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The Derivatives Dealers' Club and
Derivatives Markets Reform:
A Guide for Policy Makers, Citizens and Other Interested Parties

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The Initiative on Business and Public Policy provides analytical research and constructive recommendations on public policy issues affecting the business sector in the United States and around the world.

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Introduction

Mention the word “derivative” outside of a narrow circle of Wall Street and Chicago traders and other market participants, and you’re likely to get one or several of the following reactions: fear, anger, or disinterest. Warren Buffett has famously analogized derivatives – financial instruments whose value depends on and thus is “derived” from the value of some other underlying security, such as a stock or a bond or the current price of a commodity – as “financial weapons of mass destruction.” Who wouldn’t be afraid of such things? Or, if the widespread condemnation of derivatives for causing or helping to cause the recent financial crisis is accurate, who wouldn’t be angry at them? Meanwhile, those who might not care about the word or the complex issues it raises can be forgiven. After all, derivatives are difficult for non-experts to understand and seem unrelated to every day things most people really care about in times like these – such as their jobs and how they will be able to pay for their children’s education or their own retirement.

But whether you know it or not (or care), derivatives have become crucial parts of the financial and economic system not only in this country but elsewhere around the world. Derivatives such as futures and options contracts, and various kinds of “swap” arrangements (involving interest rates, foreign currencies, and loan defaults), provide efficient ways for both financial and non-financial users to hedge against a variety of financial risks. The numbers involved run into the hundreds of trillions of dollars in “notional” amounts, though the amounts actually at risk are substantially lower. Moreover, when properly used and backed by sufficient collateral, derivatives have become a valuable financial tool for banks and wide variety of end-users: corporations and private companies, state and local governmental entities, and so-called “buy-side” non-bank financial institutions.

Derivatives got their bad reputation during the financial panic in September 2008, when the world learned that if the parties to both sides of the transactions are large, financially connected with many other parties, and do not have the financial means to make good on their promises, derivatives that are traded “over the counter” (OTC) and not centrally cleared can pose

dangers to entire economies. The dangers are especially great for one kind of derivative contract on which I concentrate primarily here – “credit default swaps” (CDS). With CDS, non-defaulting parties (the buyers of this particular kind of insurance against loan or bond default) are likely, especially in an economy-wide crisis, to find it more expensive to replace their contracts with the defaulting party (the seller) than are non-defaulting parties in other OTC swap arrangements. Indeed, mainly for this reason, unless otherwise indicated, when I refer in this essay to “derivatives” I mean specifically CDS, although many of the arguments or claims I advance refer to other OTC derivatives as well.¹

Fortunately, there is a growing consensus among financial regulators and academic experts about what to do at least with respect to “standardized” derivatives, or those that resemble readily traded stocks or futures contracts, and thus how to help keep financial actors who are heavily engaged in derivatives activities and also run into financial trouble from infecting other institutions and conceivably entire markets. I will outline this consensus shortly, which may be enacted in some form by Congress this year as part of comprehensive financial reform.

I have written this essay primarily to call attention to the main impediments to meaningful reform: the private actors who now control the trading of derivatives and all key elements of the infrastructure of derivatives trading, the major dealer banks. The importance of this “Derivatives Dealers’ Club” cannot be overstated. All end-users who want derivatives products, CDS in particular, must transact with dealer banks. The dealer banks, in turn, transact heavily with each other, to hedge the risks from their customer trades and somewhat less frequently, to trade for their own accounts.

¹ In addition, many of the reforms of derivatives markets that I discuss in this essay do not refer to customized contracts, but rather only to “standardized” derivatives. As discussed below, corporate customers of the large bank dealers are more likely to have a greater need for non-standard derivatives involving interest rate or foreign currency swaps than they do for protection against loan defaults, or CDS, which typically have standardized terms.

I will argue that the major dealer banks have strong financial incentives and the ability to delay or impede changes from the status quo -- *even if the legislative reforms that are now being widely discussed are adopted* -- that would make the CDS and eventually other derivatives markets safer and more transparent for all

concerned. At the end of this essay, I will outline a number of steps that regulators and possibly the antitrust authorities may be able to take to overcome any dealer resistance to constructive change.

Executive Summary of the Essay and its Central Recommendations

For readers who want the bottom lines right now, I provide them in this initial Executive Summary. In the body of the essay itself that follows I begin by giving readers a brief overview of the basics of derivatives, the institutional characteristics of the markets in which they trade, and both their benefits and risks. I then turn to the major reforms now being considered by the Congress and that regulators have suggested or have been urging to reduce the

risks of OTC derivatives. I am uncomfortable, however, with one set of “reforms” that some have urged to reduce systemic risks in derivatives -- a ban or severe restriction on “speculative” purchases of derivatives, “naked CDS” in particular, and outline those concerns in a separate section.

The Ultimate Objective

The rough consensus about how to make derivatives market safer and more transparent contains the following features (If some of the following terms are new to you or seem vague, please wait, I'll be explaining them in the text of the essay):

-- Induce or require "standardized" derivatives to be "cleared" on central clearinghouses rather than handled by dealers, acting on behalf of each of the parties (the buyer and seller) to these contracts.²

--Establish the conditions that will induce derivatives that are centrally cleared to be traded on exchanges or an equivalent transparent platform, as is now the case generally with stocks and futures contracts.

--Ensure that adequate reserves – in the form of capital or margin – are held against all trades that are not centrally cleared.

--Require the margin or collateral backing derivatives positions to be held either in segregated accounts or by third parties (such as a central clearinghouse) so that these funds cannot be co-mingled with other assets of dealers.

--For derivatives that are both centrally cleared and traded on exchanges, regulators should ensure that the transaction prices and volumes of derivatives transactions are posted promptly on the equivalent of a "ticker" (post-trade transparency), while also ensuring that the prices at which buyers are willing to trade (the "bids") and sellers willing to sell (the "asks") are made public so that all parties, not just the dealers, know the state of the market at any given time (pre-trade transparency). I believe that a price ticker, or something close to it, should be in place even without central clearing and/or exchange trading.

In short, the ultimate objective should be to make current OTC derivatives look and trade like futures contracts, which are standardized instruments requiring (like OTC derivatives) future performance by both parties but are cleared centrally and traded on exchanges. Unlike futures contracts, however, which are tied to specific exchanges and their wholly owned clearinghouses, the presumptive markets for both the clearing and exchange trading of derivatives should be competitive, with the same instrument capable of being traded on different exchanges. For those contracts that are not centrally cleared, there must be sufficient reserve held against them to ensure that if one party defaults, the other party is not dragged down with it.

² Clearing refers to all of activities that are involved in confirming, monitoring and ensuring that sufficient collateral or margin is provided (where it is required) until a trade is actually settled (monies exchanged between the buyer and the seller). A "central" clearinghouse performs all these activities in one place, and acts as the legal go-between for the buyer and the seller. The distinction between "bilateral" and "central" clearing is discussed more fully in the body of this essay.

Where We Are Now

We are far from this ideal world today. Most derivatives are traded over the counter (not on organized exchanges or their electronic equivalent) by a handful of “dealer” banks that currently dominate these markets, and where there is only limited post-trade price transparency.³ To be sure, some limited progress toward central clearing of CDS has been made in recent months, with CDS contracts between dealers now being cleared centrally primarily through one clearinghouse (ICE Trust) in which the dealers have a significant financial interest. Nonetheless, virtually all end-users’ CDS contracts with dealers still are settled bilaterally, despite the presence of another clearinghouse (CME) specifically trying to enter this business. Progress has been made toward central clearing of interest rate swaps only between dealers on one major clearinghouse (LCH Clearnet, in which dealers also have a significant financial interest). There is still essentially no buy-side (institutional investor) central clearing or trading of CDS on exchanges or electronic platforms in the United States, although there is electronic trading of CDS in Europe, but so far exclusively between dealers.

Clearinghouses step into the middle of derivatives trades, becoming the buyer to every seller, and the seller to every buyer. By ending the bilateral relationships between the two counterparties to derivative contracts, central clearinghouses reduce the risk that the failure of any one party could trigger domino-effect losses on other counterparties. Clearinghouses protect themselves against their own failure, meanwhile, through several measures. They require both parties to the trade (currently the dealers, but ultimately also end-users who may eventually participate) to post initial cash margin and continuously update it through “variation margin” that is tied to the market value of the derivative. As backup, clearinghouses require members to contribute capital to a reserve fund. As further backup, clearinghouses assess their members for any losses the first two mechanisms might fail to cover.

Central clearing is important but not sufficient to bring fundamental reform to derivatives markets. To the maximum extent possible, derivatives

should be traded on exchanges (or their equivalents, such as on electronic platforms), just like futures contracts and stocks. This would have two benefits. First, exchange trading would further reduce systemic risk by exposing to the market in real time the volumes and prices of derivatives transactions, thus facilitating more accurate and timely margining by parties to derivatives contracts. In addition, exchange trading, coupled with true pre-trade and post-trade transparency, would narrow trading “spreads” (the difference between offers to buy and sell), and thus benefit the ultimate end-users of derivatives or investors. Indeed, it is possible if not likely that with more price transparency and exchange trading, many end-users would be able and would want to access trading platforms directly, without the need to use dealers as intermediaries, just as has happened with stock trading on electronic platforms. For this reason, notwithstanding the concern of some end-users that margin requirements on their derivatives transactions will make them more expensive, I conclude that it is in the end-users’ interest, both in the short and long runs, for all standardized derivatives to be centrally cleared and traded on exchanges.

This is not to deny the benefits of customized derivatives, which enable parties to refine their hedges to the very specific financial risks they may face, but which because they are not fungible or standardized cannot practically be subject to central clearing or exchange trading. There should and always will be a role for customized derivatives, especially for interest rate and foreign currency swaps which often are tied to very specific financial instruments. Indeed, U.S. hedge accounting rules encourage the use of customized instruments that match the derivative closely to specific underlying risks to which end-users of derivatives are exposed. Parties to these customized trades have incentives to require their counterparties to post margin or collateral to ensure payment. Nonetheless, because some users or dealers of customized contracts can be so interconnected with other parties that their failure may pose risks to the health of the financial system as a whole, regulators must ensure that capital and margins for the parties to these customized contracts take proper account of the potential externalities of the failure of certain counterparties.

³ The same logic supporting exchange trading of standardized derivatives applies to the trading of U.S. government and corporate bonds, which up to now has been conducted over the counter. But that is not my subject here.

Proposals for Change

In May 2009, the Obama Administration made central clearing and exchange trading of standardized derivatives a key part of its comprehensive financial reform package. In addition, the Administration proposed that regulators have the authority to set capital and margin requirements for non-standard derivatives for the reason just stated. The Administration's specific proposals are largely incorporated in the comprehensive financial reform bill passed by the House of Representatives in December, 2009. The Senate bill introduced by Banking Committee Chairman Senator Dodd in November 2009 and in revised form in mid-March 2010 has similar elements.

At this writing, however, several things are unclear. One uncertainty is the extent to which "end-users" of derivatives (institutional investors, state and local governmental entities, and many companies that use these instruments to hedge) and active market participants who will seek to portray themselves as end-users will be exempted from the clearing and exchange trading requirements or inducements. For

reasons I spell out below, efforts to carve out a broad "end-user" exemption should be resisted and any exemptions should be narrowly drawn. Regulators also should be able to counter subsequent efforts by derivatives traders to exploit any initial exemptions. In this regard, it is noteworthy that the Dodd bill has narrower exemptions than the House bill.

It is also unclear how much authority regulators eventually will be given over all features of the derivatives market. More broadly, while the odds of passage of a major comprehensive bill seem to have gone up since the enactment of health care reform, passage of a financial reform bill this year is still not a sure thing. In any event, even if a bill is enacted, a myriad of details still must be developed by the primary regulators that are likely to be charged with overseeing derivatives markets, the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC). This regulatory process is likely to take up to a year following the passage of any reform bill.

Resisting Change: The Derivatives Dealers' Club

Despite the apparent consensus among many experts about how to fix derivatives markets – by driving standardized derivatives to be centrally cleared, if possible traded on exchanges, in a far more transparent manner, and realigning capital and margin requirements to ensure appropriate risk reserves – there is one set of parties that is and has reason to be quite content with the status quo: the major dealers who now negotiate derivatives transactions. From the limited publicly available data (and it is limited precisely because the markets here are so opaque), the derivatives-related revenues generated by the major dealer banks are substantial, in the range of \$30 billion annually. Publicly available data do not indicate how these revenues translate into profits, but it seems safe to assume that dealers' derivatives trading profits are substantial. As I will show later, the dealers' dominance and thus significant profits earned in these markets is largely a product of the way that derivatives trading has so far been structured – as the outcome of dealer-to-dealer negotiations “over the counter” with very little price transparency. Where central clearing has occurred, meanwhile, it has been largely restricted to the inter-dealer market, rather than to the trades involving end-users or “buy-side” financial institutions, where the dealers are now always on one side of the trade and have incentives to keep it that way.

Separately, the dealers reportedly have a major financial stake in Markit, the only company that has direct and broad based access to CDS transactions data, and thus controls the extent to which those data are disseminated. In fact, as described below, the data that Markit does release are very limited and fall far short of the kind of information that now exists on stock and futures exchanges: publicly available bids and asks (pre-trade transparency), as well as virtually instantaneous reporting of actual trades (post-trade transparency). The dealers' financial involvement in Markit reduces incentives for them to support more transparency or to make their data (or Markit's) available to other data services. Likewise, dealers exert influence over the Depository Trade and Clearing Corporation (DTCC), the data repository for derivatives. DTCC should have the ability to collect and disseminate derivatives transactions prices, but given its joint data-related venture with Markit

(MarkitSERV), and likely dealer control of the governance of these facilities, neither party has an incentive to expand access to more complete and timely derivatives pricing information to the market that would compete directly with the limited data that Markit now makes available only to its subscribers.

In theory, the derivatives reform legislation now being considered by Congress, if enacted, is designed to overcome dealer resistance to meaningful reform. In principle, if the law says that standardized derivatives *must* be centrally cleared and traded on exchanges or their equivalents, then what can dealers still do to frustrate constructive change? Unfortunately, the answer is: too much. Although dealers (and others) have a point that inducements for central clearing and trading (in the form of lower capital charges on centrally cleared and traded derivatives and higher charges on non-cleared trades) are preferable to mandates, the dealers and certain end-users of derivatives still may be able to persuade Congress to exempt too many parties to derivatives trades from these requirements or inducements, which would enable the dealers to continue their “middleman” role in the markets. Further, even mandates must be applied to actual trading by regulators, and dealers have incentives to slow the application of those mandates to their business and to narrow their scope. The more the one entity that now dominates inter-dealer trading and in which the dealers have a financial stake and appear to have a significant role in governing, ICE Trust, is able to secure a monopoly on central clearing, the better able dealers will be to slow down both central clearing and exchange trading. Put simply, as long as ICE Trust has a monopoly in clearing, watch for the dealers to limit the expansion of the products that are centrally cleared, and to create barriers to electronic trading and smaller dealers making competitive markets in cleared products.

Perhaps most important, the current legislation would leave untouched, through their apparent significant ownership interests in Markit, the dealers' current control over derivatives pricing data. Pricing data is the “oxygen” that enables financial markets to thrive. As long as these data are controlled by the entities whose economic interest is to slow constructive reform, then users

of derivatives will continue to trade with less information than is now routinely available to participants in markets for stocks and futures, especially as long as many derivatives can be kept off exchanges.

For all these reasons, the dealers are thus likely to resist or drag their feet implementing changes that would reduce systemic risk in the financial system as a whole but that could significantly reduce the dealers' revenues and related profits from the current arrangement or that make these flows more volatile. This is so despite the apparent formal commitments of the dealers to the Federal Reserve Bank of New York to accelerate the central clearing of "eligible" derivatives, an elastic term primarily determined by central clearinghouses. In the case of CDS, however, central clearing is so far dominated by the one entity (ICE Trust) in which the dealers have a significant financial stake. ICE Trust thus has little incentive to expand central clearing to derivatives contracts where a non-dealer is on the other side of the trade.

Readers needn't take my word for the skepticism expressed here about the intentions or motivations of the major dealers. Consider the answer that current CFTC Chairman Gary Gensler reportedly gave at a meeting in January to an assemblage of bankers (mostly at the major dealer-banks) who asked the Chairman what he saw as the biggest obstacles to derivatives reform. Gensler replied: "You" (meaning the banker-dealers).⁴ To be sure, Chairman Gensler surely has his own motives for wanting reform, and people may have honest disagreements with his policy views. But I believe that Gensler, who has ample Wall Street experience of his own, is right on the mark in his assessment of where the dealers' economic incentives and interests really lie.

⁴ Quoted in Ian Katz and Robert Schmidt, "Gensler Turns Back on Wall Street to Push Derivatives Overhaul," *Bloomberg*, February 12, 2010.

Summary of Recommendations

So what can be done to overcome dealers' resistance to constructive change? I advance a number of recommendations in the concluding section of the essay, which I now briefly summarize.

As a threshold matter, I argue that the current regulators of derivatives markets – yes, there is regulatory authority over these instruments even though Congress enacted certain regulatory exemptions in 2000 – have authority to take a number of measures to ensure meaningful reform, regardless of whether Congress enacts some version of the House or the Dodd bills. These agencies include the Commodities Futures Trading Commission (CFTC), the Securities and Exchange Commission (SEC), the Federal Reserve Bank of New York (which already has been active in this area), and potentially the Antitrust Division of the Department of Justice (which already is currently investigating Market for possible antitrust abuses). I want to be clear: statutory reform remains essential, and generally speaking regulators should wait until Congress finishes its work on reform legislation. But regulators are not powerless even under existing law and should take action if legislative reform fails this year, and possibly in some cases even before.

First, as already hinted at, it is preferable to induce rather than require central clearing and exchange trading through the judicious use of capital charges on trades that are not centrally cleared or exchange traded. The Federal Reserve has this ability now and should use it, initially by seeking agreement on just this aspect of a new capital-based regulatory system for banks, from its counterparts in the United Kingdom and the European Union to prevent dealers from shopping their trades to the most advantageous (least onerous) jurisdiction. If a common derivatives capital rule cannot be quickly agreed upon, the Fed should move on its own. Establishing the appropriate risk-based capital-based incentives will more quickly produce the right market-based solutions that align with the broader social interest in reducing systemic risk from derivatives activities.

Second, once exchange trading of at least some CDS instruments gets underway, regulators could require the exchanges to implement both

pre-trade and post-trade transparency – that is, to post bids and asks, as well as actual transactions prices in as close to real time as possible. Even now, however, before CDS are actively traded, actual prices should be reported much more quickly than is now the case by central clearinghouses and/or trade repositories. It is possible, if not likely, that the SEC and the CFTC has sufficient authority to produce this result now even without legislative reform.

Third, regulators could compel governance reform of ICE Trust, the one U.S.-based derivatives clearinghouse, where dealers have a significant financial stake. Such reform is probably best pursued by the SEC and the CFTC. It should entail a requirement that all directors be independent of dealers. Congress would help by giving regulators the sole authority to set capital requirements and other rules for membership in all derivatives clearinghouses.

Fourth, regulators can and should impose a series of non-discrimination requirements. Clearinghouses (especially those like ICE Trust with a significant dealer financial stake) should be required to deal fairly and equally with non-stakeholder dealers, non-dealers (with sufficient financial strength, defined by the regulators, to join the clearinghouses), and exchanges. Dealers, derivatives clearinghouses (ICE Trust and CME), and data repositories (DTCC) should be required to make their pricing data available on equal terms to all vendors or pricing services. Such requirements (which may require the successful intervention of the Justice Department) would bring derivatives markets in line with securities markets. With respect to clearinghouses in particular, one desirable approach would be to establish multiple tiers of membership or its equivalent: tying the minimum capital threshold to the open positions of any member, perhaps above a certain size. If financial assessments are necessary because margins are not sufficient to cover the costs of failure of a large member, those assessments should be made proportional to a member's required contribution to the clearinghouse's reserve fund.

Fifth, if the antitrust authorities find broad abuses by dealers and/or entities they control or

in which they have a significant financial interest (ICE Trust, Markit, DTCC/MarkitSERV, and potentially other organizations) they could limit dealers to a minority, non-controlling ownership position in each of these entities, or even force the dealers to divest all of their current ownership interests, and take steps to ensure that these facilities are governed in the broader public interest. Such steps would ensure that the key infrastructure of the derivatives market – the institutions engaged in clearing, exchange trading and transactions reporting (pre and post)

– is competitively structured. This outcome would reinforce, and even conceivably substitute, for some of the above measures that, for any number of reasons, may not be implemented.

Taken together, the foregoing package of meaningful reforms to the derivatives market would make it far safer and more efficient, with lower bid-ask spreads, which would benefit end-users and the economy as a whole.

A “Cliff’s Notes” Guide to Derivatives

Before turning to the main arguments of the essay and especially solutions to the problems in derivatives markets, some brief background on derivatives, the infrastructure for trading them, and their benefits and risks, is useful to have. For more detail on these subjects, readers should consult an excellent recent survey on these topics in *The Economist*.⁵

Derivatives come in many different types, but they have one thing in common: in each case their value is derived from some other underlying or “reference” security or commodity. Futures contracts *require* the purchaser to buy (take delivery on) or sell (deliver) some item – at a fixed price at some future date. An option gives the buyer the *right* (but not the obligation) to do the same.

Both futures and options are traded on *organized exchanges*. Exchanges match orders to buy and sell, rather than having “dealers” in between who negotiate the transactions prices “over the counter” (OTC) (although exchanges may have “market-makers” or their functional equivalents to provide liquidity by taking the other side of trades when there is insufficient order flow from market participants).

All exchanges arrange for trades to be “cleared” (essentially validated) by a central clearinghouse which stands between buyers and sellers so that they don’t deal directly with each other, but with the clearinghouse in the middle. If parties have multiple offsetting trades, the clearinghouse is able to “net” the different positions against each other and thus bill or pay only these net amounts. This reduces the overall “gross” exposure of the clearinghouse relative to the total of the bilateral gross exposures of the parties to each other in the absence of a central clearinghouse. In this way, central clearing is likely to reduce the risks to the financial system from the failure of any of the parties to these trades.

Many futures exchanges own their own clearinghouses, which effectively limits the trading of particular contracts – whether for commodities, securities or baskets of securities (indexes) – only to those that are cleared by the clearinghouses owned by the exchange. Where this is the case, customers who want to buy or sell a particular futures contract must pick the exchange (and the clearinghouse) on which trading of that contract takes place. In principle, U.S. and foreign futures markets do compete with each other, offering customers some choice. But as a practical matter, futures products tend not to be fungible across markets and clearinghouses.

In contrast, stocks of individual companies are traded on multiple exchanges in the United States, but are cleared through only a single clearinghouse, the Depository Trust Clearing Corporation (DTCC).⁶ Each regional stock exchange used to have its own clearinghouse, but over time the clearinghouses were merged into a single one, DTCC. Similarly, all options are cleared through a single regulated utility, the Options Clearing Corporation, but options themselves are traded on multiple exchanges. Competition among these exchanges has not always been healthy, requiring an antitrust investigation and settlement by the Department of Justice in 2000 to bring about change. Justice has since noted that the “benefits of ... competition [among options exchanges] have been substantial and lasting.”⁷ Drawing on this experience (and other evidence), Justice has recommended to the Treasury Department that a similar approach be taken in futures markets – namely, that futures exchanges not be allowed to own clearinghouses, so that all futures clearinghouses (or any single one, if the futures clearing market reduces to one) will have incentives to deal with multiple exchanges (as in stocks and options).

⁵ “Over the Counter, Out of Sight”, *The Economist*, November 12, 2009 at www.economist/research/articlesBySubject/PrinterFriendly.cfm?story_id=14843.

⁶ The SEC has been directed by the Congress (as part of Securities Act Amendments enacted in 1975) to facilitate competition between exchanges through national market system rules for clearance and settlement.

⁷ Comments of The United States Department of Justice before the Department of the Treasury, TREAS-DO-2007-0018, at 17.

Swaps

In recent decades, a whole new genre of derivatives – “swaps” -- has been designed primarily by financial institutions initially to meet the customized needs for hedging by a wide range of both financial and non-financial corporations, and subsequently to serve, in many cases, as highly liquid and efficient means of transferring risks.

By far the most important of the swap arrangements, by “notional” volume, are interest-rate swaps, in which the parties swap different kinds of payment streams, such as those tied to a fixed interest rate for those tied to a rate that varies, or vice versa. At year end 2008, the notional total of interest rate swaps exceeded \$400 trillion, but the total amounts at risk – the annual payments that are actually exchanged – are far lower, less than 5 percent of the total notional amounts to which the payments refer. Of less importance are currency swaps (in which case the parties exchange payment streams denominated in different currencies), or swaps tied to the price of various commodities, especially oil, or to individual stocks or groups of them (represented by an index).

Perhaps the most controversial swaps are “credit default swaps” (CDS), because these contracts were at the heart of AIG’s financial difficulties (and also played significant roles in the failure of Lehman Brothers and the rescue arranged for Bear Stearns). In a CDS, the buyer makes regular payments over some fixed period (typically five years but as short as a single year and as long as ten years) to the seller, who pays the notional amount of the CDS if the issuer of the referenced obligation (such as a bond or a loan) defaults. CDS contracts are sold on the debt of single companies or countries, on specific issues of mortgage securities, or indices of these instruments. Although most of the adverse publicity and commentary about CDS arrangements refers to the “insurance” they provided for mortgage-related securities, in fact only about 1% of all CDS cover these instruments. Over 90% of CDS are written to cover corporate defaults (or corporate indices).⁸

⁸ Based on data reported by the Depository Trust & Clearing Corporation.

There are basically two types of buyers or users of swaps: those who want to hedge against certain financial risks, and those who want to speculate or bet on them. Both types of users depend on the other. Hedgers benefit from having speculators in the market because they deepen the pool of buyers and sellers. The same is true for speculators who benefit from the presence of hedgers in the market.

Even most critics of swaps concede their usefulness for hedging. For example, each of the parties to an interest rate swap want something that the other has – either a fixed or variable payment on an underlying loan or bond -- but want to get it without selling the underlying instrument. Currency and other commodities swaps may have a different maturity and other features that are not available with a current standardized future or option. There are multiple hedgers who purchase CDS: suppliers, customers and lenders, each of whom may be worried about the future ability of debtor to honor its commitments.⁹ According to a 2009 survey by the International Swaps and Derivatives Association, 94% of the 500 largest global companies use derivatives; over 70% of the U.S.-based non-bank corporations use interest rate or currency derivatives; and of U.S.-based banking companies, all use interest rate and currency swaps, while 88% use CDS.¹⁰

⁹ Dean Baker has argued that because lenders are in a better position to assess the risk of borrowers than sellers of CDS, the CDS backing loans represent a pointless transfer of risk that benefits no one but the CDS sellers. See Dean Baker, “Financial Innovation: What Is It Good For (II)? Credit Default Swaps, March 11, 2010 available at www.tpcafe.talkingpointsmemo.com. Baker may be right in some cases, but CDS sellers can also have specialized industry expertise that put them in a better position to assess risk than even the originating lender (admittedly that was not true for the mortgage industry, but as noted, mortgage-related CDS account for a tiny fraction of the overall CDS market). In any event, at least as of 2005, only 23 U.S. bank holding companies had any CDS positions, and on average, they hedged only 2 percent of their loans. See Bernadette Minton, Rene M. Stulz, and Rohan Williamson, “How Much Do Banks Use Credit Derivatives to Hedge Loans? *Journal of Financial Services Research*, 35(10), 2009, pp. 1-31. Furthermore, Baker’s argument has even less force when applied to other CDS purchasers, such as suppliers or customers who may not have any better information, and indeed possibly less, than sellers of CDS who specialize in that activity.

¹⁰ Data available on the ISDA website. www.isda.com.

Speculators in CDS (and other derivatives) – those who do not have economic interests in the referenced obligation – have been the main targets of criticism, unjustifiably so in my view. I spell out why in a later section of this essay.

In understanding how swaps markets actually work, it can be useful to distinguish between certain end-users, “buy side” participants, and dealers. End-users consist of parties who purchase or sell derivatives primarily for hedging purposes, notably private companies and state and local governmental entities. Buy-side participants include institutional investors (insurance companies and pension funds) and hedge funds, both to hedge and to speculate, just as retail and institutional investors buy stocks or bonds.

Buy-side participants and end-users (hereafter, unless otherwise distinguished, I will refer to both collectively as “end-users”) purchase or sell their derivatives through dealers, with whom they have a contractual relationship. In turn, dealers almost always “lay off” customer’s trades by entering into contacts with other dealers (whose clients take the opposite positions). In the CDS market, for example, such dealer-to-dealer transactions account for about 80 percent of all positions, and most of these net out against each other. For example, as of June 2009, the net exposures of dealers in CDS totaled \$3 trillion, compared to a gross “notional” total of \$23 trillion in dealer-to-dealer transactions (and a notional total of \$28 trillion for all CDS).¹¹ As I explain later, in a bilateral market, because all contracts require performance by counterparties over a long period, virtually all end-user trades are with bank dealers, generally the large ones perceived to be “too big to fail” (TBTF).

The dealer-based arrangements in the OTC swaps market are analogous to the way stocks used to be traded on NASDAQ before 1997, through dealers who have inventories of the stocks that they sell or buy, with prices set through the interaction of supply and demand in the market. In contrast, stocks traded on NASDAQ today or NYSEuronext are bought

and sold through a continuous auction, with no need for a dealer in between, with full price transparency, which is not the case in the OTC derivatives market. In many cases on both exchanges, however, stock orders that “match” or are placed “at market” are completed electronically. In other cases, market makers or their functional equivalents provide liquidity by taking the other side of trades when there are few or no orders from market participants.

As I discuss later, a relatively small number of dealers (all major banks or banking organizations) dominate the dealer-to-dealer trades of OTC derivatives. Historically, because these institutions are large and their credit was deemed to be good, dealers do not require each other to “post margin” or collateral to ensure payment. The dealers have many transactions with each other, many of which are offsetting, so they end up owing each other only the “net” amounts due. The 2008 financial crisis changed this somewhat, and now a higher number of dealer-to-dealer trades are “cross-margined”, though the margin levels are negotiated rather than set by any regulatory or objective standard. As a result, there is still uncertainty about whether margins on dealer trades are sufficient.

Dealers historically have required their customers, or end-users of derivatives, to post “initial” margin. But the dealers do not reciprocally post initial margin to customers. Both parties typically exchange “variation” margin (discussed in more detail soon), depending on the nature of the contract and its current price. As discussed below, however, the initial margin or collateral is not typically segregated in special accounts, and so the end-users must rely on the general financial health of the dealer to ensure payment. This reliance, obviously, failed when Lehman Brothers failed.

To add a bit of further complexity, certain corporate end-users have been permitted by dealers not to post initial margin, while variation margin also can be and has been waived where dealers judge the corporate customer’s financial position to be strong. When margin is waived, however, there may be significant amounts of unfunded receivables that cannot be recovered if either party defaults. While in certain markets, such as CDS, corporate end-users represent a relatively small share of overall market exposure, in other markets, such as interest rate swaps, corporate end-users are relatively much more

¹¹ Darrell Duffie, “The Failure Mechanics of Dealer Banks,” *Journal of Economic Perspectives*, Winter 2010, pp. 51-72, at 58. This article provides a superb discussion of the mechanics of dealer banks’ derivatives activities and the dangers they may pose to the banks and the rest of the financial system.

important. The implications of the margin waivers for corporate end-users are loudly debated. Some argue that corporate end-users did not cause the 2008 financial crisis and therefore should not be obliged to fund an increase in reserves (through margins) backing the system. Others argue that through margin waivers,

corporate end-users have been free-riding on others' margins and that so long as they don't post their fair share of margin, the dealer banks will remain too interconnected to fail. Put differently, the waiver of margin for corporate end-users externalizes the risks that these parties and their dealers pose to taxpayers.

Swaps (Primarily CDS) and Systemic Risk

As certain recent financial bailouts have highlighted, the current CDS market exposes the financial system to undue systemic risk if one or more of the large and interconnected participants in the market – especially the dealers – fails or runs into severe financial difficulty. Systemic risks also arise in the markets for interest rate and currency swaps, but appear so far to be less dangerous, even though these swaps are substantially larger in total volume than CDS, with current outstanding contracts of about \$25 trillion in notional value, down from a pre-crisis peak of over \$60 trillion (most of this reduction is due to “compression trades” which should effectively cancel redundant positions). In an interest rate or currency swap, if one party doesn't perform – that is, provide the payments it owes – the other party will do likewise. There will be some costs of replacing the failed swap, but these costs are likely to be much less, especially in a larger system-wide crisis, than the costs from the failure of a seller of CDS protection to pay off if required. In addition, central clearing of interest rate swaps, primarily through LCH Clearnet based in London, is much more extensive than for CDS, albeit only for transactions among dealers.¹²

In a nutshell, the systemic risks in the CDS market arise out of the bilateral nature of these contracts, which call for future performance by both parties. All derivatives entail some future performance, which distinguishes them from transactions in the “cash market” in which one party pays cash for a security or commodity and then the deal is done. In contrast, with a futures

contract, the party that buys or sells it must do something before the maturity date, which leaves the exchange or clearinghouse to which it is obligated exposed to the possibility of non-performance. To protect itself against that risk, futures exchanges require parties doing business with them to post “initial margin” (some small fraction of the market value of the futures contract) at the time of purchase or sale and then to update that amount (typically daily) with “variation margin” (or “maintenance margin”) if the value of the contract falls, exposing the exchange (and its clearinghouse) to greater risk.

In principle, dealers of CDS protection require counterparties to do something similar: to post “collateral” in some form in order to provide comfort that the parties can make good on their commitments. In some but not all cases, the collateral is placed in a segregated account so that it is not comingled with other funds of the CDS seller. In addition, the typical CDS contract requires the seller to post additional collateral (or margin) in the event of some event, such as a downgrade of the seller's credit rating, that reduces the likelihood that the seller could honor its commitment (the credit rating of the seller becomes especially important where the collateral is not segregated, since in that event the buyer of protection must look only to the general creditworthiness of the seller). From public accounts of the AIG affair, some purchasers of the roughly \$400 billion in CDS contracts it sold did not have collateral in segregated accounts, which meant that their “insurance” from AIG could have been worthless had the company become insolvent. Further, the proximate cause of AIG's downfall was the downgrade of its credit rating after Lehman Brothers failed, which triggered additional collateral obligations AIG could not meet.

The subsequent bailout of AIG highlighted the dangers of the bilateral nature of the CDS market

¹² At close to year end 2009, approximately 35% of the total amount of OTC interest-rate derivatives was being centrally cleared, though again only for dealer-to-dealer transactions. One study indicates that this figure could be raised to approximately 63% if all other eligible interest swaps were treated similarly. Darrell Duffie, Ada Li and Theo Lubke, “Policy Perspectives on OTC Derivatives Market Infrastructure,” Federal Reserve Bank of New York Staff Report No. 424, January 2010.

as it has developed, but this event is not the only factor that underscores these risks:

--According to an ISDA survey in 2007, only 63 percent of OTC derivatives contracts in general required collateral (although this figure was up from 30 percent in 2003).¹³ In contrast, all futures contracts require margin or collateral.

--As noted, the collateral required by dealers is not always segregated in special accounts available in the event the parties cannot honor their obligations under the swap. Margin posted by buy-side participants, meanwhile, is typically melded with the dealer's other working capital and used to support its general activities. Indeed, large dealers may have the leverage to extract considerable margin from some end-users, and in any event profit from the "spread" between what the dealers pay customers on any margin they post and earnings the dealers generate when investing those funds in higher yielding instruments.¹⁴ In other cases, as already noted, with some larger end-users, dealers may not insist on margin. The margin arrangements in the OTC derivatives market contrast with the typical futures contract which requires margin to be segregated.

--The collateral in CDS arrangements also has not always been in cash, and in these cases is not always easily sold by the collateral holder even if it is segregated. Since the financial crisis, however, over 80% of the collateral for OTC derivatives has been in cash.¹⁵ Futures margins are always in cash or cash equivalents (such as short-term Treasury bonds).

--Under current bilateral relationships, if a buy-side participant wants to transfer its position to a different counterparty – perhaps because it has lost some faith in the ability of the original counterparty to pay off – or to close out a position, the transfer or closeout requires the original dealer to consent, for which it typically charges an "unwind" fee.¹⁶ If derivatives contracts were cleared centrally, the clearinghouse could effect the transfer to a

willing alternative clearing member through a book entry without charging an unwind fee, or could simply close out the transaction by entering into an offsetting trade that would net out all or part of the first one. Instead, to avoid the unwind fee in the bilateral market, participants enter into offsetting contracts with different counterparties. While this neutralizes their market exposure, it also doubles overall counterparty exposure in the market.

--When asking for collateral, firms and their counter-parties take account (understandably) only of the risks that the parties to the individual swap may not be able to pay them. Buyers do not factor in the "externalities" of either parties' inability to honor their contracts, namely the potential cascade of losses that one party's default could impose directly on other parties, as well as the potential indirect impacts of these losses on the counterparties of other buyers. It should also be noted that there is no data collection or monitoring system in place for identifying or quantifying these interrelationships (an omission that, in principle, could be corrected if Congress creates a "systemic risk monitor", or failing that, if the current President's Working Group on Financial Markets establishes such a system).

--Under the "master swap agreement" provisions of CDS instruments set by International Swaps and Derivatives Association (ISDA) – an entity I discuss in more detail below – if two parties to a CDS have offsetting obligations to each other relating to CDS or other swap arrangements, these are "netted" so that the obligor is required only to pay the net amount due (rather than have each party pay its "gross" obligation to the other). But these netting arrangements are only bilateral. If party A owes party B as a result of a CDS, but A is hedged and is in a position to collect from C, all of these bilateral commitments must be honored. If instead all of the parties had entered into their CDS contracts with a central clearinghouse (also to be discussed shortly), C would owe B directly because A's offsetting (or hedged) positions would be netted out.

Beyond these well-known differences between futures contracts that are centrally cleared and traded on exchanges, on the one hand, and the largely bilateral nature of the OTC market in CDS, on the other, there are also marked differences in "transparency" in the two markets

¹³ Cited in Stulz, at 81.

¹⁴ Michael J. Moore and Christine Harper, "Goldman Sachs Demands Derivatives Collateral It Won't Dish Out," *Bloomberg*, March 15, 2010.

¹⁵ International Swaps and Derivatives Association, "ISDA Margin Survey" (ISDA Technical Document, 2009).

¹⁶ In addition, when a transfer is made, any net gains or losses on the instrument need to be settled at that point.

that have important implications both for systemic risk and market efficiency (which are closely interrelated).

Unlike futures exchanges or stock markets, which provide continuous information about transactions prices and volumes, for CDS contracts there is only one source of after-the-fact pricing information and even then the data are not actual transactions data. What limited CDS price and volume data that now exist are published at the end of each trading day by Markit, which collects and compiles the transactions data reported to it by dealers at the end of each day (or frequently earlier, because not all trading desks make the cut-off for all their transactions and thus report stale prices from the day before). Markit then reports back essentially an *average* price for those transactions. When there is no objective central price (like those provided on a stock ticker), dealer desks are not required to mark their books to reflect actual transactions prices. Instead, they mark according to what they deem their positions to be worth. Markit's pricing service – providing an effective average of such dealer marks and some actual, but late, transactions prices – by definition cannot be indicative of the latest market values of specific CDS contracts. *At bottom, neither Markit nor anyone else (because they lack access to the dealer price data) provides purely actual transactions prices in anything close to a timely manner.*

Furthermore, there is no pre-trade transparency with OTC derivatives. End-users do not know the equivalent of the bid and ask prices, again especially for CDS, but must rely entirely on the price at which dealers claim to be able to purchase or sell a particular instrument. In theory, end-users can shop around at the five major dealers, but in practice and as a general rule, dealers will not, even for standardized derivatives, provide a firm quote, but instead will just give an “indicative” or conditional price: “if you give me the business, I will try to get you such and such a price.” Even though dealers send out “runs” to their customers -- indicative bids and offers on a range of instruments -- the actual price the dealer will transact with is entirely subject to bilateral negotiation, on the phone or in some electronic email-like exchange. The

dealer is free to change the price until the moment the trade is mutually closed.

This process is clearly inefficient, especially in the CDS market where \$2.5-5 trillion of contracts (notional amounts) are traded every month. As a result, end-users are totally dependent on their dealers – often *a* particular dealer with whom they regularly conduct business – to get the best price they can for their customers. End-users and buy-side participants cannot know whether that price is the best one, since there is no pre or post trade transparency: they don't know what other parties are willing to pay or to sell at, nor do they have comparable real-time price data against which to compare the price of their particular trade.

Such an opaque environment is an ideal one for the few dealers who currently dominate the derivatives markets. The less their customers know, the wider the spreads or markups they can earn. This state of affairs not only fails to protect the interests of investors or end-users, but it has systemic consequences. Where collateral or margin is required, systemic risks are reduced the more frequently and more accurately those amounts are calculated. Daily “marks” based on end-of-day average prices (not all of them transactions-based) subject all parties to derivatives transactions – and the financial system as a whole – to greater risks than if all parties had access to true bid and ask prices before trades are conducted, and to actual transaction prices on a close to real time basis after trades are completed.

Though central clearing is likely to reduce systemic risk for reasons already given, even further reduction of risk would be brought about by improving the limited price transparency that now exists so as to further improve the accuracy and timeliness of market-based data to “mark” derivatives positions. At a minimum such improvement would be accomplished by publication of *actual transactions data* at the end of each day, or even more frequently. Ideally, however, the markets would be better served and systemic risks reduced if CDS and other current OTC derivatives began, as a matter of course, to be traded on exchanges, and firm pre-trade bids and asks were publicly available.

Recent Derivatives Market Reform Initiatives: Public and Private

Fortunately, at least in some quarters, the need for major derivatives market reform is well recognized. This is reflected in the Administration's reform proposals and in the

Congress. The New York Fed also has taken important steps to encourage reform, which has had some positive effects. These initiatives are reviewed in turn.

Administration and Congressional Reform Proposals

In May 2009, the Obama Administration proposed, as part of its comprehensive financial reform legislation, to reduce systemic risks and to enhance transparency in derivatives markets through a series of provisions aimed at driving all "standardized" derivatives to central clearinghouses and exchanges, requiring margin to be placed in segregated accounts, and all trades to be recorded in "trade registries." In December, 2009, the House of Representatives responded by passing a comprehensive reform bill that clearly was influenced by the Administration's proposals, but with broad exemptions for trades where one of the parties is not a dealer.

In particular, the House bill would *require* the central clearing of all trades between dealers involving standardized OTC derivatives. What constitutes a standardized instrument would be determined by regulators (the SEC in charge of derivatives tied to securities or narrow indices, with the CFTC overseeing all other derivatives), though the bill would establish a presumption that all derivatives of any class that a clearinghouse accepts for clearing would have to be cleared. Presumably, this would mean that if one clearinghouse accepted a 5-year CDS on, say, the bonds of ATT, all such CDS would have to be centrally cleared. In principle, however, it would appear under the House bill that regulators could be more aggressive in requiring central clearing if they wished.

The House bill also would require all standardized derivatives that are centrally cleared to be traded on an exchange, or its equivalent, a Swaps Execution Facility (SEF).¹⁷ The bill does not clearly define an SEF and this issue is still being debated in Congress. It is possible that a voice brokerage facility would qualify, which in

my view would be a mistake, because it would not materially differ from the typical OTC arrangements now. In defining the term, Congress should try to limit or analogize the SEF to the Electronic Communications Networks (ECNs) that have electronically matched the buy and sell orders for stocks since they were created in the mid-1990s. It is noteworthy that ECNs came into their own after the SEC issued "order handling rules" in 1997 that required brokers to post their customers' bids and asks for the public to see, following an investigation of the dealers in this dealer-market (very much analogous to the current OTC derivatives market, but in the case of CDS with far fewer dealers) for fixing the bid-ask spreads.¹⁸ The SEC also greatly facilitated the growth of ECNs through its Regulation ATS (Alternative Trading Systems) that permitted ECNs to operate like exchanges but register as broker-dealers with few additional requirements. Once bid and ask information was transparent, trades on matching orders could be completed electronically.

The House bill also would charge derivatives regulators with additional duties. Normally, clearinghouses themselves set margins, but the House bill would enable regulators to set capital and margin requirements for parties to customized OTC derivatives contracts that are not suitable, by reason of their heterogeneity, for central clearing or exchange trading. These provisions are aimed at preventing a future AIG, whose failure was due largely to its inability to meet collateral calls on its customized CDS.¹⁹ At the same time, the House bill would not require

¹⁷ The Dodd bill refers to these entities as Alternative Swaps Execution Facilities.

¹⁸ Specifically, the SEC's Limit Order Display Rule requires market makers to display investors' limit orders (those specifying a minimum acceptable sales price or maximum acceptable purchase price) that are priced better than the market maker's quote. The Commission's "Quote Rule" requires market makers to publically display their best quotes.

¹⁹ Duffie, at 67.

regulators to set margins on customized derivatives where one of the parties is not a dealer or “major swap participant.”

The major financial reform bill that the Senate is now likely to take up – the latest proposal by Senator Dodd, Chairman of the Senate Banking Committee – contains derivatives reform proposals that are similar to those in the legislation already enacted in the House and to those in an earlier bill proposed by the Chairman in November 2009. Like the House bill, Chairman Dodd’s bill spells out a procedure for regulators and clearinghouses to determine which contracts should be cleared, and requires both the SEC and the CFTC to pre-approve contracts before clearinghouses can clear them. In addition, Dodd’s bill requires clearinghouses or “swap repositories” to collect derivatives transactions data, though it is not clear how such information will get to the market and how frequently (these topics presumably would be the subjects of further regulation).

So far, the most contentious aspect of either the Dodd or the House bill relates to what standardized derivatives and/or which participants or purposes would be exempt from mandatory clearing (and thus eventually exchange trading). Both bills would exempt derivatives in which one of the parties is not a swap dealer or a “major swap participant,” or if the transaction was entered into to hedge financial risks. But the Dodd exemption looks narrower, since it would apply only if a clearinghouse would not accept the parties to the trade. A party thus would not get an exemption simply virtue of its size or hedging activities. In addition, the House bill would allow end-users of derivatives to use non-cash collateral to meet any margin requirements set by counterparties. The exemptions are there to respond to complaints by major corporate end-users of derivatives, who have asserted that mandatory clearing would require them to post more cash margin than is required of them now, increasing their costs of using derivatives.²⁰

As a matter of substance, however, the corporate end-users are wrong. Current amounts of initial margin (to the extent that dealers impose them

on end-users) are generally too low because they do not take account of the externalities their failure may impose on the rest of the financial system (AIG being a classic case of this). At the same time, however, end-users are paying higher implicit fees to dealers – in the form of larger bid-ask spreads -- for completing their derivatives trades than would be the case if standardized derivatives were generally cleared and eventually traded on exchanges, with greater price transparency. In addition, greater price transparency, for reasons already given, would reduce systemic risk. Accordingly, end-users as a group are likely to be better off, even with higher explicit margins, if there were no exemptions at all.

In fact, the definitions of the exemptions in the bills of parties that are not swap dealers or major swap participants could be exploited. Financial regulation is fraught with many examples of “financial innovations” that have successfully circumvented the best-intended rules (as well as a number of socially counter-productive rules).²¹ If the past is any guide, it is likely that teams of attorneys at the dealer banks, some hedge funds, and other derivatives markets participants that want to avoid mandatory clearing are already busy now trying to figure ways to fit within the exemptions in the current bills (perhaps through innovative definitions of exempt “hedgies” or “major swap participant”). One way to prevent this regulatory “gaming” or “arbitrage” is to allow the SEC and CFTC broad freedom to change the definitions of both key terms – “swap dealers” and “major swap participants” – to prevent parties from circumventing the spirit of the laws, which are to drive more derivatives to central clearing and exchange trading (though, again, I would prefer that this be done through capital surcharges on non-cleared and non-traded derivatives rather than through mandates). Other ways to mitigate gaming include: permitting end-user exemptions only if their total non-cleared exposures fall under some dollar threshold; allowing end-users to demand central clearing if they want it; and requiring an end-user that is a public company to have its decision to use non-cleared swaps reviewed by the audit committee of the company’s board.

²⁰ As discussed in the text earlier, in some cases, dealers do not require corporate end-users to post any margin at all (perhaps as a “loss leader” to gain other banking business from them).

²¹ This is one of the themes of my recent “In Defense of Much, But Not All, Financial Innovation,” Brookings Institute website, February, 2010, available at http://www.brookings.edu/papers/2010/0217_financial_innovation_litan.aspx/

Another concern with the current derivatives reform bills is that they would direct regulators to *require* central clearing and trading of standardized derivatives. There are several problems with mandates, and for reasons now outlined, I believe that at most they are better framed as a last resort “stick in the closet” that the SEC/CFTC could use in the event other approaches to accelerating the clearing and trading of standardized derivatives do not work out.

To begin, if the contracts required to be cleared turn on what “standardized” instruments the clearinghouses accept for clearing, then the regulators could be put at the mercy of the dealers who now control, or at least heavily influence, the current dominant CDS clearinghouse, ICE Trust. As discussed shortly, despite commitments the dealers have made to clear virtually all of their “eligible” contracts, the dealers lack incentives to maximize the volume of such instruments subject to clearing. Presumably, the authority the bills would give regulators to mandate clearing is designed to correct this problem. But this would put regulators in the position of second-guessing the market, and either erring on the side of not pushing hard enough, or pushing too hard to force clearing for instruments that really are insufficiently standardized. In the latter event, regulators would put clearinghouses at greater risk, and thereby cause them to raise fees higher than may be necessary.

All that being said, if faced with a choice between mandating clearing and exchange trading, it would be better to do the former than the latter. A mandate that cleared derivatives be traded on an exchange or ASEF may be compelling outcomes that should not or cannot be forced because the liquidity required to make exchange trading might not be there. In addition, premature compulsion of trading of derivatives could reduce incentives for parties in the market to develop new or customized derivatives that eventually, once standardized, could move to exchanges. But if these products are still-born the market, by definition, would never benefit from them.²²

None of this should negate the fact that there is considerable potential for exchange trading in derivatives. This is evident from the experience

in Europe, where an estimated 75-80% of swap indices and 30-40% of the single-name swaps are already traded electronically between dealers through various electronic trading platforms (BGC Partners, Blackbird Holdings, Compagnie Financiere Tradition, Creditex, GFI Group, Icap and Tullet Prebon).²³ Electronic trading of derivatives in Europe is far more advanced than in the United States most likely because CDS trading is spread among many more dealers operating in different countries than is the case with the highly concentrated market in the United States where a relative handful of dealers can more tightly control the market through old-fashioned telephone conversations. This disparity in electronic trading between Europe and the United States shows both that electronic trading of derivatives is possible and that it is important to implement the policy initiatives described later for opening up the U.S. markets to more clearing, exchange trading and price transparency.

The foregoing flaws with attempting to *force* electronic trading where it may not be appropriate explain why at least some academic economists who have studied this market generally seem to prefer using capital charges as a way of harnessing market-like incentives to encourage the major dealer banks to use and clear standardized derivatives. Specifically, a substantial capital penalty on non-standardized positions -- say, three to four times the capital requirement against any position in standardized instruments -- would more properly recognize the systemic risks posed by custom derivatives and in the process help overcome the incentives dealers otherwise have to limit standardization and hence clearing volume. The same is true for a capital penalty applied to cleared derivatives that are not exchange traded (beginning with CDS). Incentives are more likely to lead to outcomes that market participants actually want than potentially cumbersome and lengthy regulatory determinations.

But even though capital regulation should better incent bank-dealers to clear their own derivatives with each other, it may not crack dealers’ unwillingness to submit their trades with end-

²² Duffie, Li and Lubke at 10-11.

²³ Shane Kite, “Manual Market: Swapping Electrons for Paper, in Credit Default Contracts Paper Plain: Default Pacts Resisting Electronics,” FinReg21, at <http://www.finreg21.com/news/manual-market-swapping-electrons-paper-credit-default-contracts-paper-plain-default-pacts-resis>.

users to central clearing. The latter would expand the volume of derivatives that is centrally cleared and thereby make it easier for regulators (and end-users themselves) to demand that centrally cleared products also be exchange traded, an outcome that is not in the dealers' economic interest. Moreover, any capital penalties adopted by U.S. regulators unilaterally would simply drive derivatives trading to other locations, most likely London or Frankfurt.

Since the financial crisis, bank regulators belonging to the Basel Committee and the G-20 have been working to refine the Basel II bank capital standards, and specifically to include an additional capital charge for non-cleared and/or non-traded derivatives. The Basel II process is a very cumbersome one, however. It took the Committee roughly a decade to agree on a revision of the Basel I standards, and by the time the project was completed, the financial crisis of 2007-08 had erupted. Despite the crisis or near-crisis atmosphere since those events, neither the Committee nor the G-20 has yet produced a final revision of the Basel II rules. Indeed, if anything the United States and the European Union remain considerably at odds over how to proceed with financial reform generally, let alone with respect to derivatives.²⁴

Given this record, the United States would be far better off if our bank regulators worked with a limited number of counterparts – specifically, regulators in the United Kingdom and the European Union who already are working on derivatives rules comparable to those now being discussed in this country -- to reach agreement on a common set of capital surcharges for non-cleared and/or non-traded derivatives. This work should speed ahead and hopefully reach a prompt conclusion well before any final agreement on the whole package of bank capital requirements is agreed upon by the Basel Committee and/or the G-20. Indeed, agreement by a core group of countries, led by the United States, on just the capital regime for derivatives should help pave the way for wider agreement on that issue within the larger bodies (just as agreement between the United States and the United Kingdom on essentially what became Basel I helped pave the way for the full Committee to establish those first capital standards).

Indeed, the international agreement suggested here on capital requirements for cleared/non-cleared and traded/non-traded derivatives should be pursued immediately and regardless of what happens on the legislative front. If a satisfactory deal is reached before Congress acts on the comprehensive bill, then the mandates in the current versions of the bills may still be necessary or helpful, but the market will move much more rapidly of its own accord to a safer structure. If no capital deal is reached soon, then mandates become an essential “stick in the closet” that the SEC/CFTC must bring out and impose to ensure that major dealers follow through fully with their clearing commitments made to the New York Fed discussed next, and that further essential improvements to the clearing and trading of derivatives continue to be made.

²⁴ See Howard Schneider and David Cho, “U.S., Europe at Odds Over Global Financial Reform,” *The Washington Post*, March 13, 2010, p. A1.

Reform Initiatives of the New York Fed

It is not clear at this point whether Congress will be able to agree on a comprehensive financial bill that is acceptable to the Obama Administration, and what precise derivatives market reform proposals such legislation would contain. One particular federal agency, the Federal Reserve Bank of New York, has not been waiting for reform to be legislated, however, and for several years has been pushing the major derivative dealer-banks on a number of fronts.²⁵

In 2005, for example, the New York Fed initiated and accelerated efforts by the major dealer-banks to clear up extensive backlogs in the recording and processing of derivatives trades. This led to the creation in 2006 of an extensive derivatives trade data repository at the DTCC. The ratio of unconfirmed trades to new credit derivatives transactions has fallen to less than one in 10, a marked decrease from pre-initiative levels (though the New York Fed should continue to work with the dealers and the DTCC to entirely eliminate unconfirmed trades).

The New York Fed has also been encouraging the dealers to clear “eligible” credit derivatives, or those sufficiently standardized to be suitable for clearing. Thus, in September 2009, each of the major bank-dealers committed to clear at least 95% of new eligible derivatives trades (calculated on a notional basis) by the beginning of October 2009, while collectively all dealers committed to clear 80% of all new eligible transactions. The bank-dealers made roughly similar commitments with respect to the clearing of interest rate swaps.

The latest commitment by the major dealers is reflected in a letter they and selected buy-side representatives sent to the President of the New York Fed on March 1, 2010. In that letter, the signatories announced their commitment to increase the range of products eligible for clearing and the proportion of their total products that are cleared; that they were exploring further opportunities for standardizing derivatives; and were undertaking studies of ways to improve transparency. The letter contained no new numerical commitments and no specific product roll-outs, nor did it make any promises about moving to the disclosure of actual transactions prices, let alone firm offers to buy or sell derivatives.

While the New York Fed is to be commended for moving the dealers as far as they have, the dealers still have committed only to advance the clearing of “eligible” derivatives. Since the dealers control the committees that determine what is “eligible” on the one clearinghouse that dominates inter-dealer trading, there is no guarantee or incentive for the number of cleared products to expand rapidly. Further, since even with centralized clearing, all derivatives are still traded over the counter – with dealers on at least one side of every transaction – the dealers still very much control the market, with very limited price transparency. More to the point, as discussed shortly, *only five dealers* are on at least one side of almost every OTC derivative trade. The impacts of this high degree of concentration, coupled with dealer control of the other key elements of the derivatives market infrastructure, are critical subjects I also soon address.

²⁵ For a more detailed summary, see Duffie Li and Lubke (2010).

Recent Developments in Derivatives Clearing

Within the last year, two entities have engaged in the clearing of CDS in the United States. The overwhelmingly dominant presence in the CDS clearing market is ICE Trust, a limited purpose trust company that is a subsidiary of ICE, a publicly-traded multinational company operating five clearinghouses in the United States, Europe and Canada. In March 2009, ICE acquired The Clearing Corporation, which had been one of the oldest clearinghouses in the world and was owned by dealer banks. TCC developed the technology for clearing CDS (including the setting of initial and variation margin), which is now used by ICE Trust. According to public reports, some number of bank-dealers (presumably those who controlled or were heavily invested in TCC) share in 50% of the clearing revenues of ICE Trust. ICE Trust began clearing CDS in North America in March, 2009.²⁶

ICE Trust was designed from the outset essentially as a “dealers only” clearing body since it requires all clearing members to have at least \$5 billion in capital to join.²⁷ This capital threshold, ostensibly justified for risk management reasons, effectively keeps out smaller dealers and brokers, and end-users who would wish to clear directly. As just noted, the dealers that formed the predecessor to ICE Trust, The Clearing Corporation, may have done so at behest of the New York Fed, which wanted centralized clearing of CDS and also had supervisory jurisdiction over its banking members. Alternatively, the dealers looked at ICE Trust as a way to stave off the threat of other clearing platforms, such as CME or Eurex, that have more open membership criteria. Nonetheless, because of the exclusive nature of the entity and the financial interest in its performance that dealers maintain, the main dealer-banks have used ICE Trust to clear all of their dealer-to-dealer transactions. As of late March, 2010, ICE Trust had cleared over \$4.4

trillion in notional CDS, of which only about 1/10 (\$460 billion) were buy-side trades.²⁸

The sole remaining competitor to ICE Trust for US CDS is the clearinghouse of the CME Group. The CME clearinghouse opened its doors in December, 2009. CME is a public company and owns its clearinghouse, although it reportedly has entered into some arrangement to share some CDS clearing revenues with a founding dealer group. CME’s greater independence from the dealers, however, is arguably one reason that dealers do not use CME for clearing. Bank dealers may also fear that having trades cleared through CME will accelerate the movement of derivatives to exchange platforms, which threaten the dealers’ dominance in trading activity.

It is not just the hurdles to direct participation in clearing that have frozen the buy-side. Every buy-side institution wants competition and believes it to be beneficial, but no single buy-side party wants to put a substantial amount of its own money into a structure that may fail. As it is now, there is significant uncertainty relating to the margin requirements and transactions costs for cleared products involving buy-side parties. As the signatories to a March 1, 2010 letter to the New York Fed have stated: “Remaining impediments to the expansion of buy-side access to [central] clearing include legal and regulatory, risk management and operational issues.”²⁹

The capital threshold at CME of \$500 million, however, is much lower than on ICE Trust, which means that at least in principle, CME is more open to buy-side participants and end-users of derivatives than ICE Trust. Indeed, knowing that ICE Trust probably would have a lock, at least for an initial period on the dealer-to-dealer derivatives transactions, CME’s lower capital requirement allows it to target all CDS trades in which a dealer is only one side of the trade, and then perhaps later as its volume increases, use better prices and service to bring in the dealer-to-dealer transactions. So far, however, this strategy has yet to pay off (perhaps because of the other factors suggested in the previous paragraph, and also possibly due to CME’s own growing pains).

²⁶ Data and information in this section about ICE and its subsidiary operations are drawn from the ICE website, unless otherwise indicated.

²⁷ Again, according to the ICE website, there were 16 clearing members in ICE Trust as of October, 2009. All were banks, bank holding companies, or entities that belonged to bank holding companies.

²⁸ See the website of ICE Trust:
https://www.theice.com/ice_trust.jhtml

²⁹ Annex C, page 10.

As of mid-March, 2010, the CME clearinghouse had cleared less than \$200 million in end-user CDS.³⁰

In short, there been no real progress on either CME's clearinghouse or ICE Trust on central clearing of CDS involving non-dealers, a market the dealers have long controlled. Nor has there been any progress toward the central clearing of interest rate swaps.

ICE Clear Europe began clearing index CDS in July 2009, and has since followed by accepting single name CDS. Through the end of 2009, total notional volume cleared had exceeded \$800 billion Euro.³¹ Like ICE Trust in the United States, ICE Clear Europe is supported by the dealers.

In theory, the clearing market for all kinds of OTC derivatives, including those with end-users or buy-side participants on one side of the trade, is substantial. Morgan Stanley analysts have estimated that within 2 to 3 years, 63% of all dealer-to-dealer derivatives transactions, 64% of dealer-to-buy side (institutional purchases), and 13% of corporate-to-end-user transactions are or will be sufficiently standardized so as to be cleared by some entity.³²

Morgan Stanley's 2-3 year clearing projections are even more optimistic for CDS in particular: 75% of all dealer-to-dealer and dealer-to-buy side CDS, and 58% of end-user CDS. This is most likely because customers have less need for customized protection against loan default than they do for interest rate and foreign currency swaps which reference more customized financial instruments and their related cash flows. Corporations are relatively small users of CDS.

The foregoing projections must implicitly assume that the major derivatives dealers who have committed to clear almost all of their "eligible" derivatives interpret "eligibility" expansively and/or will encourage the use of standardized CDS. I will argue shortly that given their incentives under current market rules and structure, dealers are unlikely to do this. The Morgan Stanley projections (or any other similarly optimistic projections) about the volumes of clearing are likely to become a reality, at least in my view, only if some combination of the policy measures I recommend at the end of this essay are implemented.

³⁰ Matthew Leising and Shannon D. Harrington, "Wall Street Dominance of Swaps Must End, Brokers Say (Update 1)," *Bloomberg*, March 16, 2010.

³¹ Leising and Harrington report that a European entity, LCH Clearnet operates the world's largest clearinghouse for interest rate swaps. Like ICE Trust, it has minimum capital requirements of \$5 billion, and also requires members to have at least \$1 trillion in outstanding swaps business.

³² Morgan Stanley Research North America, "CME Group Inc.," December 15, 2009.

Why Not Ban/Restrict CDS Speculation?

Some believe that central clearing and exchange trading of derivatives will not be sufficient to eliminate or significantly reduce the systemic risks posed by CDS instruments in particular, specifically “speculative” purchases of these contracts by those with no economic interest in the underlying debt or reference instrument. Speculative CDS purchases have been criticized on two grounds, so far with greater force in Europe than in the United States. I address each of these here before identifying the key obstacle to meaningful derivatives market reform in the next section.

First, it has been argued that because CDS is essentially “financial insurance” these contracts should not be purchased by those without an insurable interest. The analogy is property-casualty insurance sold on a house. Insurance laws do not permit people to buy insurance on *other* residences that they do not own, most likely because these “speculative purchasers” would then have an incentive to burn other houses down in order to collect the insurance money. In the financial world, the analogue would be a campaign to purchase a sufficient amount of the CDS on a particular company’s debt (even a country’s debt, Greece, for example) to raise the price of the CDS so high that it scares some combination of creditors, suppliers or customers away from doing business with the company, effectively forcing it into bankruptcy. Second, a related concern is that large and growing amounts of CDS outstanding substantially in excess of the amounts of underlying debt have contributed to the interconnectedness between and among banks and other financial (and possibly non-financial) institutions that caused Federal officials to bail out the creditors of AIG and other financial institutions.³³

Speculators in all types of financial transactions have attracted suspicion and outright criticism for centuries; trading in derivatives is no exception. But the critics ignore several benefits of speculation, even in the CDS market.

First, speculators provide the other side of transactions for hedgers, who without parties

willing to guess and attempt to profit from changes in prices in these contracts (or in any other financial instrument) would find it much more difficult to buy or sell at the prices they prefer.

Second, a related benefit is that speculators, by adding volume to the CDS market, make it more liquid. Other things being equal, more liquid markets have narrower “spreads” – the difference between “bid” and “ask” prices – though because it is dominated by a small number of dealers without any pre-trade transparency and limited post-trade transparency, CDS spreads are still almost certainly higher (and probably much higher) than they should be. But even so, without parties willing to speculate, CDS spreads would be even higher.

Third, by enhancing liquidity in CDS markets, speculators can improve the informational value of CDS, which signal the likelihood of future financial difficulty of the referenced issuer in ways that bonds and equities do not and cannot capture. Trading in an issuer’s bonds is generally thinner than that on its CDS contracts; furthermore, CDS contracts may cover obligations other than bonds that are not frequently traded. Meanwhile, although a company’s stock is likely to be traded in more liquid markets than its bonds, because stockholders benefit from the upside in a company’s performance and thus not only care about its downside, they are likely to be less risk averse than either bondholders or holders of CDS positions. Accordingly, equity prices are likely to be less sensitive to a company’s potential adverse financial prospects than are the prices of CDS contracts on its debt.

As a result, CDS prices provide useful, additional market-based signals to multiple parties: to investors, to analysts, and to the managers of the entities on which the CDS are issued.³⁴ The signals can also be used by regulators as early indicators of financial stress at particular financial institutions. These are all reasons why CDS markets are important for market discipline, even for governments which

³³ See, e.g. Gretchen Morgenson, “It’s Time for Swaps to Lose Their Swagger,” *The New York Times*, February 28, 2010.

³⁴ See generally Rene M. Stulz, “Credit Default Swaps and the Credit Crisis,” *Journal of Economic Perspectives*, Winter 2010, pp. 73-92, at 75.

run excessive deficits that investors are unwilling to fund.³⁵

Fourth, it is inappropriate to criticize speculators in CDS who don't own or have an economic interest in the underlying or referenced securities for that reason, because the same is true is for options. Indeed, options exist, in part, so that parties do not need to own the underlying securities in order to hedge against or speculate about their future price. That options offer cheaper – and, yes, more leveraged – ways to hedge or bet on price movements does not make them evil. That is their economic rationale, and they could not deliver the benefits of risk reduction to the parties who use them for that purpose if they were not inexpensive to use.

You needn't take my word for this last point in particular. An assemblage of some of the leading academic scholars in finance, the "Squam Lake Working Group on Financial Regulation" of the Council on Foreign Relations had this to say about critics of so-called "naked swaps":

"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 [such as they are] a less reliable source of information about the prospects of named borrowers."³⁶

Even if one doesn't accept the foregoing benefits of speculative purchases of CDS or believe they are of sufficient magnitude to offset the potential dangers of these transactions, the "fixes" to derivatives trading now broadly being discussed, if implemented, would address most of the legitimate worries about the fallout or "externalities" from CDS speculation. Central clearinghouses have strong incentives to establish sufficient margin or collateral requirements, tied to the market values of the

derivatives, to protect themselves and thus the financial system against the failure of one or more large members or end-users. In addition, clearinghouses can reduce their risks by netting offsetting derivatives contracts. Taken together, both margining and netting address the fears that speculation-driven derivatives activity can lead to an unhealthy degree of financial interconnectedness.

As for concerns that CDS can be used to drive companies into bankruptcy, there are laws, at least within the United States, that prevent *collusive* activity of that sort. Both the securities and antitrust laws (in the United States and typically in other countries) punish agreements to manipulate financial markets.

This leaves the possibility that a lone speculator could use CDS to accomplish the same result, much as George Soros was famously alleged to have done in 1992 with his massive bet against the English pound, which eventually forced that country to devalue its currency – yielding Soros a profit in excess of \$1 billion. What is to stop Soros or someone like him from using CDS to do something similar to any company with outstanding debt?³⁷

Actually, the fundamentals stand in the way of this happening. If a company is truly healthy, there will be parties on the other side of a single speculator's purchases of CDS – that is, sellers of CDS contracts – who will have a basis for betting that a massive bear raid of this type is likely to be unsuccessful. Even Soros could not have been successful had the fundamentals in the British economy in the early 1990s not signaled an eventual devaluation of the pound. I nonetheless recognize that in thinly traded markets – for example, the debt of a smaller company -- it may be possible for a single speculator to use its purchases of CDS to precipitate a proverbial "run on the company" by some combination of its creditors, suppliers, or customers. For this reason, I can see the case for giving some regulatory body the authority to set

³⁵ CDS prices have risen even on U.S. Treasury debt, even though long-term interest rates so far have remained relatively low. One of these indicators of stress has got to be wrong, but I will let readers decide which one. This is what markets are for.

³⁶ Squam Lake Working Group on Financial Regulation, "Credit Default Swaps, Clearinghouses, and Exchanges," Council on Foreign Relations, Center for Geoeconomic Studies, July 2009.

³⁷ The famous bets on the collapse of the subprime mortgage market that CDS contracts afforded – recently publicized in some popular accounts -- should not be confused with allegations that CDS enables speculators to bring about the events that trigger sellers of CDS to pay off. See Gregory Zuckerman, *The Greatest Trade Ever: The Behind The Scenes Story of How John Paulson Defied Wall Street and Made Financial History* (New York: Broadway Business, 2009) and Michael Lewis, *The Big Short* (New York: W.W. Norton, 2010).

position limits (which the House derivatives bill would do), provided they are geared to the size of a particular market, or alternatively minimum margin (or maximum leverage requirements) for derivatives purchasers.

In short, policy makers should be wary of attacking “speculators” in the CDS market (or any other financial market) for causing distress, when in fact they are more likely to be early messengers of bad news rather than saboteurs.³⁸ In addition, so-called speculators provide additional liquidity to markets that reduces spreads and facilitates the trading of hedgers in particular. The legitimate dangers that derivatives may entail, meanwhile, can and should be addressed through centralized clearing.

³⁸ For example, the widely publicized efforts by many to blame speculators in CDS on debt issued by the Greek government may not be grounded in fact. A study by Germany’s financial regulator released in early March found that the net volume of outstanding CDS on Greece’s national debt had remained unchanged since January, 2010, rebutting the view that there had been massive speculation in CDS that was driving up the interest rates on Greece’s debt (the more obvious cause being Greece’s large public deficit as a share of its GDP). See Stephen Fidler, Gregory Zuckerman, and Brian Baskin, “Swaps Come Under Fire,” *The Wall Street Journal*, March 10, 2010, p. A8.

The Derivatives Dealers' Club

Policy makers intending to bring about central clearing and exchange trading of derivatives, whether by legislation or regulation, may have overlooked one major stumbling block to effective reform, *even if these reforms are implemented in some fashion*. There are parties with a significant presence in derivatives markets – indeed, some would say a dominant presence – for whom central clearing, and certainly exchange trading and greater price transparency, is not in their economic interest. Here, of course, I refer to the major derivatives dealers – the top 5 dealer-banks that control virtually all of the dealer-to-dealer trades in CDS, together with a few others that participate with the top 5 in other institutions important to the derivatives market.³⁹ Collectively, these institutions have the ability and incentive, if not counteracted by policy intervention, to delay, distort or impede clearing, exchange trading and transparency.

Before explaining why, it is useful to understand how the OTC derivatives market – CDS trading in particular -- got to be so concentrated in the first place. Initially, swaps (including CDS) were developed by large banks to transfer the credit risks on their commercial loan portfolios and to reduce their amounts of regulatory capital. In addition, the banks sold similar instruments to end-users to meet their customized hedging needs. Given that the CDS contracts in particular obligated the sellers to pay off potentially substantial amounts – the face value of the underlying debt – in the event of default, end-users, and later buy-side participants (institutional investors, including hedge funds) wanted the comfort of knowing that they were dealing with large, well-capitalized financial institutions that could honor these obligations.

The subsequent development of the CDS market only reinforced the dominant positions of the top five bank-dealers. With more buy-side and end-user demand, there were greater needs for the bank-dealers to trade among themselves in order to lay off risks that they (the banks) didn't want.

The banks became true market-makers: finding parties on both sides of different trades, and making money on the spreads. It is also possible that there are significant economies of scale in derivatives trading, which would contribute to concentration. And the large banks, wanting to be sure that they would be paid if the defaults triggering payment on their CDS contracts came to pass, had incentives to deal only with other large banks that, like them, also were likely viewed to be TBTF (The financial crisis and the government responses to it, of course, only made explicit these implicit beliefs in the TBTF nature of the large bank derivatives dealers).

Market-makers make the most profit, however, as long as they can operate as much in the dark as is possible – so that customers don't know the true going prices, only the dealers do. This opacity allows the dealers to keep spreads high. In addition, in cases where the dealers ask customers for margin, they are able to profit from the “spreads” on these funds too: paying the customer a low rate and investing the (comingled) funds in higher yielding instruments. Collectively, the dealers profit handsomely from both these related activities. Through the third quarter of 2009, reports of the Comptroller of the Currency indicate that U.S. commercial bank dealers alone had \$21 billion in revenue from their derivatives dealing activities. On an annualized basis, this translates into \$28 billion; if the revenues from the top non-U.S. bank-dealers were factored in total derivatives trading revenue surely would top \$30 billion annually. There are no publicly available data indicating how these revenues translates into profits, but it seems a safe assumption that once costs of doing business are subtracted, profits from derivatives trading are still substantial.

Central clearing and other steps to which it could and should lead – exchange trading and greater price transparency – would threaten these revenues, potentially in a big way, for several reasons. Even clearing alone brings price transparency, since clearinghouses at least once a day publish the settlement prices (based on actual transaction prices) they use to determine margin. If end-users know recently traded actual prices, they have bargaining leverage vis-à-vis the dealers who up to now have been the only parties with access to this data. In

³⁹ According to numerous public reports and to data compiled by the Office of the Comptroller of the Currency, the top five banks or bank holding companies account for 96-97% of the derivatives trades made by the top 25 bank holding companies. See Leising and Harrington; Comptroller of the Currency, *OCC's Quarterly Report on Bank Trading and Derivatives Activities, Third Quarter, 2009*.

addition, dealers make more money from customized trades, and thus to the extent that central clearing (either mandated or induced) drives more trades to be standardized, dealers will earn less money per deal. In addition, to the extent that clearinghouses or the law require the dealers to put margin monies in segregated accounts, they will lose their ability to profit from the reinvestment of these funds. Dealers can be expected to make up for the loss in revenue due to margin segregation by trying to widen bid-ask spreads, but they may find this difficult or impossible to do if pricing is made more transparent.

It is quite possible, if not likely, that as a group, the dealers could make up on higher volumes of derivatives trades what they would lose from lower spreads. In fact, there is evidence that trading volumes increased in response to the lower spreads on NASDAQ following the introduction of the SEC's order handling rules.⁴⁰ Economic logic also points in this direction: demand for trading should go up as trading costs (in the form of spreads) go down.⁴¹ But dealers face the risk that any additional volume will not make up for the possibly steep reduction in bid-ask spreads in a more transparent trading environment. For this reason, dealers are likely to resist, or at least not be as aggressive in promoting central clearing and exchange trading as, say, buy-side participants who want both low trading costs and the comfort of having central clearing to reduce their own exposures to systemic failures from non-performing derivatives counterparties.

Central clearing also confronts the dealers with the proverbial slippery slope, at least to them. This is because trading is likely to increase once systemic risk is reduced by central clearing. More trading, in turn, should thicken markets for particular CDS, and thus provide the liquidity that is needed for exchange trading. And once contracts are traded on exchanges, parties will have a demand for more price transparency. If markets don't deliver that result, then regulators can and should. With more price transparency,

there will be less systemic risk because "marks" are more timely and accurate, and of course, even more liquidity.

Systemic risk also would be reduced with true derivatives market reforms that would have the effect of removing the balance sheet advantage of the incumbent dealers now most likely regarded as TBTF. If end-users know that when their trades are completed with a clearinghouse, they are free to trade with *any* market maker – not just the specific dealer with whom they now customarily do business – that is willing to provide the right price, the resulting trades are more likely to be the end-users' advantage. In short, in a reformed market, the incumbent dealers would face much greater competition. While the overall "pie" of derivatives trading is thus likely to grow, the existing TBTF dealers very likely will have to compete harder to retain their current share of it.

All of these outcomes are good for investors, the buy-side and end-users of derivatives, but not necessarily for dealers as a group if the buy-side and end-users are able to directly access exchanges and clearinghouses. In that latter event, dealers would be cut out of the standardized derivatives market entirely, and would have to make their money instead on coming up with customized trades where their market-making services still would be essential. Professor Duffie has summarized it well: "Dealers, however, reap substantial profits from OTC trading, and have little incentive to foster the migration of trading from the OTC market to exchanges, even after a derivative product achieves a high level of standardization and breadth of investor activity."⁴²

It is understandable, of course, why the main dealer-banks would not want such a world to come about, and thus individually each of them has reasons to slow or resist change, their commitments to clear virtually all new "eligible" derivatives notwithstanding. For reasons spelled out earlier, those commitments fall far short of the kind of cleared, exchange traded, and transparent environment that would be in the best interest of the financial system and the economy as a whole.

⁴⁰ Thomas H. McInish, Bonnie F. Van Ness, and Robert A. Van Ness, "The Effect of SEC's Order Handling Rules on NASDAQ," *Journal of Financial Research*, Fall 1998, pp. 247-54.

⁴¹ As noted earlier in the text, end-users urging an exemption from mandatory clearing for fear that their margin-related costs would go up miss the fact that they are already paying those costs in the form of higher spreads than necessary.

⁴² Duffie, "How Should We Regulate Derivatives Markets?" at 14.

In making these commitments, and indeed in responding to the New York Fed's entreaties to work for a better derivatives world, the dealers have necessarily met and worked together. But this is not the only example of their collective activity. In fact, each of the major aspects of the infrastructure of the derivatives market is controlled by or is heavily influenced by the same major dealer-banks, perhaps with a few supplemental less active dealers, who are all active in these venues, and whose activities reinforce the effectiveness of each of the others:

Standardization: The derivatives market reforms that have been the central subject of this essay all require the development and use of standardized instruments. The body that has developed those standards – perhaps best illustrated by the “master swap agreement” that governs most OTC derivatives – is ISDA (formerly the International Swap Dealers' Association). From what I understand, ISDA's activities are very much influenced by representatives of the major dealer-banks (although ISDA's board of directors has been expanded in recent years to include buy-side and corporate end-users).

Clearing: As already should be clear, the major dealer-banks have a strong financial interest in the revenues earned by ICE Trust. On the one hand, one would think this would give the dealers incentives to have ICE trust maximize the volume of clearing through that entity. But the dealer-banks surely derive much greater revenues from their *own dealer activities*. Their strong financial participation in ICE Trust therefore enables the dealers to influence ICE Trust not to act in ways that could impair dealer revenues – for example, by allowing multiple tiers of membership at ICE Trust that would give smaller brokers, buy-side participants or end-users direct access to the clearinghouse without having to use the dealers. In addition, the dealers do not have incentives for ICE Trust to deal with multiple trading platforms that would undercut spreads, and also give non-dealers ways of trading without using dealers. The dealers also have similarly influential roles in the risk committee of ICE Trust, where they have another venue for delaying progress.

Price Transparency: Again, as already noted, Markit's basic CDS pricing service only makes available end-of-day average prices reported by Markit, another entity in which major dealer-

banks are significant shareholders.⁴³ In some cases, the averages reflect prices that are even earlier, since dealers that do not make the end-of-day cutoff use stale prices from the day before.

Markit also has a joint venture with ICE Trust that produces daily settlement prices on products cleared on ICE Trust. The ICE Trust website states that its clearing participants are required to submit prices on a daily basis, and that ICE Trust conducts a daily auction process to determine these prices. My understanding is that the joint venture has a process for interpolating settlement prices where there is no match between the offers to buy (bids) and to sell (asks). The net result is apparently some combination of actual and interpolated settlement prices. This a limited form of post-trade transparency, since the reported data are aggregate and only end-of-day. There are no pre-trade prices – bids and asks – available for CDS anywhere to my knowledge. To the contrary, as described earlier, no dealer will quote a firm bid or ask; all prices are indicative or conditional.

In principle, DTCC, which is the data repository for most derivatives trades, either has the ability to derive transactions prices from the data it already has and receives, or should have be able to collect actual transactions prices from market participants that the DTCC or another service provider, under license, presumably could provide more broadly. But DTCC and Markit, both of which are influenced by dealers, also have recently entered into a joint venture, “MarkitSERV,” which according to the entity's website “combines the flagship electronic trade confirmation, position reconciliation and related workflow patterns from its parent companies to provide a single gateway for over-the-counter (OTC) derivative transaction processing globally.” Given this arrangement, any effort by DTCC to make its data widely available to other data vendors or service providers would run counter to Markit's economic interests.

⁴³ According to its website, Markit is a privately held company headquartered in London “owned by company employees, private investors, and numerous buy- and sell-side financial institutions.” However, media reports indicate that major bank-dealers have significant ownership stakes, and indeed may be among the largest shareholders. See Matthew Leising, “Market Credit-Swap Services Said to Be part of Antitrust Probe,” *Bloomberg*, August 3, 2009. One of Markit's own documents discussed shortly in the text, “Markit Interest Rate Curve XML Specification” also not only acknowledges but clearly advertises the benefits of its “privileged relationships” with 16 bank shareholders.

Moreover while ISDA's website materials applaud the transparency that DTCC makes possible, the basis for these claims in part is that DTCC refreshes its CDS data *weekly*. This is not the kind of price transparency one sees on other comparable markets – virtually instantaneous ticker reports on stocks and futures, for example, or daily settlement prices for a wide range of OTC cleared derivatives.

In emphasizing the importance of price data, I am not criticizing DTCC's decision to report only aggregate data on CDS volumes and exposures to the public, but see no good reason why price and volume data should not be reported daily. Reporting can be done in a way that ensures that there is no disclosure of positions of individual parties. However, there is a very strong case for having such party-specific information as trades, prices, and positions being reported, in confidence, *to regulators* – especially any authority charged with systemic risk oversight – so that regulators can gain a better idea of the risk exposures of key parties and financial interconnections between them.

Markit also has been quite open about – and indeed advertises the advantages of – its relationships with the major bank-dealers (which, as I have already noted, have been reported to have significant ownership stakes in Markit). In a document entitled “Markit USD Interest Rate Curve XML Specification”, Markit speaks of its “privileged relationships with 16 shareholder banks”, which the company says gives it “unparalleled access to a valuable dataset spanning credit, equities, and the broader OTC derivative universe.”⁴⁴ These statements implicitly, if not explicitly, acknowledge the barriers to entry to other potential entrants into the derivatives data business, whether from DTCC or other entities. In addition, the “privileged relationship” language could be meant to refer to the possibility that Markit provides its pricing data (such as it is) to its owners, or perhaps a subset including the dealer-banks, before it divulges the same data to its general subscribers of its data services. It is impossible to know from publicly available data, however, whether this is the case.

Summary: In combination, these various market institutions – relating to standardization, clearing

and pricing – have incentives not to rock the boat, and not to accelerate the kinds of changes that would make the derivatives market safer and more transparent. The common element among all of these institutions is strong participation, if not significant ownership, by the major dealers.

I am not in a position to know to what extent the dealer banks have taken coordinated action to prevent improvements, or even more competition in each of these component activities: standardization, clearing and pricing. But at least one allegation of concerted activity is in the public domain. Most notably, in June, 2009 it was reported that BlueMountain Capital Management asserted in a letter to the New York Fed that some of the world's largest bank-dealers were attempting to prevent or discourage others from using the CME Group's derivatives clearinghouse, which then was planning to compete with ICE Trust, the clearinghouse in which the dealers have a major financial stake.⁴⁵

Interestingly, one recent report in Europe about dealer involvement in derivatives markets infrastructure expresses the opposite concern of the one voiced here. In February, 2010, the EU's Parliament's Committee on Economic and Monetary Affairs issued an advisory report on this subject, prepared by Werner Langer of Germany, in advance of the Parliament's upcoming consideration of legislative reform of the OTC derivatives market. That report feared that dealers could pressure an existing clearinghouse to relax its margin requirements or otherwise face the threat that dealers would form a competing, dealer-organized clearinghouse that would maintain such lower requirements. Perhaps that is a real concern in Europe, and it is a conceivable outcome, but here in the United States, given the already significant financial stake the dealers have in ICE Trust, such a threat would appear to be unnecessary. Rather, the potential concern here is whether the dealers could use ICE Trust to blunt the competition from CME or any other clearinghouse in which the dealers are not involved, or overall to raise margin levels to increase the costs of clearing to end-users well above the costs of bilateral trades.

The dealers have every right under our Constitution (and under the *Noerr-Pennington* doctrine under the antitrust laws) to make their

⁴⁴ Available through www.cdsmodel.com (under “Documentation”). The document is dated March 30, 2009.

⁴⁵ Matthew Leising, “Banks Block CME Credit-Swap Plan, BlueMountain Says (Update 2)”, *Bloomberg*, June 1, 2009.

views known on matters of public policy, to resist legislative reforms that would open up the derivatives market, and to finance the campaigns of elected officials who will be making decisions about these reforms in the Congress. But the dealers are not protected by any law (indeed they would be violating the antitrust laws) if they collectively act through any one of the entities already described, or through other means, to restrain competition in clearing and/or frustrate exchange trading of derivatives and further price transparency.

A natural question arises, however: suppose Congress does enact something like the provisions that are now in the House bill and the Dodd bill designed to accelerate the clearing and trading of standardized derivatives. Would this solve the problems created by the dealers' incentives to slow the adoption of these initiatives?

Possibly so, but then also possibly not: dealers still would have incentives to respond to the legislation by emphasizing or encouraging more

customized derivatives with their end-users, while not putting forward to the SEC/CFTC other derivatives for a "clearing" determination. The legislation would give the regulators authority to override these decisions, but regulators may be reluctant to second-guess ICE Trust or any other dealer-influenced clearinghouse if it were to argue that the instruments are not sufficiently standardized. And even if the dealers did not mount such opposition and more trades were centrally cleared, dealers can still make it more expensive for end-users to clear than to effect bilateral trades. Further, it is still not clear how long it would take for enough liquidity in the cleared products to develop to permit exchange trading, especially where the dealers would retain incentives to slow this process down. Finally, while the legislation may force more registration of trade data, until and unless actual transactions data is reported in close to real time the market and its derivatives participants will be deprived of information they should be getting but are not in the current environment.

Dealing with the Club

So if the presence of the Club is a problem, what is the solution? I consider here several alternatives, which should not be viewed as mutually exclusive, but rather could be mutually reinforcing. Before delving into the details of the proposals, it is important to step back and consider what the ideal outcome would be, both in terms of reducing systemic risk and serving the interests of end-users (and therefore market efficiency).

From the foregoing discussion, this much should be obvious: that standardized derivatives should be cleared centrally, and to the maximum extent possible, traded on exchanges. Once exchange trading exists, information about bids and asks should be publicly available in real time (or close to it) so that end-users can deal directly with exchanges (perhaps with brokers on their behalf), while all completed transactions data should be available virtually instantaneously (analogous to current stock-ticker transparency).

Because competition is the bedrock principle upon which all capitalist economies are based, policy should seek to promote competition in both clearing and exchange trading. This may require prohibitions on derivatives exchanges owning clearinghouses (or vice versa), analogous to the proposals for future exchanges and clearinghouses that the Justice Department has urged. But maybe such prohibitions might not be needed if non-discrimination rules can be effectively enforced. In either case, all qualified exchanges should have access to any qualified clearing entity; unlike futures, end-users should not have to deal only with one exchange and a clearinghouse if they want to purchase a particular standardized derivative product.

There are two important preliminary issues that deserve discussion, however, before I turn to the various ideas for overcoming any dealer resistance to meaningful derivatives reform. The first issue is whether the clearing function in derivatives is a natural monopoly. Darrell Duffie has persuasively argued that systemic risk is likely to be reduced most with fewer clearinghouses since this will increase the opportunities for netting not only across all relevant counterparties, but also across different

types of derivatives contracts.⁴⁶ It is also conceivable that the economies of scale in clearing make the case for a small number of clearinghouses. It is not clear, however, that either or both these arguments make a case for a *monopoly* in clearing. In addition, both arguments favoring fewer clearinghouses should be balanced against the benefits of competition in clearing, especially in the early stage of evolution of clearing in a given market. In other markets, competition delivers the lowest prices and encourages innovation. On balance, I believe the best outcome is for policy makers to preserve an environment conducive to competition in clearing, but not at all costs. If the clearing market evolves to one or two entities, so be it, but that outcome should be not presumed at the outset.

Second, there is some uncertainty about the legal authority of regulators to implement on their own any one or all of the ideas described below, given the Commodities Futures Modernization Act (CFMA) of 2000. That act excluded OTC derivatives from the requirement under the Commodities Exchange Act (CEA) that these instruments be traded on exchanges *regulated by the CFTC*. This statutory exclusion followed earlier recommendations from the President's Working Group on Financial Markets that were based on the concern that if the United States alone regulated OTC derivatives, trading in these instruments would move quickly off-shore (the same concern that persists today if the United States were to unilaterally impose higher capital charges on bank-dealer positions in non-cleared and/or non-traded derivatives).

There is a case, however, that even with the CFMA exclusion in place, *another regulatory body* – which I suggest below could be the Federal Reserve – can use its standard tools for regulating bank safety and soundness, namely the setting of capital standards, to promote the *clearing* of OTC derivatives and *their trading on exchanges not regulated by the CFTC*. As already described, the New York Fed (acting on behalf of the Fed system) already has powers of persuasion, *as the primary safety and soundness regulator of the holding companies of the major*

⁴⁶ Darrell Duffie, "How Should We Regulate Derivatives Markets?" Pew Financial Reform Project Briefing Paper #5.

dealer-banks, to encourage the clearing of CDS, not only to protect the financial health of these individual banks but also the financial system as a whole (since the financial condition of the major dealer banks is inextricably linked to the broader health of the banking and financial systems). For the same reason, the New York Fed may have additional powers to implement some of the reforms that follow. In addition, the SEC and the CFTC may have their own authorities to bring greater safety to derivatives markets – CDS in particular – through more clearing, trading and transparency, even without new legislation.

Differential Capital Standards: As discussed earlier, U.S. regulators should not wait for agreement on a wholesale revision to the Basel II bank capital standards by the Basel Committee (or the G-20) to agree with counterparts in the United Kingdom and/or the European Union on a new system of risk-based capital standards to incent bank-dealers to clear and trade more OTC derivatives. U.S. regulators should continue and intensify their apparent aggressive push to gain agreement on this single issue as rapidly as possible, without waiting for legislative instructions. Indeed, U.S. regulators have some leverage in any such negotiations knowing that U.S. dealer banks may be more reluctant than is commonly acknowledged to move their trades to Europe, where there is much more talk of reining in “speculative” CDS than in this country. Knowing that the dealers may fear taking their business to a more heavily regulated location in this regard gives the Fed some freedom to move on its own, if its counterparts in the U.K. or EU do not quickly agree to a system of capital charges on non-cleared and non-traded derivatives.

It is important that any differential in capital charges between cleared and non-cleared instruments be substantial so that the incentives are strong enough to induce maximum clearing. The same is true for differentials applied between traded and non-traded derivatives that are cleared. Dealers should receive offsets for any collateral they collect from end-user customers.

The presence of large capital penalties for non-standardized and/or non-traded derivatives does not mean, as some recent analysis has suggested, that the major dealer banks will have to raise impossibly or unreasonably high additional

amounts of equity.⁴⁷ The major dealer banks could avoid much of any required increased equity by clearing more of their derivatives, or more precisely, persuading customers to use standardized derivatives that are amenable to clearing. That is precisely the point of implementing a differential capital regime for derivatives.

Transactions Transparency: Once exchange trading of at least some CDS instruments gets underway – hopefully encouraged by the capital incentives that U.S. bank regulators will provide to encourage such an outcome -- the SEC and/or the CFTC may already have the legal authority to require the exchanges to implement both pre-trade and post-trade transparency. By this I mean that the exchanges require the posting of bids and asks, as well as actual transactions prices in as close to real time as possible. Indeed, close-to-real time reporting of the prices of *actual transactions* in *either or both OTC or exchange derivatives markets* would improve the accuracy and timing of margining and thus strengthen the financial position of the derivatives clearinghouses, which in turn would expose the major dealer banks and thus the financial system as a whole to less risk.

Several years ago, regulators required post-trade reporting for OTC markets in corporate bonds – the TRACE system --- over objections of the dealers, so there is precedent for such an outcome. Indeed, as the Squam Lake Working Group has reported, there is ample research documenting that “dissemination of trade data though TRACE reduces the bid-ask spreads for some important classes of bonds...” and that 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.”⁴⁸

Dealers may argue that more rapid dissemination of actual trade prices would inhibit their ability to hedge and thus may increase their costs of serving as counterparties to end-users. Even if true, this cost must be weighed against the informational benefits that end-users would gain from gaining access to more accurate price data

⁴⁷ See, e.g. Peter Eavis, “Expect to See a Big Fight on Bank Capital,” *The Wall Street Journal*, March 8, 2010, p. C8.

⁴⁸ Squam Lake Working Group on Financial Regulation (2009) at 6.

more quickly. In the markets for other financial instruments, we have close to real time reporting. There ought to be a heavy presumption of the same outcome for derivatives trades, whether they are conducted on or off exchanges. It is also always possible for such disclosure to delay or omit data that could expose the holder of an illiquid or unusually large position, or that could otherwise be established to pose a risk of impairing liquidity in particular products.

Governance Reform: It is possible that by mandating the clearing and trading of standardized CDS and other derivatives, a legislative reform package would reduce the current monopoly position of ICE Trust in dealer-to-dealer derivatives, either by enabling the SEC/CFTC to compel ICE Trust to accept other clearing members, or by compelling more such trades that could or would be cleared by ICE's main competitor, CME. This may not happen, however, even with legislation, and given current market conditions, is highly unlikely to happen without legislation or some other policy measure.

Accordingly, here too, the New York Fed may be able to exercise its bank safety and soundness authority to bring changes in the way ICE Trust is managed to induce it to be more open to clearing and trading of CDS and possibly other derivatives it may wish to clear. One way to accomplish this is to compel governance reform of ICE Trust (or any other clearing body in which dealer-banks may have a significant economic and/or voting stake in the future). In particular ICE Trust could be required to have all or at least a majority of its directors be *truly independent* of the dealer community and to have a fiduciary duty to serve the interests of the public.⁴⁹

Admittedly, it can be difficult defining and enforcing a true independence requirement, since individuals who may never have worked in a dealer bank may still have or have had other relationships with such institutions in ways that could give rise to a conflict. Furthermore, the more truly independent a board member is, the less likely it is that he or she will be familiar

⁴⁹ ICE Trust is a limited purpose trust company, and a subsidiary of ICE, which is a publicly-held company traded on the NYSE. If the board of ICE Trust were truly independent of the dealer banks, it probably would be unnecessary to impose a similar requirement on the ICE parent.

with the business of the entity. In this case, however, there should be sufficient expertise elsewhere in the financial and academic communities to ensure that ICE is both carrying out its clearing functions in a responsible manner, while acting in the larger public interest – for example, by doing its best to promote as much clearing (and standardization) as possible, while also encouraging the trading of cleared derivatives. For reasons outlined earlier, it may not be desirable for ICE to own its own exchange platform, but if it does, then independent directors are more likely to ensure that all exchanges would have equal access to ICE's clearing functions, the topic discussed next.

Alternatively, perhaps because of the definitional difficulties in defining true “independence,” as well as inherent difficulties that member financed or controlled organizations have in enforcing rules against other members even when the directors are ostensibly “independent,”⁵⁰ Congress may decide to vest authority in regulators to set capital requirements and other membership rules for all derivatives clearinghouses. Regulators, operating under Congressional supervision, would be free of any conflicts and presumably can be counted on to act in the public interest. However, as the financial crisis has demonstrated, regulators are far from perfect, and Congressional oversight also may not always work ideally. For these reasons, the two governance ideas considered here might be joined in any legislation: regulators could be instructed to set independence requirements for directors of clearinghouses, but retain backup authority to step in if they have reasons to believe that additional actions are warranted.⁵¹

⁵⁰ This cultural problem was evident at NASDAQ before it was forced to change its pricing policies by the SEC and the Department of Justice. It is only natural that members will be reluctant to aggressively take other members to task.

⁵¹ Ruben Lee has put together an impressive report on various governance mechanisms for clearinghouses and exchanges, outlining the pros and cons of different arrangements. His report does not endorse any particular solution. See Ruben Lee, *The Governance of Financial Infrastructure* (Oxford Finance Group, January, 2010). Without getting into a detailed assessment of that report, I conclude here that at least with respect to ICE Trust, there is a need, given its revenue-sharing arrangement with the major dealer-banks, for some further improvement in governance to provide better assurance that its membership arrangements and other activities are both motivated purely by competitive and risk concerns of the clearinghouse, not dealer trading desks, and fully consistent with the public interest.

Non-Discrimination: Regardless of what other measures on this list are taken, if Congress fails to enact suitable derivatives reform, the New York Fed – again in the interest of promoting both trading in standardized derivatives and transparency of the transactions – may be able to compel ICE Trust (given the financial stake of the dealers) to deal fairly and equally with non-dealers with the requisite financial capability who want to be members of the clearinghouse. If it is not currently clear, the Congress should give this authority to the SEC and/or the CFTC. In deciding whether a non-dealer has sufficient financial capability to be a member of a clearinghouse, regulators should take account of the fact that the broader the membership of any clearinghouse the greater will be its financial strength.

One desirable regulatory outcome could be the mandating of multiple tiers of membership or its equivalent: tying the minimum capital threshold to the open positions of any member, perhaps above a certain size. If financial assessments are necessary because margins are not sufficient to cover the costs of failure of a large member, those assessments should be proportional to a member's required contribution to the clearinghouse's reserve fund. In addition, the non-discrimination requirement should apply to any clearinghouse's dealings with exchanges (that is, all approved derivatives trading platforms should be able to use the services of any approved clearinghouse).⁵²

Derivatives clearinghouses are not the only entities that should be subject to non-discrimination rules. As the earlier discussion highlighted, the only comprehensive source of CDS prices is an entity in which the dealers have a major financial interest, Markit. This entity, in turn, has a joint venture with DTCC, which reduces and arguably eliminates incentives by DTCC to make its trade data available to other vendors that might compete with Markit. Pricing transparency clearly would be significantly improved if derivatives pricing were not so tightly controlled. One obvious remedy for this is for regulators and/or antitrust authorities to

⁵² The Dodd bill's anti-discrimination language clearly applies to clearinghouse dealings with exchanges, but it is not clear that the language also applies to the membership arrangements of clearinghouses themselves.

require dealers to make their data available on equal terms to all vendors or pricing services.

Structural Solutions: Finally, regulators and antitrust enforcement authorities (the Department of Justice in the United States and the Competition Directorate in the European Union) could get at the root cause of the incentive problems in the various facets of the derivatives market by compelling the dealers to divest any financial ownership rights or their equivalent (such as revenue-sharing arrangements) in the key institutions of the derivatives market: ICE Trust, Markit and Markit's joint venture with the Depository Trust Clearing Corporation. For reasons already outlined, because of strong dealer involvement and/or influence, each of these institutions has strong incentives to impede the socially efficient levels of derivatives clearing and trading, and related price and volume transparency.

The "Lynch" amendment in the House financial services reform package (there is no counterpart in the Dodd bill) makes a stab toward this objective, by limiting the individual or collective voting interest of dealers in a derivatives clearinghouse to 20%. But the Amendment grandfatheres the current dominant clearinghouse (ICE Trust) where the dealers have a significant financial stake. Furthermore, the Amendment has no provisions relating to the ownership of Markit, or its joint venture with DTCC that may limit or have the effect of limiting price transparency.

A much cleaner structural solution would be to limit dealers to a minority, non-controlling ownership position in each of these *current* entities *without any grandfathering provisions*. Such a step would ensure that the key infrastructure of the derivatives market – the institutions engaged in clearing, exchange trading, and transactions reporting (pre and post) – is competitively structured by removing the major dealers, individually and collectively, from having either economic or voting control of any entity engaged in clearing, exchange trading, and reporting of transactions information in derivatives markets. This outcome would reinforce, and even conceivably substitute, for some of the above measures that, for any number of reasons, may not be implemented.

Structural separation would reinforce the effectiveness of the other measures by taking

away the incentives of the dealers – who otherwise would continue to control the key elements of the derivatives market infrastructure – to circumvent those steps. Likewise, if the dealers were able to use their economic and/or political power to delay or prevent the implementation of the other reforms, or if U.S. regulators are unable or unwilling to exercise their authority to bring about change either unilaterally or until they gained agreement from regulators in other countries (with respect to capital charges, for example), a structural solution may be all that it takes to open up the clearing, trading and reporting functions to true competition.

As long as dealers have the ability and incentive to prevent or delay the maximum degree of derivatives clearing, exchange trading and transactions pricing (pre and post), systemic risk arising out of derivatives market activity will be higher than is socially optimal for reasons outlined here. If the Fed cannot reduce this risk through other means – for example, through changes in capital requirements for U.S. banks until gaining agreement of comparable regulators in other financial markets – then forcing divestiture of dealers’ ownership rights and/or economic interests in derivatives markets infrastructure entities would be the only other practical way to bring about the socially desirable level of clearing, exchange trading, and transactions reporting. Further, if structural change of this kind were effected, it should also be accompanied by a data non-discrimination requirement that would prohibit dealers, individually or collectively, from favoring one or more data service providers over others.

As a practical matter, the only way to achieve a structural solution would be as the product of a broad antitrust investigation of the dealers’ current control of each of the derivatives market infrastructure entities. Currently, according to public reports, the Department of Justice is investigating only some activities of Markit, the sole supplier of any daily post-trade derivatives transactions data. If the Justice Department were to find abuses of other entities critical to the functioning of the derivatives market in which the dealers have a significant financial stake, Justice may be in a position to deliver the kind of broad structural remedies outlined here, either in the form of a consent decree or through a court-ordered remedy at trial (presuming the

Department is able to persuade a court that such abuses occurred and warrant structural relief).⁵³

Dealers understandably are likely to contest any effort requiring them to relinquish any financial stake in ICE Trust (and the other infrastructure institutions discussed here). Among other things, they would be likely to argue (if such a course of action were being seriously considered) that ICE Trust could not exist or would operate sub-optimally without the financial strength of the dealers to support it. To be sure, it is appropriate that the larger are the open positions of any clearing member of a clearinghouse, the greater should be its contribution to any reserve fund the clearinghouse will need as a backup source of funds to the margins imposed on all trades. *But the contributions to the reserve fund should not be confused with ownership or control of the clearinghouse itself.* The clearinghouse can be owned by other shareholders, with the reserve fund treated separately (indeed, many shareholders of ICE, the parent of ICE Trust, are non-dealers, such as mutual funds and other institutional investors). *Indeed, the wider the membership of the clearinghouse, the stronger it will be financially.*

Ironically, one possible side-effect of a more open ICE is that it could eliminate any chance that CME could effectively compete with it. If ICE were to become more accepting of dealers and end-users with lower capital thresholds than \$5 billion, then fewer of them would have reason to use CME. CME could only survive in such a situation by offering some combination of lower prices or better service, or perhaps a companion exchange or electronic platform (though for reasons discussed earlier, regulators should be skeptical of alliances between clearinghouses and exchanges where other qualified exchanges do not have access to the clearinghouse).

⁵³ A similar outcome would be possible if competition authorities in the European Commission found sufficient evidence of abuse. It should be noted that the Dodd bill has broader antitrust provisions than the House bill, stating in two separate sections that both clearing organizations and dealers must avoid “adopting any rule or taking any action that results in any unreasonable restraint of trade, or imposing any material anti-competitive burden.” Presumably, the SEC and CFTC have powers to enforce this provision, most likely through a cease-and-desist order or its equivalent; but the bill provides no explicit authority for either agency to enforce what antitrust authorities call additional “fencing in” provisions, including structural remedies of the kind suggested above.

If the market in derivatives clearing were to reduce to a single competitor, it would look like the U.S. stock and options markets, where clearing is carried out by a single entity. As long as that entity is subject to non-discrimination requirements – so that it must deal with all exchanges on an equal basis – and its other activities (namely pricing) are potentially subject to regulation, a single clearing entity can be an acceptable outcome. But before that event

happens, competition in the market for clearing should be allowed to play out so that the market selects the most efficient competitor, if the clearing market proves to be a natural monopoly. If that competition is distorted by any abusive practices, those practices must be stopped, and if this cannot be effectively arranged, then structural remedies of the kind outlined here should be implemented.

Conclusion

The OTC derivatives market is in clear need of reform that will promote more central clearing as a stepping stone toward exchange trading and much greater price transparency. Such an outcome would reduce systemic risk and better serve all users of derivatives by narrowing spreads on transactions involving standardized instruments.

But this very same outcome does not appear to be in the economic interest of the major dealers who now control or heavily influence all key facets of the OTC derivatives market. In this

essay, I have outlined why this is the case and some potential options for blunting the incentives that the dealers have to frustrate even those reforms that may be legislatively enacted. Perhaps I have missed some other ideas, or those that I have suggested may be flawed in some respects that I have not yet anticipated. I invite readers, policymakers and financial participants to join this debate soon to develop and implement solutions that will address the concerns about the Derivatives Dealers Club that are discussed here.

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Futures, options and other derivatives exist in order that companies and individuals may attempt to diminish the effects of , or profit from, future changes in commodity and asset prices, exchange rates, interest rates, and so on. For example, the prices of foodstuffs such as wheat, maize, cocoa, coffee, tea and orange juice are frequently affected by droughts, floods and other extreme weather conditions. Consequently, many producers and buyers of raw materials want to hedge, in order to guarantee next season's prices. In recent years, especially since financial deregulation, exchange rates and interest rates have also fluctuated wildly. Many businesses, therefore, want to buy or sell currencies at a guaranteed future price. D. GUIDE. Exercise 1: 1 " C, 2 " D, 3 " B. Exercise 2 of derivatives markets and by empirically analyzing the impact of derivatives on the finance-growth nexus in the U.S. case. In section two of our paper we review selected theoretical and empirical literature in the incentive problems when one party to a financial transaction has information that the other party does not, or when one party is an agent for another (sixth function of financial systems). Coming back to one of King and Levin's (1993) core statements that the predetermined.