Testimony of Richard Bookstaber

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Mr. Chairman and members of the Committee, I thank you for the opportunity to testify today. My name is Richard Bookstaber. During my career I have worked extensively in risk management. In the 1990's I was in charge of market risk management at Morgan Stanley and then oversaw firm-wide risk at Salomon Brothers, continuing in that capacity for a short time after it was absorbed by Citigroup. Following that, I oversaw risk at two buy-side firms, Moore Capital Management and Ziff Brothers Investments, and ran an equity hedge fund at FrontPoint Partners. Most recently I worked at Bridgewater Associates, a large hedge fund headquartered in Westport, Connecticut. I left Bridgewater at the end of 2008.

Before working in risk management, I was one of the pioneers in the development of derivative products on Wall Street. Moving from academics to Morgan Stanley in 1984, I designed, priced and hedged derivatives, and had experience with derivatives in the equity, fixed income, commodity and foreign exchange markets. I wrote one of the first books on derivatives, *Option Pricing and Strategies in Investing*, (Addison-Wesley, 1981).

I am the author of *A Demon of Our Own Design – Markets, Hedge Funds, and the Perils of Financial Innovation*. Published in April, 2007, this book warned of the potential for financial crisis from the explosion of derivatives and other innovative products.

Although I have had extensive experience on both the buy-side and sell-side, I come before the Committee in an unaffiliated capacity, and represent no industry interests.

My testimony will focus on the need for reduced complexity and increased transparency in the derivatives markets. This can be accomplished by standardization of derivative instruments and ultimately by having derivatives trade on the exchange. Many of the issuers and users of derivatives have incentives for derivatives to remain complex and opaque, but these incentives are related to flawed objectives.

Complexity: The Problem with Derivatives

Derivative instruments – and I use the term broadly to include the swath of what are often termed 'innovative products' such as options, swaps and structured products – can improve the financial markets. They can allow investors to mold returns to better meet their investment objectives, to more precisely meet the contingencies of the market. They can break apart and package risks to facilitate risk sharing. In the parlance of academic finance, they allow investors to better span the space of the states of nature. These objectives were the focus in the nascent years of derivatives, in the decade or so after the development of the Black-Scholes-Merton option pricing methodology and the establishment of the Chicago Board Options Exchange.

As time progressed, however, derivatives found use for less lofty purposes. Derivatives have been used to solve various non-economic problems, basically helping institutions game the system in order to:

- Avoid taxes. For example, investors use total return swaps to take positions in UK stocks in order to avoid transactions taxes.
- Take exposures that are not permitted in a particular investment charter. For example, index amortizing swaps were used by insurance companies to take mortgage risk.
- Speculate. For example, the main use of credit default swaps is to allow traders to take short positions on corporate bonds and place bets on the failure of a company.
- Hide risk-taking activity. For example, derivatives provide a means for obtaining a leveraged position without explicit financing or capital outlay and for taking risk off-balance sheet, where it is not as readily observed and monitored. Derivatives

also can be used to structure complex risk-return tradeoffs that are difficult to dissect.

These non-economic objectives are best accomplished by designing derivatives that are complex and opaque, so that the gaming of the system is not readily apparent.[1]

Viewed in an uncharitable light, derivatives and swaps can be thought of as vehicles for gambling; they are, after all, side bets on the market. But these side bets can pose risks that extend beyond losses to the person making the bet. There are a number of ways the swaps and derivatives end up affecting the market:

- Those who create these products need to hedge in the market, so their creation leads to a direct affect on the market underlying the derivative.
- Those who buy these instruments have other market exposures, so that if they are adversely affected by the swaps or derivatives, they might be forced to liquidate other positions, thereby transmitting a dislocation from one market into another.
- The market price of some derivatives can have real effects for a company. For example, the credit default swaps are used as the basis for triggering debt covenants, so if the swap spread for a company's debt rises above a critical level, it can have an adverse effect on the company. Indeed, a dislocation in the credit default swap market can have a more immediate and severe effect on a company than will a dislocation in its stock price, because the credit default swap spread has an impact on the ability of the company to obtain financing.[2]

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[1] For example, the last point, hiding risk-taking activity, is facilitated by the opacity of the risk-return tradeoff for derivatives. Any derivatives trader worth his salt can construct a derivatives position that will seemingly print money, in all likelihood generate cash flow month after month, but will get that cash flow by taking on a subtle risk which will rarely be realized, but when realized will have a profound negative effect. Without proper modeling, this risk will not be manifest until it is too late. This means that derivatives are the weapon of choice for investors who are faced with a need to book immediate gains.

It also means derivatives are a quick sale to naïve investors. There is no need to look back to P&G or Orange County for examples of this. I recently gave a talk to a group of central bankers from small countries, a number of whom had been plied with derivatives called dual currency swaps, though these were really options that gave the countries a payout in the worse performing of two currencies. In exchange for taking this relative currency risk, the countries received an incremental return of a few basis points. I did not do the calculation, but my bet is that this incremental return left a substantial buffer for the banks that sold the swaps. And that the countries entered into the swaps without recognizing the level of risk they were taking on.

[2] For this reason, there needs to be strict oversight of credit default swaps to guard against manipulation. Such oversight is far easier for if they are traded on an exchange.

- Derivatives can change the behavior of the market. For example, when various bonds are packaged into Collateralized Debt Obligations, they become linked in a way that they might not be absent this packaging. As a result, the diversification potential within the market can be lower and the potential for contagion between market segments can increase.
- Those who are writing OTC derivatives are in effect providing insurance to the buyers, but without any regulatory requirements on minimum capital. Those writing these instruments may not be in a well-capitalized position to pay out in the event that the option goes into the money.

Regulation of Derivatives

Standardization and Exchange Trading

As I point out in *A Demon of Our Own Design*, complexity is one of the demons that makes our financial markets crisis prone. Complexity hides risks and creates unexpected linkages between markets. Derivatives are the primary source of this complexity, so to reduce the risk of crisis we must address the derivatives markets. We need a flight to simplicity.

The proposal for a centralized clearing corporation, while a welcome step, is not sufficient to do this. It may reduce counterparty concerns, but it will not provide the necessary level of standardization, transparency, price discovery and liquidity. To do that, we need to have standardized derivative products, and have those products traded on an exchange. Standardization will address the complexity of derivatives. Exchange trading will be a major improvement in the transparency and efficiency, and will foster liquidity by drawing in a wider range of speculators and liquidity suppliers. These steps will shore up the market against the structural flaws that derivative-induced complexity have created.

Nonstandard OTC Derivatives and Innovation

One stated objection to standardization and exchange trading is that if a door remains open for complex OTC derivatives, then having the standardized products out in the light

of day will only accentuate the demand for the more shadowy and opaque products. An opposing objection is that the push toward standardization will squelch innovation in the financial markets. These concerns lead to demands by some to abolish all OTC derivatives, and by others to shrink from exchange trading. There is no need to move toward either of these two extremes.

Abolishing OTC derivatives is not a wise direction for regulation. There will be legitimate reasons for customized derivatives, and no doubt innovations will emerge with broad value to the financial markets. The point is not to stifle innovation, but to assure it is directed toward an economic rather than gaming end. Nor need exchange trading move activity into the shadows. Properly executed, we can have a combination of standardized exchange-traded instruments along with the continued development of customized OTC instruments.

Standardized exchange-traded derivatives will create high hurdles for any nonstandard OTC product a bank wants to push into the market. The OTC product will have worse counterparty characteristics, be less liquid, have a higher spread, and have inferior price discovery. To overcome these disadvantages, the nonstandard OTC product will have to demonstrate substantial improvement in meeting the needs of the investor compared to the standardized product.

In addition, stricter control and disclosure can be placed on nonstandard OTC derivatives both through investor demand and by regulatory mandate. Investors may demand that derivatives taken on their behalf be of the standardized exchange-traded form, or may require that if a nonstandard alternative is employed, it first be approved by the firm's risk manager. The regulator may mandate the disclosure of such derivatives positions and require a demonstration of how these instruments are being used and why they are being used in place of the standard instruments.[3] The disclosure might be public – investment

[3] The argument here is not for case-by-case approval of nonstandard products, nor for a regulator to dictate which derivatives can be traded OTC. The regulator does not have to make a determination that any one derivative is being employed for bona fide hedging purposes, or that the use of an OTC derivative is in some sense legitimate. By having on-going disclosure and justification, the investors and the regulators can see emerging patterns of abuse. There will be a point where a firm's use of the nonstandard products will move beyond the norm and will start to draw questions.

firms could justifiably balk at such disclosure now, but that justification is lessened if the firms have the choice of employing exchange-traded derivatives to avoid the disclosure – or, alternatively, the disclosure can be restricted only to the regulator.[4]

Even with these hurdles, there will still be the opportunity for innovation and for the application of the more complex derivatives where their value is compelling. But I believe we will not find many instances where a complex OTC derivative is pushed forward, because for most legitimate purposes the standardized products will be found to be adequate.

Incentives for Creating Complex OTC Derivatives

The current proposal for moving derivatives onto an exchange reminds me of a similar effort I made shortly after I arrived at Morgan Stanley twenty-five years ago. I proposed a simplified structure that would have allowed the interest rate swaps that were traded at the time to be replaced by a handful of standardized instruments. I met with the head of the swap desk and others running the Fixed Income Division to propose that this structure be put forward to allow exchange trading of swaps. I thought the proposal, which would have made the markets more transparent, liquid and efficient, would be greeted warmly, even enthusiastically. Was I wrong. I had yet to appreciate the incentives the industry has to make derivatives as complex and 'one-off' as possible.

For the bank, the more complex and custom-made the instrument, the greater the chance the bank can price in a profit, for the simple reason that investors will not be able to readily determine its fair value. And if the bank creates a customized product, then it can also charge a higher spread when an investor comes back to trade out of the product. For

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The disclosure could include standardized tagging of positions that will facilitate aggregation and analysis. In this regard, see "Mapping the Market Genome", http://rick.bookstaber.com/2009/02/markup-languages-and-mapping-market.html.

[4] Disclosure of exposures in a form that allows aggregation across firms is critical for systemic risk regulation. As it stands now, we do not have the ability to sort through the web of counterparty risk or the extent of leverage and crowding in markets. The required data is readily accessible by the regulator for exchange-traded positions, but more aggressive disclosure is required to obtain these data for OTC positions. On the need for disclosure for systemic risk management, see *Testimony of Richard Bookstaber , Submitted to the Senate of the United States, Senate Banking, Housing and Urban Affairs Subcommittee on Securities, Insurance and Investment, for the Hearing: "Risk Management and Its Implications for Systematic Risk", June 19, 2008.*

the trader, the more complex the instrument, the more leeway he has in his operation, because it will be harder for the bank to measure his risk and price his book.[5] And for the buyer, the more complex the instrument, the easier it is to obfuscate everything from the risk and leverage of their positions to the non-economic objectives they might have in mind.

These incentives explain why there is an ongoing arms race in innovative products and why the financial institutions might have to be pulled less than willingly into any initiative to standardize derivatives or to move derivatives from over-the-counter onto an exchange.

Conclusion: The Pace of New Regulation

We should move toward standardization and exchange trading of derivatives. We should do this because it is the reasonable direction to take, not as a reaction to the current crisis, and not predicated on whether derivatives did or did not behave in any particular way, or whether they were villains or innocent bystanders. The role played by the current crisis is to provide the impetus for action, for making improvements to the derivatives market independent of the final verdict that history passes down with respect to these recent, tumultuous years.

The arguments for standardization and exchange trading of derivatives are compelling. But there remains much we do not know. Therefore it is important to move slowly, one market at a time; learning by doing rather than pushing for quick, wholesale solutions. Because there are markets that are beyond the purview of the CFTC, indeed beyond our borders, the natural pace will be a gradual one.

[5] This suggests compensation should be withheld until a derivatives position is closed out and the profit is realized.