

Testimony of René M. Stulz¹

To the

House Committee on Financial Services

**Over-the-Counter Derivatives Markets Act of
2009**

October 7, 2009

¹ René M. Stulz is the Everett D. Reese Chair of Banking and Monetary Economics at the Fisher College of Business of the Ohio State University, a Research Associate of the National Bureau of Economic Research, a trustee of the Global Association of Risk Professionals, and a member of the Squam Lake group of academics studying financial reform. The opinions expressed are his own, but he is grateful for useful comments from many colleagues and thanks especially Rich Apostolik, Darrel Duffie, Donna Howe, and Jack Stulz for helpful discussions.

Mr. Chairman, Ranking Member Bachus, and members of the Committee, I thank you for providing me this opportunity to discuss with you draft legislation concerning the over-the-counter derivatives markets. My name is René M. Stulz. I am the Reese Chair of Banking and Monetary Economics at the Ohio State University. I am testifying in my individual capacity as an academic expert in risk management and derivatives.

My testimony is divided into five parts. First, I want to briefly review how derivatives are used by non-financial and financial firms throughout the world and make the point that the legislation you are contemplating should not make it harder for firms to use derivatives to manage risk. Second, I would like to address the role of the over-the-counter market and why it is important for legislation to make that market work better rather than reduce its role. Third, I will then turn to clearing and how the draft legislation addresses clearing. Fourth, I would like to discuss the capital requirements contemplated in the draft legislation. Fifth, I want to address the reporting, disclosure, and business conduct provisions of the draft legislation.

1. The use of derivatives.

Derivatives are used in many different ways. Many uses of derivatives lead to greater economic growth and to job creation. In contemplating legislation regulating derivatives, it is important to avoid decreasing the uses of derivatives that are good for the economy.

Let me give you a simple example of how the use of derivatives can create jobs. Consider a small exporter in Ohio that exports machinery and considers bidding on a contract to export to Italy where it will be paid in Euros. The moment the exporter makes a bid in Euros, it takes on

currency risk. The Euro could depreciate between the time the bid is made and a decision is rendered. During that time, the Euro could fall in such a way that all the profits of the exporter are lost. The exporter may decide that the currency risk is too large and decide not to bid. With currency options, the exporter could hedge against the possible depreciation of the Euro. Hence, through the use of derivatives, the exporter could decide that it can bid on the contract, in which case jobs will be created if the contract is awarded. In my example, the exporter would have to use the over-the-counter market to obtain the best hedge. The reason is straightforward: the contract would have to be tailored to the size of the bid and reference the date that the decision is made in order to be cost effective.

Firms throughout the U.S. and the world use derivatives in a similar way on a daily basis. They use derivatives to eliminate risks that they do not want. As they eliminate these risks, they can take advantage of business opportunities that otherwise would have to be turned down. Academic research generally provides quantitative studies on the benefits from the use of derivatives. For instance, a recent study that examines the use of derivatives by non-financial firms investigates 6,888 firms from 47 countries during 2000 and 2001.² These firms constitute 99% of the world market capitalization. It finds that 60.5% of these firms use derivatives. The sample includes 2,076 U.S. firms and 65.1% of these firms use derivatives. The study concludes that using derivatives makes firms less risky and worth more. In 2009, ISDA conducted a survey of derivatives usage by the world's largest corporations, those corporations in the Fortune Global 500. The survey finds that 94% of the world's largest corporations use derivatives.³

Derivatives also make financial markets work better. Derivatives markets are often more liquid and better at price discovery than the markets for the underlying securities. For instance,

² See "The effects of derivatives on firm risk and value," by Söhnke M. Bartram, Gregory W. Brown, and Jennifer Conrad, working paper, University of North Carolina, Chapel Hill, NC, March 2009.

³ <http://www.isda.org/researchnotes/pdf/ISDA-Research-Notes2.pdf>.

they make markets like the market for Treasuries function better by enabling investors to hedge risks associated with Treasuries quickly and cheaply when the bonds they hold lack liquidity.

With better functioning Treasury markets, interest rates are lower and less volatile.

2. The role of the over-the-counter markets.

The over-the-counter markets are central to the trading of derivatives. This critical importance of over-the-counter markets is not unique to derivatives. Over-the-counter markets play a central role in the trading of many securities. Treasury bills and bonds trade over-the-counter. Foreign exchange trades over-the-counter. Most observers would agree that the Treasury and foreign exchange markets are among the deepest and most liquid markets in the world. Corporate bonds trade mostly over-the-counter as well. Even large trades of common stocks take place over-the-counter.

The notional amount of derivatives originated on the over-the-counter markets dwarfs the amount originated on exchanges. The most recent statistics available globally from the Bank for International Settlements show that the notional amount of over-the-counter derivatives outstanding at the end of 2008 was \$591 trillion. In contrast, the amount outstanding on exchanges was roughly one-tenth of that amount. Much of the difference in size between the over-the-counter markets and the exchange-traded markets is accounted for by the fact that these two types of markets work very differently.

The over-the-counter markets are intermediation markets. In an intermediation market, an end-user – for instance, a manufacturing firm – will contact a dealer wanting a derivatives product. The dealer will sell the product to the end-user, but typically it does not want to take the

risk associated with that product and has to find somebody who wants to bear that risk. Consequently, there are many intermediaries between end-users in such a market because, when a dealer enters a contract with an end-user, the most likely outcome is that the dealer will enter an offsetting contract with some other dealer. As an example, if a manufacturing firm executes a \$25 million interest rate swap (pay the fixed rate, receive the floating rate) to reduce its interest rate risk, then the dealer will execute the offsetting trade with another dealer – \$25 million receive the fixed rate, pay the floating rate – who might then offset that position with another dealer, and so on, until an end-user has a demand for this offsetting trade. So the outstanding size of the market is a multiple of the end-user positions in derivatives. However, measuring size this way does not measure the value of the derivatives positions or their risk. For instance, in the latest report by the Comptroller of the Currency, the notional value of derivatives held by U.S. commercial banks was \$203.5 trillion, but the fair value of these derivatives after taking into account netting at the dealer level, which is a measure of the credit exposure of dealers, was a quarter of a percent of that amount – \$555 billion.⁴ In contrast, with exchanges, end-users come to the exchanges to find other end-users, so that intermediaries are not needed. Exchanges work well for products where end-users come to the market continuously. They cannot work for products that are customized or have low liquidity.

Recent history shows that it is imperative to be concerned about potential systemic risks of the over-the-counter derivatives market. However, during most of the credit crisis, the over-the-counter market for derivatives worked remarkably well in many ways: derivatives were traded, payouts were made, collateral was exchanged. There is considerable focus on the problems that AIG experienced and justly so. Any legislation that addresses the regulation of

⁴ OCC's Quarterly Report on Bank Trading and Derivatives Activities Second Quarter 2009.

derivatives markets should make it much harder for problems similar to AIG to surface again. Nevertheless, it is important to point out that the core of the problems of AIG was its levered exposure to subprime mortgages, which experienced large unexpected losses because of a collapse in housing prices.

The regulation of derivatives markets should allow the over-the-counter markets to thrive, but it should put in place safeguards that reduce the probability that these markets could impose excessive risks on the financial system. Almost all the innovations in derivatives started from the over-the-counter market. Further, the over-the-counter market is the most efficient vehicle to address specific needs of corporations through the provision of customized derivatives. Though corporations can frequently address their hedging needs through the use of standard products with standard maturities, often they cannot. Sometimes, a derivatives contract that has never been written before and may never be written again is the solution to a hedging problem that makes it possible for a firm to expand greatly and create many jobs. No standardized exchange product could help such a firm as effectively. Further, imposing large costs on financial firms for writing derivatives that are not plain vanilla would have just the opposite effect this legislation is meant to achieve, since it would make it unprofitable for financial firms to develop and sell such derivatives and would reduce the ability of firms and investors to manage their risks.

In principle, there is no reason why financial firms cannot manage the risks of derivatives trading effectively through good risk management and good corporate governance. JP Morgan Chase has had the largest share of the market for derivatives since it came into existence and has managed its derivatives activities with hardly a hiccup. Many more firms have managed the risks

of their derivatives books well than have made large unexpected losses. Good risk management and good corporate governance should be strongly encouraged.

Though derivatives specifically tailored to the needs of a specific firm can often be the most useful derivatives in allowing firms to manage risk, standardized derivatives are more liquid and are easier to value. Though the draft mentions standardized derivatives, it does not define them. Such a definition would be helpful. With such derivatives, disclosure and reporting are more meaningful because their terms are easily understood and compared.

3. The role of clearing.

For the typical derivatives position in the over-the-counter market, at least one counterparty is a financial institution. Consequently, the financial institution promises to make payments if called upon to do so through the derivatives contract. The largest financial institutions have a large number of such promises on their books, so that they may be called upon to make large payments on their derivatives. Typically, their books are well-balanced because they make their money out of intermediating transactions by taking a bid-ask spread. Consequently, if they are called to make such payments, most likely they will also receive such payments.

After the fall of Lehman, it was quite clear that there was a great deal of uncertainty about the financial condition of some banks. Most of this uncertainty had little to do with derivatives positions. The public filings of some banks provide an incredible wealth of information about their derivatives positions, but not all banks have filings that are equally transparent. Greater transparency of derivatives activities and exposures should be encouraged.

Further, the filings are typically not instructive about the exposure of banks through derivatives to individual counterparties. There are good reasons why exposures to individual counterparties should not be disclosed in public filings. However, it is imperative that regulators have a good understanding of such exposures and of how they change through time.

The over-the-counter derivatives industry has managed to reduce counterparty risks through a variety of mechanisms. The most important mechanisms so far have been netting and collateral arrangements. In addition, however, the industry has also moved towards using clearing for standardized products. A clearinghouse launched in July to clear CDS trades has already cleared 24,000 transactions for a notional amount of \$2.2 trillion.⁵ All these efforts should be encouraged and one should be wary of regulatory efforts that inadvertently slow down or revert the industry's progress in managing counterparty risk without substituting better mechanisms.

Clearinghouses assume counter-party risk. If dealer A and dealer B enter a derivatives contract, they have counter-party risk with each other. If dealer B defaults, dealer A makes a loss if the replacement cost of the derivatives contract is positive for dealer A – this would necessarily be the case if on net dealer B was expected to make payments – and dealer A has insufficient protection against a default by dealer B. A systemic concern with such losses is that, as a result of losses from the default of dealer A, dealer B could default as well – and so could subsequently a dealer who is a counterparty to dealer B. If dealers A and B clear the trade through a clearinghouse, the counterparty to dealer A becomes the clearinghouse and the counterparty to dealer B becomes the clearinghouse. As long as the clearinghouse is well-capitalized and manages its risks well, there is no material counterparty risk with the

⁵ <http://ir.theice.com/releasedetail.cfm?ReleaseID=406881>.

clearinghouse. This fact explains the widely-held belief that requiring clearing for over-the-counter derivatives will significantly reduce systemic risk. It is important, however, to understand that we have much experience with exchange clearinghouses and little experience with over-the-counter clearinghouses. Over-the-counter clearinghouses have not been tested in a financial crisis.

If a financial firm fails when derivatives are cleared, in principle there are no follow-on effects from the failure if the losses are absorbed by the guarantee fund of the clearinghouse rather than by counterparties. With clearing, the positions of a financial firm with the clearinghouse are netted, so that if the financial firm fails it might owe the clearinghouse much less than it might owe some financial firms without clearing.⁶ Further, the collateral deposited with a clearinghouse for margin requirements is not at risk in the way that it would be if deposited with a dealer, so that default of a dealer would not endanger collateral for other dealers. Consequently, the failure of a financial firm could have much less of an impact on the financial system with properly conceived clearing. However, clearing is not a panacea. It is perfectly possible that clearing could actually increase systemic risk and therefore it is of great importance to manage clearing requirements in a way that insures that systemic risk will be reduced. In the remainder of this section, I discuss how clearing could increase systemic risk and what should be done to avoid this outcome.

Counterparties can fail, but so can clearinghouses. Failure of a clearinghouse could have a much more dramatic impact on the financial system than failure of a derivatives dealer if that clearinghouse clears a significant amount of over-the-counter derivatives trades. Even if a

⁶ For instance, firm A could have \$100 billion notional long and \$100 billion notional short positions with the clearinghouse, for a net of zero. However, this net amount of zero could be \$100 billion notional long with firm B and \$100 billion notional short with firm C.

clearinghouse does not fail, large losses can force it to make a capital call on its members during a financial crisis, which could lead members to default and worsen the crisis. It is therefore important that clearinghouses be properly capitalized and that margins be sufficient to insure a low probability of loss in the event of a default. The proposed legislation requires margins that cover risks in the ordinary course of business and requires the clearinghouse to hold capital that would cover the losses resulting from the failure of its largest participant. Neither requirement seems sufficient. The span margining system, which I understand to be industry best practice, is set up so that margins cover stress losses. It seems to me that this requirement should apply to the clearinghouses generally. Further, the capital requirement should be such that not only should a clearinghouse have the ability to absorb the default of its largest counterparty exposure, but it should still be able to operate properly if such a default occurs. The capital requirement for clearinghouses in the proposed draft does not appear sufficient for that purpose.

Academic research has shown that clearing could increase systemic risk rather than decrease it if there are too many clearinghouses.⁷ With a clearinghouse, a counterparty is only responsible for its net exposure arising from contracts cleared by the clearinghouse. This netting benefit can be considerable. When a financial institution enters derivatives contracts without clearing, it also benefits from netting. In that case, netting takes place among all contracts under the same ISDA master agreement with a counterparty. If all derivatives contracts were cleared by the same clearinghouse, the benefit of clearing through the clearinghouse would dominate the benefit of netting arising from exposure under master agreements. However, the benefit from netting might be less through clearing if there are many clearinghouses. It is therefore important

⁷ See the discussion in “Credit Default Swaps, Clearinghouses, and Exchanges,” Squam Lake Working Group on Financial Regulation, July 2009, and “When does a central clearing counterparty reduce counterparty risk?” by Darrell Duffie and Haoxian Zhu, working paper, Graduate School of Business, Stanford University, February 2009.

that legislation does not lead to a plethora of clearinghouses. Further, clearinghouses should be allowed to clear different types of over-the-counter derivatives – for instance, interest rate swaps and credit default swaps, options on currencies and options on commodities. Another problem that arises with multiple clearinghouses is that dealers can select the clearinghouse through which they clear a trade opportunistically. Dealers will select the clearinghouse that has the lowest margin requirements for a trade, but that clearinghouse may have a low margin requirement because it underestimates the risk of the trade. With such a situation, clearinghouses could end up with derivatives whose risk they misjudge.

With many inadequately capitalized clearinghouses, systemic risk could be worse than under the current system. However, with few clearinghouses, the collapse of any clearinghouse could have a worse impact on the financial system and the lack of competition among clearinghouses means that clearing may quickly become inefficient. With few clearing houses, the risk management capabilities of each clearing house become critical to the stability of the financial system if these clearing houses clear a significant fraction of over-the-counter trades. Both operational risk and counterparty risk management of the clearinghouses have to be carefully monitored and clear minimum standards have to be established. Further, if there are few clearinghouses, these clearinghouses will have some monopoly power and could abuse this power through their pricing and margining policies and possibly in other ways. It seems to me that it would be beneficial for the legislation to address explicitly the situation where a clearinghouse becomes a monopolist in clearing trades of a given type of derivative and to specify how such a clearinghouse would have to be regulated.

A fundamental problem with clearing is that the clearinghouse has to be able to model the risks of the derivatives it clears and calculate daily gains and losses on positions. Such modeling

is expensive. It does not pay for a clearinghouse to model the risks of derivatives that it will have to clear infrequently or for which there is little market data. Had AIG wanted to clear the default swaps it sold, a clearinghouse would have been unlikely to want to clear these swaps because the modeling effort would have been too expensive and there would have been no market prices to use to set margins and evaluate gains and losses. This means that clearinghouses can only be used effectively for fairly standard products that trade frequently so that the clearinghouse observes market prices. Yet, often, the most useful derivatives to end-users are precisely customized derivatives that may be hard to model and do not trade at all. It is therefore important that banks be allowed to sell derivatives that cannot be cleared. On efficiency grounds alone, it would make little sense to require clearing for customized derivatives. The bank that sells the derivative has done the modeling. It should understand this derivative better than anyone else. It should therefore be in a better position than anyone else to manage the counterparty risk associated with such a derivative. If a financial institution understands and manages the risks of derivatives poorly, that is a problem that can have systemic implications. Clearing does not fix that problem because risks are left with the financial institution that writes the derivatives.

A final issue with clearing has to do with the decision of when it is appropriate for a regulator to require clearing for a type of derivative. Clearing requires data to model risk and to assess gains and losses in normal times, so that only liquid derivatives are likely to be acceptable for clearing. However, for clearing to reduce problems in a financial crisis, it must also be the case that the cleared derivatives remain liquid in a crisis. If clearing is required for derivatives that stop trading in a crisis, clearing might break down since the clearinghouse would not have accepted prices to determine daily gains and losses. This problem suggests that clearing should be limited to derivatives that have a high likelihood of remaining liquid in a crisis.

There are both costs and benefits in requiring clearing. Historically, when a type of derivative trades both on exchanges, where it is cleared, and over-the-counter, where it typically has not been, the cleared derivatives market does not necessarily dominate the over-the-counter market. For instance, for the last thirty years, it has been possible to buy or sell foreign currency for future delivery both on exchanges and over-the-counter. Both exchanges and the over-the-counter markets have done well. Similarly, currency options are traded both over-the-counter and on exchanges. It seems to me to be very difficult to argue that over-the-counter trading of foreign exchange products has created meaningful systemic risk. Given that exchange-traded versions of derivatives have not won over the over-the-counter versions of derivatives, it should be that the decision to require clearing be made based on clear, quantified, evidence that clearing must be required for the public good. Viewed from this perspective, the criteria in the proposed legislation appear to be too subjective; they could lead to arbitrary decisions and unwarranted expenses.

One way to address this important issue is that the CFTC and the SEC be required to define how systemic risk is measured. It would then be possible for these agencies to quantify how the clearing requirement for a type of derivative would reduce systemic risk. These agencies could then report to Congress how the clearing requirement they imposed reduced systemic risk. Absent a mechanism of this type, participants in the derivatives markets would find it difficult to anticipate when clearing is or is not going to be required. As a result, these participants might find it unprofitable to invest in systems that reduce counterparty risk and operational risk with derivatives when these mechanisms would become obsolete with clearing.

When the agencies require that a type of derivative must be cleared, they should also have to explain what the costs of clearing will be. It cannot be that anything that decreases

systemic risk is good by definition irrespective of cost. Collateral is scarce for dealers. It is therefore essential that any reform lead to a situation where collateral is used efficiently. Properly implemented, clearing could reduce use of collateral, which would be valuable and could lead to greater economic growth. Improperly implemented, however, clearing could have the opposite effect. By consuming excessive amounts of collateral, it could shrink the size of derivatives markets and make products valuable to end-users more expensive or even more difficult to obtain.

4. Capital requirements.

To the extent that derivatives that are not cleared pose systemic risks, it is important to make sure that institutions that do not clear derivatives have to bear the full cost to the economy of the risks posed by these derivatives. Consequently, the draft proposal to have higher capital requirements for derivatives that are not cleared is exactly what is required. However, it is important that the differential in capital requirements only be applied in instances where it is clear that there is a difference in systemic risks posed by derivatives depending on whether they are cleared or not.

The difficulties of AIG show, however, that it is not enough to have capital requirements. Financial institutions have to manage their liquidity so that they can make the payments that they are required to make for their derivatives contracts. From this perspective, greater attention should be paid to the liquidity of financial institutions and not just to the capital they hold.

5. Disclosure, reporting, and business conduct requirements.

An investor who wants to take a bearish position in a stock can do so in many ways. The investor can short the stock, buy a put on the stock, enter a total return swap, and so on. Currently, different approaches to achieve the same economic outcome are regulated differently. Such differences lead to regulatory arbitrage, which lessens the efficacy of regulation and can destabilize the financial system. In this context, it is important for derivatives trades that could influence prices of publicly traded securities to be recorded and for these records to be accessible to regulators. However, recording and disclosure requirements as well as business conduct rules that reflect concerns about conflicts of interest are of limited use for many types of derivatives where manipulation and insider trading concerns are not present. In fact, such requirements and rules could decrease the ability of derivatives markets to help end-users by making derivatives more expensive and by reducing the flexibility of dealers.

Reporting and disclosure requirements could make it much more expensive to introduce new derivatives products. Typically, new derivatives products have little or no volume. This low volume may be due to the fact that these products are not yet widely known and understood or could be because they were designed to serve very specialized needs from end-users. There is a huge diversity of derivatives products. Some products have been sold only once. Others have a huge market. If reporting, disclosure, and business conduct requirements are too onerous for new products, innovation will slow in derivatives markets. Yet, the most widely used derivatives of today, interest rate swaps, started in the 1970s as products that took weeks if not months to negotiate and with no trading volume at all. Care should be taken to make it possible for new products to emerge that may turn out to be as widely used as interest rate swaps in twenty or thirty years.

The draft legislation requires regulators to specify margins for derivatives. Having regulators specify margin requirements for each type of new derivative would cripple innovation in the over-the-counter market because it would effectively create an approval process for derivatives. It would seem worthwhile to consider a materiality threshold for reporting and margin requirements. In any case, it is not clear how this would work in practice. Margin requirements should be dependent on market conditions and should be determined at the portfolio level for positions with a counterparty. For instance, it could well be that an option bought by dealer A from dealer B has high risk, which would justify a high margin. However, at the same time, dealer B might have bought an option from dealer A that offsets most of the risk, so that the portfolio of exposures has little risk and justifies a low margin. It is not feasible for regulators to contemplate margin rules for all possible portfolios of exposures a dealer might face, but not taking into account diversification and hedging benefits at the portfolio level would lead to an inefficient increase in the cost of holding derivatives positions. Such a situation could actually increase systemic risk because dealers would not receive credit for hedges.

The current description of what a dealer would have to reveal to a potential purchaser of derivatives seems to be too broad and it ignores the realities of derivatives dealings. Derivatives dealers should not have an implied fiduciary duty to their customers if they are not acting as advisors. The proposed legislation asks that a dealer reveal all sources of income from a derivatives trade to an end-user. Such a requirement seems impractical. Often, derivatives transactions take place quickly. An end-user might ask for bids from five dealers. These dealers are taking an economic risk by making these bids and do not want them to be outstanding for a long period of time. Further, a dealer might obtain a hedging benefit from the transaction. Absent the transaction, the dealer might have to buy a derivative. It would seem unreasonable to require

the dealer firm to reveal information about its books in such a situation. Further, the derivatives salesperson might not even be aware of that hedging benefit.

6. Conclusion and summary.

Derivatives have a critical role to play in the management of risks. This role is critical for non-financial companies as well as for financial firms. Used well, derivatives reduce systemic risk. Managed poorly, derivatives can increase systemic risk. Many aspects of the draft legislation can help in reducing the systemic risk of the over-the-counter derivatives markets. In summary, my main conclusions are:

- 1) Often, customized or infrequently traded derivatives are the most useful derivatives to resolve specific risk management problems for non-financial firms. By solving such problems, these derivatives can enable such firms to grow more and to create more jobs. Such derivatives can only be sold on the over-the-counter market and clearing of such derivatives, if feasible at all, is uneconomical. It is important that the proposed legislation does not make it more difficult and expensive for end-users to obtain such derivatives by imposing reporting, margin, disclosure, and business conduct requirements on customized and infrequently traded derivatives that make it unprofitable for financial institutions to sell such derivatives.
- 2) Properly implemented clearing can reduce systemic risk. However, clearing is not a panacea. If there are too many clearinghouses with too little capital, clearing requirements could increase systemic risk compared to the current situation. For clearing to reduce systemic risk, there have to be few well-capitalized clearinghouses.

The capital and margin standards for clearinghouses set out in the draft proposal seem insufficient. The draft proposal should also explicitly address the issue of how clearinghouses that have a monopoly in the clearing of a specific type of derivatives would be regulated. Finally, there has to be clarity for market participants as to when regulators are going to be able to require that a type of derivative be cleared. To make such a requirement, regulators should be asked to show conclusively that requiring clearing for a type of derivatives would reduce systemic risk in a quantifiable way.