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# Credit Default Swaps, Clearinghouses, and Exchanges

Squam Lake Working Group on Financial Regulation  
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The Squam Lake Working Group on Financial Regulation is a nonpartisan, nonaffiliated group of fifteen academics who have come together to offer guidance on the reform of financial regulation.

The group first convened in fall 2008, amid the deepening capital markets crisis. Although informed by this crisis—its events and the ongoing policy responses—the group is intentionally focused on longer-term issues. It aspires to help guide reform of capital markets—their structure, function, and regulation. This guidance is based on the group’s collective academic, private sector, and public policy experience.

To achieve its goal, the Squam Lake Working Group is developing a set of principles and their implications that are aimed at different parts of the financial system: at individual firms, at financial firms collectively, and at the linkages that connect financial firms to the broader economy.

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## *INTRODUCTION*

As its name suggests, the payoff on a credit default swap (CDS) depends on the default of a specific borrower, such as a corporation, or of a specific security, such as a bond. The value of these instruments is especially sensitive to the state of the overall economy. If the economy moves toward a recession, for example, the likelihood of defaults increases and the expected payoff on credit default swaps can rise quickly. The Depository Trust and Clearing Corporation (DTCC) estimates that in April 2009, the notional amount of credit default swaps outstanding was about \$28 trillion. As a result of the overall size of the CDS market and the sensitivity of CDS payoffs to economic conditions, large exposures to credit default swaps can create substantial systemic risk.

Because of this potential for systemic risk, some have argued that credit default swaps should be cleared through central clearing counterparties, or clearinghouses. This paper analyzes the market for credit default swaps and makes specific recommendations about appropriate roles for clearinghouses and about how they should be organized. Clearinghouses are not a panacea and the benefits they offer will be reduced if there are too many of them. Further, clearinghouses that manage only credit default swaps but not other kinds of derivative contract may actually increase counterparty and systemic risk, contrary to the assumption of many policy makers.

## *THE MARKET FOR CREDIT DEFAULT SWAPS*

A credit default swap can be viewed as an insurance contract that provides protection against a specific default. CDS contracts provide protection against the default of a corporation, sovereign nation, mortgage payers, and other borrowers. The buyer of protection makes periodic payments, analogous to insurance premiums, at the CDS rate specified in the contract. If the named borrower defaults, the seller of protection must pay the difference between the principal amount covered by the CDS and the market value of the debt. When Lehman Brothers defaulted, for example, its debt was worth about eight cents on the dollar, so sellers of protection had to pay about ninety-two cents for each notional dollar of debt they had guaranteed.

Although credit default swaps can be used as insurance against a default, the buyer of protection is not required to own the named borrower's debt or to be otherwise exposed to the borrower's default. Both buyers and sellers may use credit default swaps to speculate on a firm's prospects. Some have suggested that investors should not be allowed to purchase CDS protection unless they are hedging exposure to the named borrower. This argument is flawed. Buying and selling credit default swaps without the underlying bond is like buying and selling equity or index options without the underlying security. The advantages of these activities are well understood. Eliminating this form of speculation would make CDS markets less liquid, increasing the cost of trading and making CDS rate quotes a less reliable source of information about the prospects of named borrowers.

Credit default swaps are currently traded over the counter (OTC), rather than on an exchange. Each contract is negotiated privately between the two counterparties. CDS counterparties typically post collateral to guarantee that they will fulfill their obligations. (According to data from the International Swaps and Derivatives Association, about two-thirds of CDS positions are collateralized.) The collateral posted against a position is usually adjusted when the market value of the position changes. For example, if the estimated market value of a CDS contract to the buyer of protection rises—

perhaps because the probability of default rises or the expected payment in the event of default rises—the seller of protection may be required to post additional collateral.

### *CLEARINGHOUSES, COUNTERPARTY RISK, AND SYSTEMIC RISK*

Although credit default swaps can be valuable tools for managing risk, they can also contribute to systemic risk. One concern is that systemically important institutions may suffer devastating losses on large unhedged CDS positions. Counterparty risk, which arises when one party to a contract may not be able to fulfill its commitment to the other, is also a systemic concern. The failure of one important participant in the CDS market could destabilize the financial system by inflicting significant losses on many trading partners simultaneously. Derivatives dealers, for example, are on one side or the other of most CDS trades and, according to data from DTCC, dealers hold large credit default swap positions. If a large dealer fails, whether because of CDS losses or not, counterparties with claims against the dealer that are not fully collateralized may also be exposed to substantial losses. The immense losses *AIG* suffered on credit default swaps during the current crisis (and the resulting increase in the collateral it was obligated to post) are a more vivid example of systemic risk. Apparently, regulators decided to subsidize *AIG* after its losses because they feared that some of *AIG*'s CDS counterparties would be irreparably harmed if *AIG* were unable to fulfill its commitments. Of course, financial institutions try to control their exposure to such losses, but risk management can fail.

After two counterparties agree on the terms of a credit default swap, they can “clear” the CDS by having the clearinghouse stand between them, acting as the buyer of protection for one counterparty and the seller of protection to the other. Once the swap is cleared, the original counterparties are insulated from direct exposure to each other's default, and rely instead on the performance of the clearinghouse. Thus, with adequate capitalization, the clearinghouse can reduce systemic risk by insulating the financial system from the failure of large participants in the CDS market.

A clearinghouse not only insulates one counterparty from the default of another, it can lower the loss if a counterparty does default. Suppose, to pick an ideal example, that Dealer A has an exposure on credit derivatives to Dealer B of \$1 billion, before considering collateral. That is, if Dealer B fails, then A would lose \$1 billion. Likewise, B has an exposure to Dealer C of \$1 billion, and C has an exposure to A of \$1 billion. Without a clearinghouse, default by A, B, or C leads to a loss of \$1 billion. With clearing, however, the positive and negative exposures of each counterparty cancel, and each poses no risk to anyone, including the clearinghouse. In practice, counterparty exposures are to some degree collateralized. This lowers the potential losses from a default, but collateral is expensive and only partially offsets counterparty risk.

This simple example illustrates two important advantages of clearinghouses. First, by allowing an institution with offsetting position values to net their exposures, clearinghouses reduce levels of risk and the demand for collateral, a precious resource, especially during a financial crisis. Second, by standing between counterparties and requiring each of them to post appropriate collateral, a well-capitalized clearinghouse prevents counterparty defaults from propagating into the financial system. Because of these advantages, the U.S. Treasury Department has announced that in the future all credit default swaps that are sufficiently standard must be cleared.

Clearinghouses, however, are not panaceas. In the fight for market share, they may compete by lowering their operating standards, demanding less collateral from their customers, and requiring

less capital from their members. *To ensure that clearinghouses reduce rather than magnify systemic risk, regulatory approval requires strong operational controls, appropriate collateral requirements, and sufficient capital. Clearinghouses should be subject to ongoing regulatory oversight that is appropriate for highly systemic institutions.*

Most of the systemic advantages of a clearinghouse require standardized contracts. The CDS losses AIG suffered in the current crisis again illustrate the point. Most of their credit default swaps were customized to specific packages of mortgages and would not have met any reasonable test of standardization. As a result, they would not have satisfied the requirements for clearing under any of the current clearinghouse proposals. AIG's failure was driven by its concentrated position in credit default swaps and by the fact that its huge bets were not recognized or acted upon by either its regulators or its counterparties. Only better risk management by AIG, better supervisory oversight by its regulators, or clearer disclosure of its positions to counterparties would have prevented the AIG catastrophe, even if clearinghouses for credit derivatives had been in place years ago.

One should not conclude that a ban on nonstandardized contracts is appropriate. An important function of financial institutions and insurance companies is precisely to meet the needs of individual businesses and owners of specific idiosyncratic securities for nonstandardized contracts. However, those institutions and their regulators must regularly evaluate and hedge the systematic risks of their retail businesses, and not doing so was the central failure that led to the AIG fiasco. Standardized and especially indexed contracts are useful for institutions to hedge the exposures they generate from writing specific contracts for their customers, not a substitute for that activity.

*Because well-functioning clearinghouses can reduce systemic risk, financial institutions should be encouraged to use them to clear credit default swaps and other derivatives contracts. Banks and other regulated financial institutions should have higher capital requirements for contracts that are not cleared through a recognized clearinghouse.* Financial institutions should not be required to clear all their CDS trades. Such a requirement would stifle innovation and possibly destroy the market for all but the most popular CDS contracts. Appropriate differences between capital requirements for contracts that are cleared and contracts that are not cleared will create the right incentives for firms to internalize the costs created by nonstandard contracts.

#### HOW MANY CLEARINGHOUSES?

Although competition created by multiple clearinghouses might lead to lower clearing fees and technical efficiencies, important opportunities to net offsetting credit default swaps may be lost if clearing is scattered across several institutions. Two CDS clearinghouses in the United States and five in Europe have already been established or proposed. It would be difficult if not impossible to net long and short positions that are cleared through different institutions. In the example above, Dealer B will be unable to net its contracts with A and C unless both contracts are cleared at the same clearinghouse. (With sufficient standardization of contracts, collateral, and risk management, netting across clearinghouses might be feasible, but this is not part of any of the existing proposals.)

Other netting opportunities will be lost if clearinghouses are dedicated solely to credit default swaps. In addition to their CDS positions, the major dealers also have large positions in interest rate swaps and other OTC derivatives. Most credit default swaps are part of a master swap agreement in which the two counterparties net their aggregate bilateral exposure across multiple contracts. If two

dealers clear a CDS through the dedicated clearinghouse, they cannot net their exposure from this contract against their exposures from other non-CDS contracts.

The potential benefits from netting credit default swaps against other types of contracts are large. According to the Bank for International Settlements, dealer exposures on interest rate swaps, for example, are about three times larger than those from credit default swaps. Research by Duffie and Zhou suggests that, given the size of these and other OTC derivatives markets in 2009, a dedicated CDS clearinghouse would actually *increase* average counterparty exposures. In essence, if the clearinghouse is limited to only credit default swaps, the increased opportunities to net CDS positions within the clearinghouse are dominated by the lost opportunities to net CDS positions against other derivatives contracts outside the clearinghouse. Duffie and Zhou also demonstrate that, even if the introduction of a dedicated clearinghouse reduces average counterparty exposures, adding a second clearinghouse dedicated to the same class of derivatives must increase average exposures. Finally, any increase in average counterparty exposure will be accompanied by more demand for collateral (a scarce resource) and for contributions to clearinghouse guarantee funds. (In the United States, the CME Group's proposal integrates clearing of credit default swaps with financial futures, somewhat mitigating this concern. However, interest rate swaps continue to trade over the counter, and current proposals do not integrate them with CDS clearing.)

In short, widespread use of a dedicated CDS clearinghouse or fragmentation of clearing across several competing institutions will reduce the opportunities to net offsetting exposures. This will increase counterparty risk and, in turn, systemic risk.

A single clearinghouse for all OTC derivatives also has drawbacks. First, the competition created by multiple clearinghouses is likely to lead to innovation, more efficient operations, and lower cost. Second, even well-capitalized clearinghouses can fail. The failure of a clearinghouse for all OTC derivatives is likely to have enormous systemic consequences. *Despite these drawbacks, regulators and lawmakers should not intentionally or unintentionally promote the proliferation of redundant or specialized clearinghouses. The proliferation of clearinghouses would create unnecessary systemic risk by eliminating opportunities to reduce counterparty risk.*

## EXCHANGE TRADING OF CREDIT DEFAULT SWAPS?

Although clearing does not require exchange trading, some have suggested that CDS trading should be conducted only on exchanges, which offer clearing and superior price transparency. Because the current OTC market is relatively opaque, in many cases bid-ask spreads are likely to shrink if trading moves to an exchange. This benefit, however, should be weighed against the benefits of innovation and customization that are typical of the OTC market.

Most important, requiring exchange trading for all credit default swaps is impractical. Credit default swaps are traded on an enormous number of named borrowers and specific financial instruments. DTCC provides data, for example, on the outstanding amounts of credit default swaps on 1,000 different corporate and sovereign borrowers. Although the most actively traded default swaps, such as CDS index products, are natural candidates for exchange trading, many less active swaps would not be viable on an exchange.

An attractive alternative to mandatory exchange trading is regulation that improves the transparency of trading for more active and standardized CDS contracts in the OTC market. U.S. dealers trading corporate and municipal bonds in the OTC market must quickly disclose the terms of most

trades through TRACE, a reporting system maintained by the Financial Industry Regulatory Authority. Research by Edward, Harris, and Piwowar, Goldstein, Hotchkiss, and Sirri, Green, Hollifield, and Schurhoff, and Bessembinder and Maxwell suggests that dissemination of trade data through TRACE reduces the bid-ask spreads for some important classes of bonds.

A similar system in the CDS market would increase the transparency of trades and improve the ability of participants to gauge the liquidity of the market and of regulators to identify potential trouble spots. Although increased transparency can in some cases limit market depth and stifle innovation, the benefits of greater transparency for established and active standardized contracts almost certainly exceed the costs. Industry efforts to achieve greater transparency in the CDS markets have been helpful and should be pursued aggressively. These efforts have improved competition by increasing awareness of trade prices and volume, but they have not been as successful providing information about liquidity and trading costs. *Serious consideration should therefore be given to the introduction of a reporting system for the more active standardized index and single-name contracts, similar to the TRACE reporting system for corporate and municipal bonds.* If implemented judiciously, such a system would improve the quality of the market for these contracts.

## RECOMMENDATIONS

This analysis leads to four recommendations:

**Recommendation 1.** *Because well-functioning clearinghouses can reduce systemic risk, financial institutions should be encouraged to use them to clear credit default swaps and other derivatives contracts. Banks and other regulated financial institutions should have higher capital requirements for contracts that are not cleared through a recognized clearinghouse.*

**Recommendation 2.** *To ensure that clearinghouses reduce rather than magnify systemic risk, they should be required to have strong operational controls, appropriate collateral requirements, and sufficient capital.*

**Recommendation 3.** *Because the proliferation of clearinghouses would create unnecessary systemic risk by eliminating opportunities to reduce counterparty risk, regulators and lawmakers should not intentionally or unintentionally promote the proliferation of redundant or specialized clearinghouses.*

**Recommendation 4.** *Regulators should promote greater transparency in the CDS market for the more liquid and standardized index and single-name contracts. Consideration should be given to the introduction of a trade reporting system for these contracts similar to the TRACE system for corporate and municipal bond trades in the United States.*

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