT, Teil I [BGBl. I] at 1089, last amended by Restrukturierungsgesetz [RStruktG] [Restructuring Act], Dec. 9, 2010, BGBl. I at 1900, art. 6, §§ 76, 95 (Ger.), translated in NORTON ROSE, STOCK CORPORATION ACT (2011), available at <http://www.nortonrose.com/files/german-stock-corporation-act-2010-english-translation-pdf-59656.pdf>. The statute is the *Aktiengesetz* or *AktG*, translated here as the “German Federal Stock Corporation Act.” For a general description of the Act and its similarities and differences to other European governance models, see Klaus J. Hopt & Patrick C. Leyens, *Board Models in Europe—Recent Developments of Internal Corporate Governance Structures in Germany, the United Kingdom, France, and Italy*, 1 EUR. COMPANY & FIN. L. REV. 135 (2004); and Carsten Jungmann, *The Effectiveness of Corporate Governance in One-Tier and Two-Tier Board Systems—Evidence from the UK and Germany*, 3 EUR. COMPANY & FIN. L. REV. 426 (2006) (comparing the single-tier U.K. system with the two-tier German system).

³⁰⁷ Stock Corporation Act, art. 6, §§ 76, 95 (Ger.), translated in ROSE, *supra* note 306, at 39–40, 50. The Act also mandates a shareholders’ meeting (*die Hauptversammlung*). *Id.* art. 6, §§ 118–119, translated in ROSE, *supra* note 306, at 66–68.

³⁰⁸ See *id.* art. 6, § 76, para. 1, translated in ROSE, *supra* note 306, at 39 (delegating to the management board direct responsibility for the management of the company).

³⁰⁹ See *id.* art. 6, § 78, para. 1, translated in ROSE, *supra* note 306, at 40 (requiring the management board to represent the company both in and out of court).

³¹⁰ See *id.* art. 6, § 93, para. 1, translated in ROSE, *supra* note 306, at 48. Members of the management board face personal liability for breaches of fiduciary duty to the corporation. See *id.* art. 6, § 93, para. 2, translated in ROSE, *supra* note 306, at 49. Fiduciary duty breaches are policed, in the first instance, by the supervisory board, which may, if it deems it necessary and appropriate, bring an action on behalf of the corporation against the members of the management board. See JEAN J. DU PLESSIS ET AL., GERMAN CORPORATE GOVERNANCE IN INTERNATIONAL AND EUROPEAN CONTEXT 139–40 (2d ed. 2012). Whether a German board member’s fiduciary duty to the corporation is the same as a duty to the corporation’s shareholders is debatable. See Martin Gelter, *Taming or Protecting the Modern Corporation? Shareholder–Stakeholder Debates in a Comparative Light*, 7 N.Y.U. J.L. & BUS. 641, 694–99 (2011).

would be traditional responsibilities of corporate officers, including the maintenance of books and records,³¹¹ regular reporting to the supervisory board,³¹² and the holding of a shareholders' meeting.³¹³

Likewise, the German supervisory board is, in some ways, just another way of conceptualizing the role of a typical American board of directors.³¹⁴ The supervisory board is elected and granted authority to appoint, remove,³¹⁵ and supervise the members of the management board,³¹⁶ just as American boards are elected by shareholders and empowered to do all of the same with respect to corporate officers.³¹⁷ Similarly, although the supervisory board is not involved in day-to-day management of the company, certain fundamental decisions must be approved by the supervisory board.³¹⁸ The main statutory duties of the supervisory board are to elect and remove members of the management board³¹⁹ and to supervise the management board.³²⁰ Although

³¹¹ Compare Stock Corporation Act, art. 6, § 91, para. 1, translated in ROSE, *supra* note 306, at 48 (“The management board shall ensure that the requisite books of account are maintained.”), with DEL. CODE ANN. tit. 8, § 142(a) (2006) (providing that corporate officers must keep records of meetings). The supervisory board has the power to examine the books and records as part of their supervisory authority. Stock Corporation Act, art. 6, § 111, para. 2, translated in ROSE, *supra* note 306, at 62.

³¹² Compare Stock Corporation Act, art. 6, § 90, translated in ROSE, *supra* note 306, at 46–47 (requiring the management board to regularly report to the supervisory board on several issues), with DEL. CODE ANN. tit. 8, § 141(e) (allowing the board of directors to rely in good faith on reports of the corporation’s officers or employees).

³¹³ Compare Stock Corporation Act, art. 6, § 121, para. 2, translated in ROSE, *supra* note 306, at 68 (providing for meetings of shareholders), with DEL. CODE ANN. tit. 8, § 211 (providing for meetings of stockholders).

³¹⁴ See REINIER KRAAKMAN ET AL., *THE ANATOMY OF CORPORATE LAW: A COMPARATIVE AND FUNCTIONAL APPROACH* (2d ed. 2009).

³¹⁵ Stock Corporation Act, art. 6, § 84, translated in ROSE, *supra* note 306, at 43.

³¹⁶ *Id.* art. 6, § 111, para. 1, translated in ROSE, *supra* note 306, at 62.

³¹⁷ DEL. CODE ANN. tit. 8, § 142.

³¹⁸ See Stock Corporation Act, art. 6, § 111, para. 4, translated in ROSE, *supra* note 306, at 63.

³¹⁹ See *id.* art. 6, § 84, translated in ROSE, *supra* note 306, at 43. In addition, the Act contains formal independence requirements for supervisory board members. See *id.* art. 6, § 105, translated in ROSE, *supra* note 306, at 60 (codifying the incompatibility of management and supervisory board membership). The German Corporate Governance Code provides:

A Supervisory Board member is considered independent if he/she has no business or personal relations with the company or its Management Board which cause a conflict of interests. Not more than two former members of the Management Board shall be members of the Supervisory Board and Supervisory Board members shall not exercise directorships or similar positions or advisory tasks for important competitors of the enterprise.

....

Management Board members may not become members of the Supervisory Board of the company within two years after the end of their appointment unless they are appointed upon a motion presented by shareholders holding more than 25% of the voting rights in the company.

they are formally separate—a person cannot be a member of both the management and supervisory board³²¹—in practice, the management board and the supervisory board cooperate closely in management of the corporation.³²²

The similarities between the German and American systems end, however, with codetermination—mandatory labor representation on the supervisory board.³²³ The general rule in the *AG* is that the members of the supervisory board are elected by the shareholders at the annual meeting.³²⁴ However, for corporations that are subject to the codetermination laws, the applicability of which depends in large part upon the corporation's number of employees, a portion of the members of the supervisory board must be elected by the employees.³²⁵ For firms with over two thousand employees, the codetermination rules are fully applicable and require exactly half of the members of the supervisory board to be elected by employee representatives.³²⁶ However, the president of the supervisory board, who casts the deciding vote in cases of deadlock, is always a representative of the shareholder constituency, not the employee constituency, which suggests that, in spite of evenly divided representation, shareholders will often have a slightly stronger voice.³²⁷

Deutscher Corporate Governance Kodex [DCGK] [German Corporate Governance Code], Feb. 26, 2002, BANZ. at [11], § 5.4.2, 5.4.4, last amended May 26, 2010 (Ger.), translated in GOV'T COMM'N, GERMAN CORPORATE GOVERNANCE CODE 11 (2010), available at http://www.corporate-governance-code.de/eng/download/kodex_2010/German-Corporate-Governance-Code-2010.pdf.

³²⁰ See Stock Corporation Act, art. 6, § 111, translated in ROSE, *supra* note 306, at 62–63.

³²¹ *Id.* art. 6, § 105, para. 1, translated in ROSE, *supra* note 306, at 60.

³²² See Johannes Semler, *The Practice of the German Aufsichtsrat*, in COMPARATIVE CORPORATE GOVERNANCE: THE STATE OF THE ART AND EMERGING RESEARCH 267 (Klaus J. Hopt et al. eds., 1998).

³²³ See Gelter, *supra* note 305, at 802–05 (describing the effects of codetermination); Katharina Pistor, *Codetermination: A Sociopolitical Model with Governance Externalities*, in EMPLOYEES AND CORPORATE GOVERNANCE 163, 164–80 (Margaret M. Blair & Mark J. Roe eds., 1999) (explaining in detail the history and operation of codetermination).

³²⁴ Stock Corporation Act, art. 6, § 101, para. 1, translated in ROSE, *supra* note 306, at 56.

³²⁵ See *id.* (mandating that supervisory board members be elected by shareholders “unless they are to be appointed to the supervisory board or elected as representatives of the employees pursuant to the Codetermination Act, the Supplemental Codetermination Act, the One-Third Co-determination Act or the Act on Employee Co-determination within Cross-border Mergers”); see also *id.* art. 6, § 96, translated in ROSE, *supra* note 306, at 51 (requiring employee participation on the supervisory board when the company is subject to certain codetermination acts).

³²⁶ Mitbestimmungsgesetz [MitbestG] [Co-Determination Act], May 4, 1976, BGBL. I at 1153, §§ 1, 7, last amended by Gesetz [G], Mar. 23, 2002, BGBL. I at 1130 (Ger.), translated in *Act on Co-Determination by Employees (Co-Determination Act)*, BMWI, http://www.bmwi.de/English/Redaktion/Pdf/_Archiv/labour-law/act-on-co-determination-by-employees (last visited Aug. 6, 2012).

³²⁷ *Id.* § 29, para. 2, translated in *Act on Co-Determination by Employees (Co-Determination Act)*, *supra* note 326.

Codetermination of the supervisory board is a structural solution designed to guarantee that German corporations remain accountable to both shareholders and employees. A rich literature has developed to explain the origin and the persistence of this structural compromise.³²⁸ For our purposes, however, it is important to reflect only on the structural means of enforcing this compromise—the use of distinctive electors. Shareholders vote for shareholder representatives and employees vote for employee (often union) representatives, an arrangement designed to ensure the accountability of board members to these respective interests.³²⁹ The two sets of interests then work together through their representatives on the supervisory board.

This board structure presents an appealing model for clearinghouse governance because it presents a formal means of guaranteeing accountability, not, in the case of clearinghouses, to employee interests but rather to the public interest in managing systemic risk. The parallel in the context of clearinghouses would thus be a mechanism for electing board members to render them accountable to the public interest of containing systemic risk, rather than to the commercial interests underwriting the clearinghouse. Defining the electors of this class of public representatives remains a challenge—the public interest in mitigating systemic risk is not so easily identified with a group of individuals as is the interest of employees in corporate governance. However, as a structural means of guaranteeing that the

³²⁸ See, e.g., MARK J. ROE, POLITICAL DETERMINANTS OF CORPORATE GOVERNANCE: POLITICAL CONTEXT, CORPORATE IMPACT 29–33, 71–81 (2003) (describing Germany's historical involvement with codetermination and its present impact); Martin Gelter, *The Dark Side of Shareholder Influence: Managerial Autonomy and Stakeholder Orientation in Comparative Corporate Governance*, 50 HARV. INT'L L.J. 129, 169 (2009) (discussing the current debate regarding codetermination efficiency).

³²⁹ Technically, all board members have the same obligation to promote the interests of a corporation, and employee representatives have no special duty to employees. See Stock Corporation Act, art. 6, § 116, translated in ROSE, *supra* note 306, at 65 (“§ 93 on the duty of care and responsibility of members of the management board shall . . . apply analogously to the duty of care and responsibility of the members of the supervisory board.”). As summarized by commentators:

There are no additional statutory rules, and there is apparently no case law in Germany addressing whether there should be differences in the standards of care applicable to management directors as compared to supervisory directors. However, there appears to be unanimous agreement in the literature that the duties of the members of the two boards are the same in principle, although they differ in practice due to the different tasks assigned by the law to the two boards.

Bernard Black et al., *Legal Liability of Directors and Company Officials Part 1: Substantive Grounds for Liability (Report to the Russian Securities Agency)*, 2007 COLUM. BUS. L. REV. 614, 774–75; accord Klaus J. Hopt, *New Ways in Corporate Governance: European Experiments with Labor Representation on Corporate Boards*, 82 MICH. L. REV. 1338, 1360 (1984) (“Under co-determination the standard formula used to prescribe the object of the board member’s duty of loyalty is the interest of the enterprise, whatever that may be.”).

public interest in clearinghouse governance is represented, the supervisory board structure of German public companies presents a promising model.

B. Similar Suggestions in the Proposed Rules

Seeking foreign guidance to solve domestic problems is often controversial.³³⁰ And the German corporate governance model, in particular, has been criticized as inefficient.³³¹ Such criticisms, however, are often motivated by an underlying theory of the firm—shareholder primacy—that is hostile to any significantly enhanced role for labor in the fundamental governance structure of the corporation.³³² While this may be a sensible perspective in most debates over corporate governance, the free-riding and moral hazard problems inherent in clearinghouse governance, together with the public-private purpose of clearinghouses, render it largely inapplicable here. This Article seeks to use the German import not as a means of increasing the bargaining power of labor but rather as a model from which to adapt a structural solution to the free-riding and moral hazard problems inherent in clearinghouse governance.

Moreover, the concept of a “constituency director” has arisen in several domestic contexts, including public companies and in pension fund governance.³³³ Likewise, by way of analogy, the Depository Trust Clearing Corporation has a board of between fifteen and twenty-five members, which

³³⁰ For more on this controversy, see RICHARD A. POSNER, *HOW JUDGES THINK* 347–68 (2008); John O. McGinnis & Ilya Somin, *Should International Law Be Part of Our Law?*, 59 *STAN. L. REV.* 1175 (2007); and Mark Tushnet, *When Is Knowing Less Better than Knowing More? Unpacking the Controversy over Supreme Court Reference to Non-U.S. Law*, 90 *MINN. L. REV.* 1275 (2006).

³³¹ See, e.g., Gary Gorton & Frank A. Schmid, *Capital, Labor, and the Firm: A Study of German Codetermination*, 2 *J. EUR. ECON. ASS'N* 863, 885–86 (2004) (laying out “two possible explanations for the negative effect of codetermination on the public value of the firm”: either the firm is run less efficiently or labor alters “the objective function of the firm”).

³³² See Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 *GEO. L.J.* 439, 442 (2001) (“Of course, asserting the primacy of shareholder interests in corporate law does not imply that the interests of corporate stakeholders must or should go unprotected. It merely indicates that the most efficacious legal mechanisms for protecting the interests of nonshareholder constituencies—or at least all constituencies other than creditors—lie outside of corporate law. For workers, this includes the law of labor contracting, pension law, health and safety law, and antidiscrimination law. For consumers, it includes product safety regulation, warranty law, tort law governing product liability, antitrust law, and mandatory disclosure of product contents and characteristics. For the public at large, it includes environmental law and the law of nuisance and mass torts.”).

³³³ See generally Stewart J. Schwab & Randall S. Thomas, *Realigning Corporate Governance: Shareholder Activism by Labor Unions*, 96 *MICH. L. REV.* 1018, 1075–77 (1998) (describing the origin, structure, and prevalence of Taft–Hartley pension plans, which require equal representation by employers and employees on the trust board).

must include two shareholder designees as well as representatives of clearing-agency participants, representatives of management, and nonparticipant representatives in proportions determined by a governance committee.³³⁴ Representative board structures, in other words, are not entirely alien to the United States. Perhaps most importantly, however, the basic approach offered by this model—that is, the establishment of a formal body separately accountable to the public purpose of managing systemic risk—can also be found in several suggestions made by both the CFTC and the SEC in their rule-making processes.³³⁵

The CFTC in fact comes quite close to recommending a supervisory-board structure similar to the one outlined above in requiring each clearinghouse within its regulatory purview to form a Risk-Management Committee of the board, the membership of which must be comprised 35% of independent directors and 10% of end-user representatives.³³⁶ Under the proposed rules, the Risk-Management Committee is generally charged with holding regular meetings and reporting to the board and, in particular, is given responsibility for three critical clearinghouse functions: (1) advising on the clearinghouse's risk model and default procedures, (2) determining standards for and reviewing applications for clearinghouse membership, and (3) deciding which products are eligible for clearing.³³⁷ As described above, these are the key means by which clearinghouses will manage systemic risk. By creating a committee of the board affirmatively charged with overseeing these matters, the CFTC has gone some distance in creating a distinct body charged with the central work of containing systemic risk. This is not entirely different from what this Article recommends under the structure of the supervisory board.

However, the CFTC's vision of the Risk-Management Committee, focusing largely on director independence and, in part, on end-user

³³⁴ BD. OF DIRS., DEPOSITORY TRUST & CLEARING CORP., BOARD MISSION STATEMENT AND CHARTER 4–5 (2012), available at http://www.dtcc.com/legal/compliance/governance/DTCC_BOD_Mission_and_Charter.pdf.

³³⁵ This approach is also arguably inherent in Dodd–Frank, which can be read expansively to establish the clearinghouse as the agent entrusted to manage the systemic risk inherent in derivatives transactions. *See supra* Part I.C.3; *see also* TIMOTHY BESLEY, PRINCIPLED AGENTS? THE POLITICAL ECONOMY OF GOOD GOVERNMENT (2006) (applying economic models to political institutions to evaluate public governance structures).

³³⁶ Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest, 75 Fed. Reg. 63,732, 63,740 (proposed Oct. 18, 2010) (to be codified at 17 C.F.R. pts. 1, 37, 38, 39, 40).

³³⁷ *Id.* at 63,750. The Risk-Management Committee is also specifically charged with reviewing the performance of the Chief Compliance Officer. *Id.*

representation, does not sufficiently address the fundamental problems of free-riding and moral hazard. As argued at length above, directors who are formally independent do not necessarily have the optimal incentives to manage systemic risk,³³⁸ and the incentives of end users, in particular, are poorly suited to this goal.³³⁹ Successful risk management in the clearinghouse context requires more than formal independence and end-user representation. It requires a body that is separately charged by its electors to contain systemic risk. This is close to the vision articulated by the CFTC in the Risk-Management Committee but with important differences explored in the next section.

In contrast to the CFTC's vision, the SEC's proposed rule does not require the clearinghouses over which it has regulatory authority to form a Risk-Management Committee but rather leaves the formation of such a committee up to the discretion of each clearinghouse.³⁴⁰ If a clearinghouse does elect to form such a committee, however, the SEC requires either 35% or majority independence, depending upon whether the clearinghouse follows the governance-focused or voting-interest-focused rule set.³⁴¹ Again, as this Article argues throughout, systemic risk is not a problem that independence alone will solve.

The SEC does, however, come close to recommending a kind of supervisory body in another part of its proposed rule. In discussing the nominating committees of clearinghouse boards, the SEC alludes to the possible consideration of other structural alternatives, "such as allowing a security-based swap clearing agency to have a board of trustees responsible for nominating candidates for the Board."³⁴² The SEC goes on to solicit further comment on the "compositional requirements or other limits imposed on the board of trustees" and on how "such a board of trustees [should] be appointed."³⁴³ A board of trustees with oversight responsibilities for other board functions bears at least a passing resemblance to the supervisory body advocated by this Article. Indeed, one way of describing the supervisory body outlined above is a group of trustees with a specific charge to represent the public's interest in containing systemic risk.

³³⁸ See *supra* Part III.B.2.

³³⁹ See *supra* Part II.B.

³⁴⁰ Proposed SEC Rule Regarding Ownership and Governance, *supra* note 113, at 65,897; see also *id.* at 65,930 ("A security-based swap clearing agency may establish such other committees of the Board, including a risk committee, as it deems appropriate.").

³⁴¹ *Id.* at 65,897.

³⁴² *Id.* at 65,899.

³⁴³ *Id.*

Although each of the regulatory agencies can thus be seen to have entertained structural alternatives similar to the supervisory body this Article is proposing, both the SEC and the CFTC ultimately turned away from these alternatives in favor of the familiar but inapt solution of formal independence. Prior sections of this Article have critiqued the agencies' approach. The following section sketches an alternative.

C. Supervisory Directors for Systemic Risk

So far, this Part has advocated the establishment of a formal body separately accountable to the public purpose of managing systemic risk. It has yet to answer how such a body would come to be, to whom such a body would be accountable, and how such a body would interact with the other organs of clearinghouse governance. The paragraphs that follow attempt to outline possible answers to these questions while remaining cognizant of the fact that the drafting of highly particularized rules lies outside the scope of a law review article.

An initial consideration is whether it would be advisable to split clearinghouse boards formally into two, following the example of the German *AG*. However, considering that much of the German dual-board structure can be seen as a mere variation on the basic locus of authority in firms, creating management and supervisory boards where American firms create officers and directors, it seems unnecessary to depart from the unitary-board structure customary in American corporate governance. Such a departure, moreover, would require much greater regulatory interference in the basic organs of corporate governance and risk unintended consequences. Nevertheless, it is important that the clearinghouse board includes representatives who see as their central role the control of systemic risk, rather than the pursuit of commercial goals through the clearinghouse, and borrowing from the example of codetermination, it would seem that the best way to ensure that these representatives fulfill this role is to make these representatives separately elected. Clearinghouse boards would thus be dual not in the sense of having management and supervisory boards but rather in the sense of containing two separately elected classes of directors: one with traditional fiduciary responsibilities to shareholders, which this Article will refer to as "traditional directors," and another charged with the public role of overseeing systemic risk, which this Article will refer to as "supervisory directors."

To effectuate this dual-board structure, the electors of clearinghouse boards would likewise need to be split into two classes—into the electors of the traditional directors, on the one hand, and the electors of the supervisory directors, on the other. As regards the electors of the traditional directors, because the special requirements of the clearinghouse—that is, the management and control of systemic risk—are to be the central focus of the supervisory directors, there would seem to be no reason to interfere with the basic norm of shareholder primacy in electing the traditional directors. This Article therefore recommends the abandonment of the voting caps and independence requirements recommended by the SEC and the CFTC in favor of a system that allows the traditional directors to be elected by whatever commercial interests come to own the clearinghouse. A consequence of this approach may be that the major dealers come to dominate the traditional directors, but this is not necessarily a negative outcome in light of the importance, described above, in matching control with risk bearing. Moreover, the supervisory directors would stand as a counterweight to any excesses of traditional directors under the influence of the major dealers.

With regard to the supervisory directors, it is not enough, as this Article argued at length above, simply to exclude the interests of the major dealers. Rather, it is necessary to define a class of electors with the control of systemic risk as their principal consideration. This poses a challenge. As a public good, the control of systemic risk is theoretically in the interest of every taxpayer and every participant in the financial system. However, direct democratic election of clearinghouse board members seems impractical for a great many reasons, not least of which is the fact that it seems unlikely that a large number of ordinary voters understand derivatives trading sufficiently well to know who a good overseer of counterparty credit risk might be.³⁴⁴ Neither, presumably, do ordinary politicians.³⁴⁵ It therefore seems sensible for this responsibility to

³⁴⁴ Although 57% of Americans gave themselves an *A* or *B* grade for their knowledge of personal finance in a recent national survey, 11% gave themselves a *D* or *F*, with the remainder accepting the gentleman's *C*. See HARRIS INTERACTIVE INC., THE 2011 CONSUMER FINANCIAL LITERACY SURVEY: FINAL REPORT 24 (2011), available at http://www.nfcc.org/newsroom/FinancialLiteracy/files2011/NFCC_2011Financial%20LiteracySurvey_FINALREPORT_033011.pdf. Moreover, there is evidence of grade inflation. Most Americans scored less than three out of five on a very basic financial-literacy quiz prepared for the FINRA Investor Education Foundation. See APPLIED RESEARCH & CONSULTING LLC, FINANCIAL CAPABILITY IN THE UNITED STATES: INITIAL REPORT OF RESEARCH FINDINGS FROM THE 2009 NATIONAL SURVEY 41 (2009), available at <http://www.finrafoundation.org/web/groups/foundation/@foundation/documents/foundation/p120536.pdf>.

³⁴⁵ Consider the comments of Democratic strategist James Carville accounting for the inability of politicians to understand and explain the financial crisis clearly by admitting that he too was “totally stumped

devolve upon those public servants who are most likely to understand counterparty credit risk and how it might best be managed—that is, the regulators responsible for managing systemic risk in the context of derivatives transactions.

The regulators charged with this responsibility include, most obviously, the SEC and the CFTC. But a significant role in designing clearinghouse architecture has also been played by the Federal Reserve, the Federal Deposit Insurance Corporation, and the Treasury Department. Each of these agencies ought to be given some role in the election of supervisory directors.³⁴⁶ Note, however, that this Article is not recommending that the regulators be directly involved in clearinghouse governance. Rather, their role is to elect *private* parties with the knowledge and expertise to serve in this role. In this way, the supervisory directors should be accountable to this public interest without creating a direct role for public regulators on these quasi-private boards.

Lest this governance arrangement seem utterly unheard of, it is worth noting that there is in fact a close parallel in an organization with a charge that is in some ways similar to DCOs. The Securities Investor Protection Corporation (SIPC) is the federal organization charged with recovering investor funds from “bankrupt and otherwise financially troubled brokerage firms.”³⁴⁷ By law, SIPC has a seven-member board, and one member is appointed from the Treasury Department, another from the Federal Reserve Board, and five by the President, of which three are appointed as representatives of the securities industry and two are appointed to represent investors.³⁴⁸ Making clearinghouse board members presidential appointees subject to Senate confirmation seems unnecessary and perhaps unwise,³⁴⁹ but SIPC illustrates that the practice of using public regulators to appoint members of quasi-private boards is not without precedent.

by derivatives.” See James Carville, *Daddy, Tell Me, What Exactly Is a Derivative?*, FIN. TIMES (London), Mar. 25, 2009, at 11.

³⁴⁶ The voting interest could be divided among these agencies according to their expertise or the importance of their particular agency’s role in managing financial risk. Alternatively, for reasons of political expediency, equal 20% interests could be allocated to each of the five bodies.

³⁴⁷ *Why Was SIPC Created?*, SEC. INVESTOR PROTECTION CORP., <http://sipc.org/Who/WhySIPC.aspx> (last visited Aug. 6, 2012).

³⁴⁸ 15 U.S.C. § 78ccc(c)(2) (2006).

³⁴⁹ See generally Carl Hulse, *Lawmakers Seek to Speed System of Confirmation*, N.Y. TIMES, Apr. 25, 2011, at A1 (describing the onerous confirmation process often devolving into deadlock and recent efforts to overcome it).

Moreover, an additional benefit of this electoral system may be to render the supervisory directors less subject to capture by the various commercial interests. Regulatory-capture theory teaches that regulators may come to serve the interests that they have been put in place to police.³⁵⁰ Because they are separately answerable to five distinct regulatory bodies, however, the supervisory directors may be less susceptible to capture. To exert control over the supervisory directors, the commercial interests would have to capture the agendas of several different regulatory agencies and coordinate their voting in support of their own slate. This may not be impossible, of course, but it is at least more difficult than capturing the agenda of a single regulator. In any event, the more common corporate governance problem of groupthink, in which supposedly independent directors come to represent management interests,³⁵¹ is here effectively controlled by making supervisory directors answer directly to a group of regulators expressly charged with protecting the public from systemic risk.

Finally, what should be the allocation of board power between the traditional directors and the supervisory directors? Here again, this Article recommends following the model of German codetermination and dividing board membership equally between traditional directors and supervisory directors.³⁵² Such an arrangement ensures that the public purpose of containing systemic risk will be treated as at least equal with the private purposes of clearinghouse owners. This of course raises the issue of how to resolve board deadlocks, a point on which the recommendations of this Article differ from

³⁵⁰ See generally STEVEN P. CROLEY, REGULATION AND PUBLIC INTERESTS: THE POSSIBILITY OF GOOD REGULATORY GOVERNMENT 14–25 (2008) (describing the “cynical view” that certain groups are able to get regulations passed that favor their interests to the detriment of other groups); George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971) (applying the concept of regulatory capture to the co-opting of regulatory agencies by special interest groups such that the agency comes to promote the private group interest over the public interest intended from the regulation).

³⁵¹ See generally IRVING L. JANIS, GROUPTHINK: PSYCHOLOGICAL STUDIES OF POLICY DECISIONS AND FIASCOS 9–10 (2d ed. 1983) (defining groupthink as “a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members’ strivings for unanimity override their motivation to realistically appraise alternative courses of action” and describing how it can result in “selective bias . . . in the way the group reacts to factual information and relevant judgments from experts,” who “show interest in facts and opinions that support their initially preferred policy . . . but . . . tend to ignore facts and opinions that do not support [the policy]”). For discussion of groupthink in the boardroom, see James D. Cox & Harry L. Munsinger, *Bias in the Boardroom: Psychological Foundations and Legal Implications of Corporate Cohesion*, 48 LAW & CONTEMP. PROBS. 83 (1985); and Sean J. Griffith, *Deal Protection Provisions in the Last Period of Play*, 71 FORDHAM L. REV. 1899, 1947–53 (2003).

³⁵² Significant committees, likewise, would need to be proportional, as indeed the regulators have suggested with regard to the nominating committee and, in the case of the CFTC, the risk committee. See *supra* text accompanying notes 259–67.

the German model, which effectively gives control in the case of a tie to the management board.³⁵³ Rather than allocating blanket authority to one side or the other to cast the deciding vote in all cases, this Article recommends allocating tie-breaking authority on an issue-by-issue basis. So, for all operational decisions, the tie-breaking vote would be allocated to a traditional director, but for risk-management issues—such as how the clearinghouse models the risk of derivatives instruments, what the clearinghouse requires of its members in terms of credit quality and contributions to collateral and reserve funds, and what products the clearinghouse accepts for clearing—the tie-breaking vote would be allocated to a supervisory director. This arrangement would allow each class of directors to be involved in all aspects of board decision-making but, in the (hopefully) rare case of persistent disagreement, create separate spheres of influence for each.

While some details remain to be specified, the thrust of this Article's proposals should by now be clear.³⁵⁴ Its central policy recommendation, simply stated, is to establish a separately elected class of directors who will remain accountable to the public interest in clearinghouse governance and whose authority will be generally coequal with those members of the clearinghouse board elected by the various commercial interests. Understanding that this is not the appropriate forum to pursue a finely tuned body of rules, this Article will recommend simply that the details follow from that basic statement of intent.

CONCLUSION

This Article has focused on the problem of systemic risk embedded in derivatives transactions and on the clearinghouses that Congress and the various regulatory agencies have engineered to solve it. The success or failure of the clearinghouse solution depends on how well these emerging institutions are governed, especially with regard to risk management. Unfortunately, the incentives of each of the parties most interested in clearinghouse governance

³⁵³ See *supra* note 327 and accompanying text.

³⁵⁴ Among the central details to be worked out is how exactly the supervisory directors ought to go about measuring and monitoring risk on a day-to-day basis. While this level of detail is beyond the scope of this Article, focused as it is on structural governance questions, recent work by Frank Partnoy, Mark Flannery, and Joel Houston suggests a market-based approach by which the risk manager would take into account not only changes in the value of the contracts held by the clearinghouse but also changes in value of any CDS contracts written on the clearinghouse's counterparties, thus using existing CDSs to provide an early warning of declining credit quality and potentially trigger additional collateral contributions. Mark J. Flannery et al., *Credit Default Swap Spreads as Viable Substitutes for Credit Ratings*, 158 U. PA. L. REV. 2085 (2010).

are skewed from the perspective of managing systemic risk. Moreover, the solution that the regulatory agencies have devised to respond to these incentive problems, focusing on voting limits and formal independence, fails adequately to address the underlying problem.

The underlying problem facing clearinghouse governance is pervasive free-riding created by the fact that the control of systemic risk has the character of a public good. Partially as a result of this pervasive free-rider problem, the incentives of each of the parties with a commercial interest in the clearinghouse are infected with moral hazard. All of this reflects the public-private nature of derivatives clearinghouses. They are privately owned institutions producing private benefits for their owners and participants, charged at the same time with the public good of containing systemic risk. Because none of the private parties can be expected to fully internalize the cost of this charge, none of the private parties can be wholly entrusted with responsibility for clearinghouse governance.

Because private parties cannot be trusted with this responsibility, this Article recommends the establishment of a separate body to protect the public interest in clearinghouse governance. To fully insulate this body from the commercial interests guiding other aspects of clearinghouse governance, this body must be accountable to a set of electors whose guiding concern is the control of systemic risk. A model for this body can be found in the board structure of the German public corporation, which has developed a system to render fully half of its top-level board accountable to a nonshareholder constituency. In the case of the derivatives clearinghouse, the nonshareholder constituency would not be employees but rather those agencies of government responsible for ensuring the containment of systemic risk in clearinghouses—the CFTC and the SEC, along with the Federal Reserve, the Federal Deposit Insurance Corporation, and the Treasury. These public bodies would be charged with electing half of the representatives to the clearinghouse board as a means of ensuring that the clearinghouse treats its public purpose as coequal with its private one.