AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

S. HRG. 110–1006

RISK MANAGEMENT AND ITS IMPLICATIONS FOR SYSTEMIC RISK

HEARING

BEFORE THE

SUBCOMMITTEE ON
SECURITIES AND INSURANCE AND INVESTMENT

OF THE

COMMITTEE ON
BANKING, HOUSING, AND URBAN AFFAIRS
UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

ON

RISK MANAGEMENT AND ITS IMPLICATIONS FOR SYSTEMIC RISK

THURSDAY, JUNE 19, 2008

Printed for the use of the Committee on Banking, Housing, and Urban Affairs

Available at: http://www.access.gpo.gov/congress/senate/senate05sh.html

U.S. GOVERNMENT PRINTING OFFICE

50–407 WASHINGTON : 2010

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS

CHRISTOPHER J. DODD, Connecticut, *Chairman*

TIM JOHNSON, South Dakota
JACK REED, Rhode Island
CHARLES E. SCHUMER, New York
EVAN BAYH, Indiana
THOMAS R. CARPER, Delaware
ROBERT MENENDEZ, New Jersey
DANIEL K. AKAKA, Hawaii
SHERROD BROWN, Ohio
ROBERT P. CASEY, Pennsylvania
JON TESTER, Montana

RICHARD C. SHELBY, Alabama
ROBERT F. BENNETT, Utah
WAYNE ALLARD, Colorado
MICHAEL B. ENZI, Wyoming
CHUCK HAGEL, Nebraska
JIM BUNNING, Kentucky
MIKE CRAPO, Idaho
ELIZABETH DOLE, North Carolina
MEL MARTINEZ, Florida
BOB CORKER, Tennessee

SHAWN MAHER, *Staff Director*
WILLIAM D. DUHNKE, *Republican Staff Director and Counsel*
AMY S. FRIEND, *Chief Counsel*
MARK OSTERLE, *Republican Counsel*
DAWN RATLIFF, *Chief Clerk*
SHELVIN SIMMONS, *IT Director*
JIM CROWELL, *Editor*

SUBCOMMITTEE ON SECURITIES AND INSURANCE AND INVESTMENT

JACK REED, Rhode Island, *Chairman*
WAYNE ALLARD, Colorado, *Ranking Member*

ROBERT MENENDEZ, New Jersey
TIM JOHNSON, South Dakota
CHARLES E. SCHUMER, New York
EVAN BAYH, Indiana
ROBERT P. CASEY, Pennsylvania
DANIEL K. AKAKA, Hawaii
JON TESTER, Montana

MICHAEL B. ENZI, Wyoming
ROBERT F. BENNETT, Utah
CHUCK HAGEL, Nebraska
JIM BUNNING, Kentucky
MIKE CRAPO, Idaho
BOB CORKER, Tennessee

DIDEM NISANCI, *Staff Director*
TEWANA WILKERSON, *Republican Staff Director*

C O N T E N T S

THURSDAY, JUNE 19, 2008

	Page
Opening statement of Chairman Reed	1

WITNESSES

Donald L. Kohn, Vice Chairman, Board of Governors, Federal Reserve System	3
Prepared statement	33
Erik Sirri, Director, Division of Trading and Markets, Securities and Exchange Commission	5
Prepared statement	49
Scott M. Polakoff, Senior Deputy Director and Chief Operating Officer, Office of Thrift Supervision	7
Prepared statement	55
Richard Bookstaber, Senior Research Associate, Bridgewater Associates	20
Prepared statement	69
Richard J. Herring, Jacob Safra Professor of International Banking, and Co-Director, Wharton Financial Institutions Center, Wharton School, University of Pennsylvania	23
Prepared statement	79
Kevin M. Blakely, President and Chief Executive Officer, The Risk Management Association	27
Prepared statement	86

RISK MANAGEMENT AND ITS IMPLICATIONS FOR SYSTEMIC RISK

THURSDAY, JUNE 19, 2008

U.S. SENATE,
SUBCOMMITTEE ON SECURITIES, INSURANCE, AND INVESTMENT,
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,
Washington, DC.

The subcommittee met at 2:32 p.m., in room SD–538, Dirksen Senate Office Building, Senator Jack Reed, (Chairman of the Subcommittee) presiding.

OPENING STATEMENT OF CHAIRMAN JACK REED

Chairman REED. I will call the hearing to order, and I want to thank first the witnesses for joining us today. I know they made significant changes in their schedules to accommodate us, and I really appreciate that.

This is a technical hearing in some regard. It does not have some of the drama or melodrama that we usually have around here, but I think it is very, very important. And I think we have to focus on these issues, and this is an opportunity to do so.

The events of the past year exposed significant fault lines throughout our financial system. The impact of this financial crisis has been deep and broad. We have had financial firms with considerable writedown and losses, due mainly to their failure to recognize the risk embedded in complex financial products. This hearing will explore how supervisors oversee risk management at investment banks and seek to find ways to improve that supervision to reduce the likelihood that firm-level risk can expand throughout the economy.

Risk management is critical. We have seen firsthand that when done poorly, it has the potential to ripple throughout the wider economy and impact others who have probably never heard of a collateralized debt obligation or a mortgage-backed security. The decisions at these firms have not only resulted in a tremendous loss of value for investors who have seen their retirement and personal savings ended and eroded, but also imperiled the health of the wider economy.

Some of the losses may have been averted if risk management were better incorporated into the culture of these firms. Warren Buffett has commented that the chief risk officers should now be the CEOs. He draws attention to an important point. The top management must consider risk as an integral part of the decision-making, not as some control function off to the side.

The culture of risk management is all the more important in today's world given that both firms and products have become so complex. Some of these financial firms have grown so large that identifying the concentration of risk in subsidiaries and throughout firm activities and then aggregating those risks at the holding company is a very difficult project to achieve. Given this great complexity, systems and models used at firms to measure the attendant risk have also become much more intricate. Federal Reserve Bank of Boston President Rosengren recently noted, as others have as well, that models have their limitations. Relying solely on models is never the answer.

Along with failures in risk models, we have seen failures in decisionmaking at firms. During the boom times, no one wants to listen to the risk officer telling you not to make more money because the risks are too high. But those who do not heed these voices are among those with the largest writedown.

Regulators also need to be on top of the complex risk models and governance structures at these firms. With globalized markets and more market participants, we have greater points of possible failure that require attention. The U.S. subprime mortgage exposure was magnified throughout the world, with banks in Germany and France and investors in many other locales experiencing deep losses.

This reality requires a precise focus on risk management with sophisticated supervision that enforces the rules so that firms adhere to models of good governance and sound risk management. Discussions about the current regulatory structure have focused on this need to look at functional regulation, also systemwide oversight. This hearing is part of the broader dialog that ultimately must lead to action. The SEC and the Office of Thrift Supervision both look at risk at securities firms and investment banks at the holding company level. We also have the Federal Reserve onsite at these firms now. One has to ask if this is the most effective way to approach oversight and whether we are achieving the right outcomes.

Federal Reserve Bank of New York President Tim Geithner was recently quoted as saying that "Risk management and oversight now focuses too much on the idiosyncratic risk that affects an individual firm and too little on the systematic issues that could affect market liquidity as a whole."

Our regulators need the proper tools to keep an eye on the risks that build up throughout the system, not just in individual firms. In the case of Bear Stearns, it appears that regulators were not completely aware of the potential risk of its failure due in part to its counterparty exposures through credit derivatives, necessitating the Fed's involvement. We need a system where the regulators have a window into the risk at a systemwide level and can make informed decisions rather than decisions based on a lack of knowledge about risk and concentrations.

We are also in the process in this country of moving from the Basel I framework to a more advanced Basel II capital adequacy framework. This framework brings us closer to measuring capital based on risk, but also involves models which have limitations. To counter these limitations, we need to ensure that supervisors have the flexibility to put in place stronger capital requirements as nec-

essary, which falls under Pillar 2 of the Basel II model. Though Basel II will take some time to fully implement, we must address concerns now about how to improve risk management and its oversight by regulators.

There have been numerous reports by regulators to address some of these issues on risk management and systematic risk. Though these reports have recent vintage, the issues do not. The fact is that financial regulators have been talking about these risk concerns for quite some time. We need to ensure that studying these issues results in robust changes to the manner in which supervision is undertaken by regulators rather than mere discussion.

A larger question that comes out of all this has to do with risk taking at these firms. Is the risk that these firms are taking best in the long run? At what point might innovation be shorthand for creating complex financial products that camouflage risk and fail to add true economic value to investors and the economy? Innovation that merely adds to the bottom lines of financial firms but then ultimately leads to a bust, if that is the situation, then we have to do much, much more.

We are here, I think, to discuss a very technical but a very important topic, and I am pleased that our witnesses have joined us. I am also pleased that Senator Corker is with us, and, Senator, would you like to make an opening statement or any remarks?

Senator CORKER. Mr. Chairman, thanks for having the hearing, and out of respect for the witnesses, I would rather hear from them.

Thank you.

Chairman REED. Thank you very much, Senator.

We have three distinguished witnesses who are not strangers to this Committee. Dr. Donald Kohn is the Vice Chairman of the Board of Governors of the Federal Reserve System. Thank you, Governor. Dr. Erik Sirri is the Director of the Division of Trading and Markets, United States Securities and Exchange Commission. And Scott M. Polakoff is the Deputy Director at the Office of Thrift Supervision. Each of these gentlemen will talk about the risks that they oversee and what they are doing to implement recent findings. Your whole statement will be made part of the record, and if you would like to summarize, that would be entirely appropriate. Governor Kohn.

STATEMENT OF DONALD L. KOHN, VICE CHAIRMAN, BOARD OF GOVERNORS, FEDERAL RESERVE SYSTEM

Mr. KOHN. Thank you, Mr. Chairman. I do appreciate the opportunity to appear today to discuss several issues related to the oversight of financial institutions.

As Members of the Subcommittee are aware, 3 months ago the Federal Reserve Board approved the establishment of the Primary Dealer Credit Facility, or the PDCF. In taking this action, we judged that without increased access to the Federal Reserve's liquidity by major securities firms, overall financial market conditions would have deteriorated further and would have had a substantially adverse effect on our economy.

The PDCF, which was authorized for a minimum period of 6 months, makes available overnight funding to primary dealers. We

recognize that the existence of the PDCF could diminish primary dealers' incentives to maintain adequate liquidity and capital buffers, and thereby increase systemic risk. And as a lender, we need to increase our knowledge of the financial positions of our potential borrowers.

Accordingly, in connection with the establishment of the PDCF, we created a program in close cooperation with the Securities and Exchange Commission to monitor the funding and capital positions of primary dealers, focusing on those primary dealers not owned by financial holding companies supervised by the Federal Reserve.

We are currently working on an agreement with the SEC to enhance information sharing both for primary dealers owned by financial holding companies and those that are not. Broadly speaking, in spite of any moral hazard associated with the PDCF, we believe that primary dealers are strengthening liquidity and capital positions to better protect themselves against extreme events. We believe their management has learned valuable lessons from the events of the recent financial turmoil that can translate into better risk management, and we continue to monitor the effect of the PDCF and are studying a range of options going forward.

I would now like to discuss the Federal Reserve's recent activities relating to banking institutions we supervise. The Federal Reserve's broad supervisory responses to recent events include requiring banking institutions to improve risk management, augmenting existing supervisory guidance, and, where necessary, enhancing our own supervisory processes.

For instance, supervisors are reinforcing and strengthening their assessments and testing of fundamental risk management processes, requiring vigorous corrective action when weaknesses are identified. We are ensuring that institutions take a more comprehensive and forward-looking approach to risk management, understanding the potential for the risks to crystallize in times of stress. We have also redoubled our efforts to ensure that senior management properly defines overall risk preferences, creates appropriate incentives, and promotes firm-wide information sharing.

Residential lending is a particular sector requiring continued supervisory attention. We are reminding institutions that they should conduct rigorous stress tests of potential future losses related to residential mortgage loans, home equity lines of credit, and mortgage-backed securities. We continue to encourage lenders and mortgage servicers to work constructively with borrowers at risk of default and to consider prudent workout arrangements to avoid unnecessary foreclosures. And we are working to finalize the proposed amendments to the rules under the Home Ownership and Equity Protection Act proposed in December.

We have been stepping up our review of banks' concentrations in commercial real estate, especially in those areas of the country exhibiting signs of weakness. We continue to monitor credit card markets, other consumer lending sectors for potential weaknesses, and have taken steps toward improving consumer protection for credit card users. Leveraged lending is another key area of focus.

Consistent with the recommendations of recent reports, we are also looking at how firms are addressing weaknesses in counterparty credit risk management practices highlighted by re-

cent events. For instance, emphasizing that firms should use a variety of techniques, including stress testing and scenario analysis, to measure potential exposure of their contracts.

We are also working with the private sector to make the market infrastructure for financial transactions more robust and resilient. Our examiners continue to remind bankers that allowance levels, loan loss allowance levels, should be reflective of loan portfolio quality based on sound processed and consistent with current supervisory guidance. We are working with institutions to improve liquidity risk management practices through guidance and through one-on-one discussions. And even though the banking system remains well capitalized, we are evaluating banks' use of internal capital markets and whether firms adequately incorporate possible stress events in determining overall capital needs, and we are encouraging firms to raise capital.

Finally, the Federal Reserve is nearing completion of enhancements to its supervisory guidance to clarify our role as consolidated supervisor of bank and financial holding companies. Improving our role as consolidated supervisor, for which we rely on close coordination with primary supervisors and functional regulators, should provide broad benefits for the financial system and the economy.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Governor.

Dr. Sirri.

STATEMENT OF ERIK SIRRI, DIRECTOR, DIVISION OF TRADING AND MARKETS, SECURITIES AND EXCHANGE COMMISSION

Mr. SIRRI. Chairman Reed and Members of the Committee, I am pleased to have the opportunity this afternoon to describe the SEC's program for oversight of risk management practices at major investment banks.

Since the events of mid-March that culminated in the sale of Bear Stearns, the SEC has revised its analysis of the adequacy of liquidity and liquidity risk management at these firms. The SEC has also engaged broadly with both international and domestic regulators to consider the far-reaching implications of these events.

The Commission has strengthened liquidity requirements for the CSE firms. In particular, we are closely scrutinizing the secured funding activities of each CSE firm, with a view toward encouraging the establishment of additional term funding arrangements and a reduction of dependency on "open" transactions, which must be renewed as often as daily. We are also focusing on the so-called matched book of secured funding transactions where we are closely monitoring potential mismatches between the asset side, where positions are financed for customers, and the liability side of the matched book, where positions are financed by other financial institutions and investors. We are obtaining funding and liquidity information for all CSEs on a continuous basis and discussing with CSEs the amount of excess secured funding capacity for their less liquid positions.

Further, together with the Federal Reserve, we have developed additional stress scenarios, focused on the shorter duration but more extreme events that entail a substantial loss of secured fund-

ing, that will be layered on top of the existing scenarios as a basis for sizing liquidity pool requirements. Also, we have discussed with CSE senior management their longer-term funding plans, including plans for raising new capital by accessing the equity and the long-term debt markets.

The Bear Stearns' experience has challenged a number of assumptions, held by the SEC and by other regulators, related to the supervision of large and complex securities firms. The SEC is working with other regulators to ensure that the proper lessons are derived from these experiences and that changes are made to the relevant regulatory processes to reflect these lessons.

The work is occurring in a number of venues, including working groups operating under the auspices of IOSCO, the Basel Committee on Banking Supervision, the Financial Stability Forum, and the Senior Supervisors Group.

Because the CSEs now have temporary access to the Federal Reserve's Primary Dealer Credit Facility, which would operate as a backstop liquidity provider should circumstances require, the SEC is in frequent discussions with the Federal Reserve Bank of New York both about the financial and the liquidity positions of the CSEs and issues related to the use or the potential use of the PDCF.

The SEC and the Federal Reserve Board are nearing completion of a formal Memorandum of Understanding that would provide an agreed-upon scope and mechanism for information sharing, both related to the PDCF and other areas of overlapping supervisory interest. This MOU will provide one mechanism for the agencies to gain a broad perspective on key financial institutions and markets. This MOU will also provide a framework for bridging the period of time until Congress can address through legislation fundamental questions about the future of investment bank supervision, including which agency should have supervisory responsibility, what standards should apply to investment banks compared to other financial institutions, and whether investment banks should have access to an external liquidity provider under exigent conditions in the future.

Another area of ongoing regulatory concern relates to the volume of novations of OTC derivatives contracts, the related increase in collateral disputes, and other operational issues experienced by dealers during the week of March 10th. Further, the increased novation activity away from Bear Stearns during that week had signaling effects in the dealer community that may have contributed to the loss of confidence in that firm.

The SEC has been a long-time participant in the effort to improve the confirmation backlog of OTC derivatives, which has made substantial progress over the last several years, and continues to be involved in discussions with the industry on improving OTC market infrastructure. The SEC and other regulators, under the leadership of New York Federal Reserve President Tim Geithner, are discussing whether and how the market for OTC derivatives contracts might benefit from a central clearing counterparty and elimination of confirmation backlog, among other things. The dealer community is also moving forward on an initiative to improve

settlement of OTC contracts, a process that the SEC is also participating in.

These intensified efforts to enhance risk management build on an extensive foundation that has developed over the years since the SEC began the CSE program in 2004. The Commission has taken lessons learned from the Bear Stearns event to improve the supervision of the remaining investment banks and to enhance existing relationships with other supervisors to address the issues that these and other financial institutions are experiencing in the current turbulent conditions.

An imperative from the Bear Stearns crisis is addressing explicitly through legislation how and by whom large investment banks should be regulated and supervised, and specifically whether the Commission should be given an explicit mandate to perform this function at the holding company level, along with the authority to require compliance.

Thank you again for the opportunity to discuss these important issues, and I am happy to take your questions.

Chairman REED. Thank you very much, Dr. Sirri.

Mr. Polakoff.

STATEMENT OF SCOTT M. POLAKOFF, SENIOR DEPUTY DIRECTOR AND CHIEF OPERATING OFFICER, OFFICE OF THRIFT SUPERVISION

Mr. POLAKOFF. Good afternoon, Mr. Chairman. Good afternoon, Senator Corker. Thank you for inviting me to testify on behalf of OTS.

OTS' statutory responsibilities afford us the opportunity to observe risk management practices at commercial companies, depository companies, and investment banking companies. For example, we currently supervise holding companies such as General Electric, AIG, and Ameriprise Financial Group. Our supervisory program is internationally recognized by foreign regulators, including the U.K.'s FSA and France's Commission Bancaire, and has achieved equivalency status from the European Union.

In addition, we continue to supervise a number of commercial firms that own thrifts and were grandfathered by the Gramm-Leach-Bliley Act. These companies include General Motors Corporation, Archer Daniels Midland Company, John Deere Corporation, Nordstrom, and Federated Department Stores. These are all companies that own thrifts and are, therefore, deemed savings and loan holding companies. The Gramm-Leach-Bliley Act also confirmed that OTS is the responsible Federal agency for the consolidated supervision of an investment banking company that owns a thrift. As a result, we also supervise Merrill Lynch and Company, Morgan Stanley, and Lehman Brothers Holding. Our goal, obviously, is to work with the SEC, which is the functional regulator of the broker-dealer, to complete our legal responsibilities.

Because these investment companies own thrift institutions, they are subject to OTS' continuous consolidated supervision program that extends to the parent level as well as the thrift level. To provide some context, as of March 31st, Merrill Lynch's thrift held $31 billion in assets, Lehman Brothers' thrift had $12 billion, and Morgan Stanley's thrift had $5 billion.

Our risk-focused supervisory framework includes onsite and offsite monitoring, a rigorous risk assessment, in-depth or targeted on-site examination reviews by subject matter experts, regular reporting from the firms to us on key financial metrics, formal and informal discussions with senior leaders and risk managers within the organizations, and, importantly, coordination with functional supervisors in the United States and abroad.

In the course of our reviews, we evaluate the effectiveness of risk management, the strength of the financial control structure, the fitness of management, and the strength and integrity of the firm's earnings and financial condition. Further, our assessment of capital adequacy is handled on an individualized basis, with requirements tailored to the parent company's risk profile. Our principles-based approach focuses on regulatory outcomes over prescriptive rules. This approach has ensured strong capital foundations overall for thrift holding companies. In fact, our analysis of capital levels at savings and loan holding companies showed that they compare very favorably with the capital levels of bank holding companies and evidence of the strength of our regime.

We have worked closely with the firms and investors over the past year as they have raised significant sums of capital. Earlier this year, I met with John Mack and his Morgan Stanley team, Dick Fuld and his Lehman Brothers team, and John Thain and his Merrill Lynch team. These meetings were augmented by regular discussions between our supervisory staff and key leaders within the firm's risk control centers. This dialog is geared toward understanding the inherent risk in these institutions and ensuring OTS has the information it needs to make informed supervisory judgments.

While the firms have been cooperative with us throughout the process, I want to underscore for the Subcommittee the importance of regulatory cooperation as well. The Gramm-Leach-Bliley approach lays out a clear expectation that supervisors will coordinate and share information. This will continue to be our goal. We must ensure that there are no gaps in our supervision of these firms and no confusion on the part of the firms about the posture of regulators, particularly in times of market stress.

On this front, we are striving for a more cooperative relationship with the SEC. We believe a robust information-sharing understanding with the SEC is in the interest of both OTS and SEC, and we will continue to press for a more collaborative working relationship. At the direction of OTS Director John Reich and SEC Chairman Cox, Dr. Sirri and I, with our respective staffs, will meet again in 2 weeks to address this issue. As we fulfill our statutory obligations, we will continue our efforts to develop the type of relationship you expect from regulators in supervising these important firms.

Again, Mr. Chairman, thank you for the opportunity to testify. I look forward to your questions.

Chairman REED. Thank you very much. Gentlemen, thank you for excellent testimony. I will take about 7 minutes, then go to Senator Corker, and then probably do a second round, too, because I think we will have adequate questions for two rounds.

Let me just try to get a feel for some of the details of your regulation. I presume for this purpose, Governor Kohn, the Fed was recently on the scene with investment bankers, so you did not have a presence there with Federal Reserve personnel until very recently. Is that correct?

Mr. KOHN. That is correct. Our presence dates from the PDCF.

Chairman REED. Dr. Sirri and Mr. Polakoff, one area is the very sophisticated nature of the products that now are being created and kept on the books. Is there a product review by SEC or the OTS in terms of products that are being presented? And how is that done?

Mr. POLAKOFF. From our perspective, we try to work with the SEC. Many of these complex instruments take place at the broker-dealer. The SEC is the expert as the functional regulator for the broker-dealer, and we think from the Gramm-Leach-Bliley approach, it makes sense for us to defer to the SEC's opinion of these instruments and then to leverage off their work from a consolidated perspective.

Chairman REED. And, Dr. Sirri, is there an approval process?

Mr. SIRRI. Yes. Within firms there is an approval process for new products, and through our supervision, one of the things we look at is the quality of that approval process. In particular, anytime you structure a new product, you are worried about the risks it entails. So we focus on whether the firm properly understands the risks that are embodied in a new product, whether it has a sufficient control system within the firm to support introducing that new product.

Chairman REED. Let me just follow up. Without trying to be, you know, glib, is it a "check the box" thing, that they have a review and they have this and they have that, and that is fine? Or is it looking at or trying to really get into the nature of the product and the potential effect on the marketplace? And if that is the case, you know, who does that? Do you do that?

Mr. SIRRI. That is a good question. It is not a "check the box" process at all. So there are, in a sense, two aspects to it. What we are concerned about in particular is the firm's process for looking at new products. So we pay particular attention to how that works. Is Treasury involved? Are the risk managers involved? Do they have the proper infrastructure in place to support a new product?

Occasionally, new products will come up that particularly catch our attention. At that point, we will dive much deeper into that new product. My staff will occasionally, for example, conduct special studies about issues of concern. Those studies may focus on products; they may focus on processes. These studies could be months long, and they result in a specialized report that goes to both myself and members of the Commission.

Chairman REED. Do you have examples—or how routine is it for the SEC to object to a product and say, well, you cannot do this? Does that happen, or is this one where there is a negotiation about what they have to do to get it on the street?

Mr. SIRRI. As a general matter, we are not likely to object to a product per se because of its design features or we think it is not useful in the market or we think it might not serve—you know, it might not be well designed. That is highly unlikely.

It is quite possible, however, that we think a firm might introduce a product that might have, say, some embedded optionality in it or something about it that creates risk for which the firm does not have adequate controls or, say, for which the firm cannot adequately check how much of this is being sold or how it is being funded. Those are much more likely things that we are going to pay attention to.

Chairman REED. And let me ask you—and this is not about, you know, completely 20/20 hindsight, but looking at the Bear Stearns experience and the products that went through this process, has that caused you to reflect on how well a job you did or what changes you have to make, or were you satisfied that at least on the issue of product approval, it was adequate?

Mr. SIRRI. With respect to Bear Stearns, I think we are generally talking about mortgages and mortgage-backed securities. In late 2006, my staff finished a specialized report on mortgage products, not so much the approval product but a lot of risk management features around them, which leads one to naturally ask the question: If you studied such a thing, how could this go on? And the reason, I think, is because the kinds of risks that were embodied in these mortgage products, things we have talked about before, about correlation risks, about liquidity risk, were things that at the time were not properly understood, not properly appreciated. And I think the liquidity facilities that pool the liquidity necessary for those products were just not put in place.

Chairman REED. And that lack of understanding was on both sides, both the regulators and the proponents, the investment banks. Is that fair?

Mr. SIRRI. I think it is a fair statement that neither us, the street, nor other regulators appreciated all the attributes of these products, especially given what could happen to the market. I do not think any of us understood the rapidity with which liquidity could disappear from these markets. That was not a risk that was in our scenarios. I think, you know, we hear it talked about that as we go forward here, we are looking at new scenarios that account for such risk much more explicitly.

Chairman REED. Let me ask one question of all the panelists, and if I exceed my time, I will compensate. We have had a series of reports—the Senior Supervisor Group, the Financial Stability Forum, the Basel Joint Forum, the President's Working Group. Just today, I think, Secretary Paulson made another speech touching on issues of supervision and reform.

Given all these and the experience, what is at the top of your list, Governor Kohn, in terms of the two or three things you think are most important going forward?

Mr. KOHN. I think the three pillars of resilience for the system are capital, liquidity, and risk management, and those three are certainly at the top of our list. We have worked carefully and closely with the Basel Committee that just yesterday, I believe, or the day before, put out new guidance on liquidity management. And we will continue to work with the institutions we regulate and supervise on their liquidity management and how they are adequately readying themselves for the potential stress events, such as the type that Eric was talking about.

In capital, we are working again with the Basel Committee to look at how Basel II needs to be adjusted in light of the events we have seen for securitizations, resecuritizations, off-balance-sheet entities. And in risk management, we are going to our entities we supervise using the SSG report and other information we have, and those that were found not to be employing best practices, we are working very, very hard with them to bring them up to speed.

Chairman REED. Dr. Sirri.

Mr. SIRRI. I think I could easily resonate with the points that Vice Chairman Kohn made: capital, liquidity, and risk management. I would put a particular emphasis for our firms on liquidity, because our firms are investment banks, securities firms, liquidity is terrifically important to them. So while we certainly pay attention to risk management practices and capital, I would just emphasize a slightly even elevated level for us, for our firms' liquidity.

Chairman REED. Mr. Polakoff, please.

Mr. POLAKOFF. Mr. Chairman, I am going to add No. 1 as greed; No. 2 as appropriate risk management, not just risk management; and then three, liquidity.

Chairman REED. Can you elaborate?

Mr. POLAKOFF. Yes, absolutely.

So from the greed perspective, I think all of us at the table, but certainly OTS, has identified numerous situations where the risk management team brought to the proper senior management certain findings that would suggest it is time to either ease off the accelerator or start depressing the brake. Senior management has to take that information and make a decision, while at the same time recognizing such a decision is going to have a negative effect on revenues. What we saw was inappropriate action by senior management in some situations in doing so.

Now there is many different ways to address that situation. A common guy like me, it comes down to the greed issue.

Chairman REED. I appreciate that because that is a human motivation that seems to be ubiquitous and eternal, unfortunately. But how are you doing that now? I mean, are you requiring, for example, risk officers who make a recommendation that is denied to somehow memorialize that so you can review it later?

Mr. POLAKOFF. Interestingly, most of the firms have changed their own practices as a result of this turmoil. So we had some situations where we observed the risk management team reporting to the business line. Holy cow, that is unacceptable and needed to be fixed right away.

We had some situations where senior management was not sufficiently involved in hearing from the risk management team. Unacceptable, had to be fixed.

So actually, what has happened is the system has corrected itself most of the way. Unfortunately, the turmoil contributed to it.

Chairman REED. Just quickly—and excuse me, Senator—any comments about that from Dr. Sirri, in terms of correcting what seems to be these lapses in just the way risk is treated in the firm? Is that something you are working on, also?

Mr. SIRRI. It is, indeed. And I think the Senior Supervisor's Group report spoke very pointedly to the question of governance in these firms. We have been talking very generally about these firms

as if they are one. But they are, in fact, not one. We see considerable variation across the firms we supervise. Some of them have very strong risk practices generally, in particular, on the governance side. I think there are other firms that we have supervised that showed distinct weaknesses on governance.

And one of the things we noticed as this credit crisis progressed, was that we could see a relationship between the strength of those practices and some of the losses they took on their positions for various reasons.

So I think we believe very strongly that governance is important, things like reporting lines, internal prices, we pay a great deal of attention to and I think the credit crisis has emphasized how important that is.

Chairman REED. Governor Kohn?

Mr. KOHN. I completely agree. Risk management has to be integrated into every aspect of the institution's behavior and it has to have support from the very top of the institution, the board of directors, the CEO on down. Greed has been, as you said, Mr. Chairman, a natural driving influence on all of our behaviors to one degree or another. Compensation schemes can reinforce that. I think what we need is more robust risk management to offset the compensation schemes and the greed, and that is where we are all working.

Chairman REED. Thank you. Thank you all very much.

Senator Corker.

Senator CORKER. Mr. Chairman, thank you. I appreciate, certainly, the testimony of all of you and what each of you does to strengthen our financial environment.

Before I step into specific questions, can you give us a sense of whether you feel like the worst today—I mean, we are looking at systematic risk management. Is the worst over today during this episode, as it relates to Wall Street? Are we on the edge of another potentially market crushing moment? Without obviously mentioning specific entities, just overall the entities that you regulate, where would you say today that the health of those entities are in where we are today as it relates to this episode, if you will, we are dealing with? Each of you.

Mr. KOHN. I would say, Senator, that banks and the investment banks we work with the SEC on have improved their capital positions, reduced their leverage, improved their risk management, and tried to work—and worked very hard—on making their liquidity both longer term and more robust to stress events.

So I think we have come a long way. The markets are in a little bit better shape than they were—certainly a lot better shape than they were in the first half of March. But having said that, I do not think anybody can really guarantee what is going to happen next and what the risks are. So I would expect that we will see a gradual improvement in financial markets, that our institutions have taken steps to make that possible and to contribute to that. But there are no guarantees. And that is one reason why the three of us and those that we work with are working so hard on this risk management, liquidity, capital issue, to make the system more robust to the unexpected.

Mr. SIRRI. I think I would agree generally with that statement. There is nothing from my particular vantage point that gives me any unique ability to foresee the future or the future of credit markets that we have been talking about.

I will say that we are striving mightily to improve the resilience of these firms. We know more now about the kind of shocks they can experience and I think we are working strongly, mightily to get them to be more resilient to those shocks. Capital, liquidity, risk management, pillars that we have been talking about, these are the things that we are focusing on so that whatever the future portends that we have got a much better chance of coming through it strongly.

Mr. POLAKOFF. Senator, in addition to my colleagues' comments, what we have, I believe, is a loss of confidence by the consumer. And with two GDP quarters of under 1 percent, with consumer spending under 1 percent, with housing stock at over 10 months, this situation is going to take a while to work out. I think the regulators have a very robust program to work with the institutions that they have responsibility for. I think the institutions have instituted or continued with strong risk management programs. But we have a confidence issue in many different markets that will take a while to get to.

Senator CORKER. Dr. Sirri, Tim Geithner, I guess, just wrote a letter to the editor of the Financial Times suggesting that we ought to have a clearinghouse for some of the over-the-counter derivatives and simply things, standardize things to some degree. I am just wondering if you would comment on that and what that might do to the pricing of these derivatives and certainly just the effect that it would have should that be necessary?

Mr. SIRRI. I read that letter, so I know what you are speaking about.

The point of having a—the first thing to appreciate is the kinds of instruments that he was discussing, things like credit default swaps, are over-the-counter instruments. So they are simply bilateral contracts. They are you meeting me over the telephone, us agreeing to the terms to some sophisticated derivative instrument. In the end, I am exposed to you as a counterparty, by which I mean as the value changes over time I depend on you to pay me if you owe me money. There is no one else involved in that arrangement.

Over time, investment banks, securities firms, commercial banks develop networks of these contracts and they become very hard to keep track of. People are exposed to all kinds of risks because of it, many, many exposures. Some of them even building upon each other.

By creating a central derivatives clearinghouse of some type, what is known as a central counterparty, a certain amount of risk can be reduced from that system. There is really two types of risk. The first is that there may be some netting that is possible. If our derivatives contracts are sufficiently similar, you may have sold me something that I may have later bought from someone else, who may have in turn sold it to you, and we may all flatten out and level out, stopping payments from flowing and reducing risk.

The second thing that is true is that netting can occur, certain kinds of—excuse me, not netting can occur, but we have a central

counterparty. Once we have a central counterparty, I need to no longer worry about your particular credit. There is some entity that stands in the middle that is capitalized by some other group. So if you fail to make the payment to me, that other entity stands there.

Most people have familiarity with this when they buy a stock on the New York Stock Exchange or NASDAQ. No one every worries who sold them that stock. The reason is it does not matter. There is some counterparty sitting in the middle that takes the risk if the person who sold you the stock does not give it to you.

Senator CORKER. So you agree that that would be helpful?

Mr. SIRRI. I do.

Senator CORKER. And it appears that Chairman Kohn has a thought.

Mr. KOHN. Thank you, Mr. Chairman. I agree with what Erik said. I would just add the following. Because the risk is concentrated in a central clearinghouse, it is really crucial, critical, that that entity exercise appropriate risk management itself, that it have financial resources so that it can withstand the failure even of its largest participant, that it have good margining and risk management procedures in place.

So a central clearinghouse can reduce risks, but it concentrates risks. So once that risk is adequately taken care of, overseen by a regulator, I think it has all the advantages that Erik was talking about. But it does need that central clearinghouse to be very, very strong.

Senator CORKER. So I assume that both of you agree with Dr. Bookstaber, who is going to testify here in just a minute, that we have a new breed of quantitative number crunchers that have created mechanisms that only a handful of people understand, and we ought to simplify that to some degree, to a large degree?

Mr. KOHN. I am not familiar with his testimony, but I do think the market will be in the process of simplifying these instruments. That is part of the problem here, as the Chairman pointed out in his opening statement, that these instruments were so complicated and so complex, people did not really understand the risk associated. So I think the market is going to drive toward some simplification, standardization of a number of these instruments.

Senator CORKER. But how would we move toward—I could not agree more that something needs to be done to simplify. How would we move toward this clearinghouse-type mechanism being put in place?

Mr. KOHN. President Geithner and the other regulators are working with the private sector right now to see that they are moving toward a central clearinghouse and that that clearinghouse has the appropriate oversight and the appropriate risk control. So this is a process that is ongoing.

Senator CORKER. Speaking of the private sector, what role should the private sector play in risk management in that, in essence, they really have more dog in the hunt than even the regulators do because it is going to affect them directly. And I am just wondering what can be done to even enhance their ability, if you will, to do that?

Mr. KOHN. Well, I completely agree with you, Senator. It is really the private sector's responsibility to do this. The shareholders of

these firms are the ones who will lose if the risk management systems do not work. It is their incentive to make them work.

I think our job, as regulators, is to make sure that they are moving in the right direction, reinforce the incentives that the market has given, making sure that they are sufficiently robust so that their failure is much less likely, and their counterparties are sufficiently robust that if a major firm fails, then the system does not come down.

So we are reinforcing and building on market——

Senator CORKER. Is there anything else we can do, though, to empower their ability at the private level to do even more assessment——

Mr. KOHN. I think we are working very closely with them, both as a group in this counterparty risk management and on individual firms. And we are trying to act as a convener for the private sector to get together to take the collective action they need to take that would be very hard on an individual firm-by-firm basis to reduce the risk in the system. I think there is something we can do, and I think we are doing it.

Senator CORKER. I think you alluded to this earlier, but in essence these derivatives that are now so prevalent have concentrated risk instead of diversifying risk in many ways. Would you like to make a comment in that regard?

Mr. KOHN. They have diversified risk in a number of ways, but I think they were not as diversified as some people thought they were, and people were not as cautious about or as knowledgeable about the counterparties and the concentrations that they might have had. So I think fundamentally, the derivatives are very good at diversifying risk and spreading it out, but the people who use them need to be informed and understand better what they are doing.

Senator CORKER. Mr. Chairman, my staff has grabbed me for some reason to leave for a second. I have some questions for Scott. I do thank you for your thoughts, by the way, on the negative equity certificates and I thought that was a valuable contribution.

Mr. Chairman, I might step out and I may or may not be back. Thank you for your testimony.

Chairman REED. We hope you return, Senator.

Senator CORKER. Thank you, sir.

Chairman REED. Gentlemen, if I could follow up with some additional questions, following the line of Senator Corker about a potential clearinghouse for credit defaults swaps, would that require any legislative incentive or support?

Mr. KOHN. I do not believe it would require any legislation. I think it is in the process of happening. It will require regulatory approval. A central clearinghouse must be supervised and regulated, and the clearinghouse will have to decide who it wants to be regulated by and who will require—but I do not believe it requires any legislation.

Chairman REED. The choice of regulator would be theirs the way it is structured? In that sense it would be their choice or its choice?

Mr. KOHN. Essentially, I think.

Chairman REED. Dr. Sirri, any thoughts?

Mr. SIRRI. I think that is right. They will have to decide how it is structured. Those discussions are underway. So it depends on how it is owned, how it is structured, that will determine supervision.

Chairman REED. Let me ask a general question to all of you, and that is the—and you touched upon it previously. That is what is now a routine mechanism for coordination between your three agencies? As Mr. Polakoff pointed out, he has statutory jurisdiction over three investment banks. You have, essentially, jurisdiction on the compliance of the identity program of the remaining major investment banks. The Fed is now there because of their lending facility.

Is there a routine now in which information is shared on a regular basis? And getting to the point of, this would seem to me the first way you responded, systematic risk is getting all of the regulators around the table and talking about what they are seeing. Is that happening?

Mr. KOHN. Yes, it is, Mr. Chairman. Certainly, especially there is a lot of information sharing with the OTS. And that goes back a long way, sharing information about depository institutions on the FFEC, working with them on consumer mortgage regulations, things like that.

With the SEC, as both Dr. Sirri and I have noted in our testimony, we have stepped up the cooperation and coordination since the Bear Stearns crisis. And there is a lot of coordination, cooperation, talking back and forth.

And we are in the process of entering into a memorandum of understanding about these information sharing issues and other oversight issues.

Chairman REED. Your comments, Dr. Sirri?

Mr. SIRRI. I would say there is quite a bit of information sharing and cooperation going on. We each have different mandates within these organizations and so I think our views on them depend on our mandates. I think—and I will let Scott speak for himself—but there are thrifts that I think they pay particular attention to. We pay particular attention to the broker-dealer and certain issues around them. I think with the primary dealer credit facility has particular emphasis that the Fed has now.

With that said, there are common interests, as well as distinct ones. And I think we are striving to work together to make that more seamless. Chairman Cox and Chairman Rich have met together recently, as Scott said. I think we, with the Federal Reserve, are working on a memorandum of understanding.

So I think we are finding our way to new territory for us to find our way through this kind of a situation. I think we are making good progress.

Chairman REED. I presume you have identified gaps and that you are, through this coordination process, trying to fill those gaps. I presume also, since you have not requested any formal legislative approval that you are confident that those are regulatory matters not requiring any additional legislation? Why don't you comment, Scott?

Mr. POLAKOFF. Mr. Chairman, we are making progress. There is still more progress to be made. When we get away from the inside-

the-Beltway approach, the examiners in the field need to communicate better. And I do not think necessarily, Mr. Chairman, it is gaps. I think it is duplicative efforts. So when there are meetings, relevant meetings, all the right parties need to be at the table. When there is analysis, all the right parties need to see the analysis.

Each party will be better by leveraging off the product of each other, and I think we still need much more progress in the area, at least between Erik's team and my team. It may be with the Fed and the other banking regulators we simply have had a longer history and trust of working together.

Chairman REED. Any additional comments, gentlemen, in this general issue of getting it to be seamless?

Mr. SIRRI. Look, I think we all appreciate the importance that it has. We are in a unique time here. We are in a time where we have certain exigencies that have required us to work together in different ways.

One thing Chairman Cox has said, as we work through this, is that he sees this as a somewhat temporary solution and that ultimately we will need legislation here. You raised the legislation question. I think working together today we do not need legislation to fulfill, to see us through this temporary period here. But I think ultimately a legislative solution is needed for a number of aspects here.

Chairman REED. You raise the issue of temporary. Governor Kohn, the lending facility, by the nature of the expediency and the urgency and the extreme nature of your action, is temporary?

Mr. KOHN. That is correct.

Chairman REED. And so what would you anticipate being sort of the ballpark figure where you are no longer in this temporary mode and you have to pass the time to Mr. Sirri and then Polakoff, and therefore there might be the need for legislation? Can you elaborate? Or is that——

Mr. KOHN. With regard to the lending facilities themselves, we are looking at this issue right now and have a number of alternatives under consideration and are talking about this within the Federal Reserve. I am not prepared to say something right now.

I think part of the cooperation with Erik and his team is to look at, as he said in his testimony, this period of bridging two potential legislative actions. So I would say that even if those liquidity facilities, or when they begin to be wound down, we would expect still to have a cooperative relationship with the SEC.

Chairman REED. Let me ask you another question, Governor Kohn. We have talked about risk assessment. Dr. Sirri and Mr. Polakoff are sort of regulators. They do not have a fund like you do, and credit, and all those things. How about your risk assessment at the Federal Reserve in terms of the—particularly with respect to the collateral you have assumed from the Bear Stearns transaction. It was about $29 billion which you are liable for at this juncture?

Mr. KOHN. Right.

Chairman REED. And I am also under the impression that you are operating under accounting rules that are not the same ac-

counting rules that everyone has, in terms of recognizing the value. That is an issue, I hope, that you are looking at seriously.

Mr. KOHN. That we expect that transaction to settle on or about June 26th and we expect—as President Geithner said—to publish on a quarterly basis the value of these assets using market value, fair value accounting. I think we will be adhering pretty much to generally accepted accounting principles for that particular limited liability corporation. We understand our responsibility to be transparent about what we have and what the risks are that we have undertaken.

Chairman REED. Thank you.

A final question, and this goes to the—and you can probably help explain and increase my knowledge. But it strikes me that there are probably situations where you have looked very closely and you can look very closely legally at the regulated company, the investment bank, et cetera. But they have relationships with counterparties, with unregulated institutions, and many of them, I suspect.

How do you get the same confidence in their counterparty that you would have in the regulated entity? And is there anything we need to do to give you more authority in that regard? Start with Mr. Polakoff.

Mr. POLAKOFF. Mr. Chairman, many of the counterparties have rating associated with them. Frequently there is publicly available information. It does come down to concentration risk and it is simply one of the elements of a strong risk management program. How one measures counterparty risk, how one monitors counterparty risk, and then how one mitigates such.

So it can be done even when the counterparty, as you mentioned, is frequently unregulated.

Chairman REED. And you are confident, as best you can, that this counterparty risk evaluation is going on and it is adequate at the moment?

Mr. POLAKOFF. Yes, sir.

Chairman REED. Dr. Sirri.

Mr. SIRRI. Securities firms have all sorts of counterparties. I am going to primarily break them down into two. They could have counterparties because of proprietary trading that they do, and they could have counterparties that arise because of certain agency business they conduct.

So for example, the prime brokerage business is an important one, where we watch counterparty risk. Prime brokerage is a business where entities such as hedge funds come to securities firms for their financing for their trades, for lending of securities, these kinds of things. Counterparties become very important then.

Securities firms, the kind that we are talking about, have fairly well developed and very sophisticated counterparty risk management operations that go on there.

That said, they are continually evolving and through the shocks that we have seen, the kind of things that happened post-Bear Stearns, we have watched how those counterparties behave. Do they move contracts away from a particular firm? Do they shift all of their business? How quickly do they run?

And so one of the things we have learned from that is we had some beliefs on how they would behave before. Those beliefs have

changed. We have learned something about how they behave. Those new beliefs are being incorporated into the models that we have these firms run. And so we are cycling that through all these firms to say now that we know something, how counterparties behave under stress, let us learn from that. Let us cause all the firms to factor that into their models, resulting as you would expect, in increased liquidity, increased capital, increased demands for risk management.

Chairman REED. Governor Kohn.

Mr. KOHN. Sir, I would only add to what my colleague said, that this work that we are doing, that we have talked about on the infrastructure for the derivatives markets and the over-the-counter markets, is a very important aspect to controlling counterparty risk and managing counterparty risk. So the more seamless we have that flow of information and settlement and clearing, the easier it will be for the securities firms and the commercial banks to understand their risk, where it is, and then to manage it. So that is critical to that aspect.

Chairman REED. Thank you very much, gentleman. Thank you for your service. As always, it has been an enlightening session. Thank you very much.

Mr. KOHN. Thank you, Mr. Chairman.

Chairman REED. We will call the second panel forward.

[Pause.]

Chairman REED. Gentlemen, thank you for joining us this afternoon.

We are very pleased to have a distinguished panel of experts on the issue of risk analysis and risk assessment. Our first witness is Richard Bookstaber, a senior research associate at Bridgewater Associates. Mr. Bookstaber has a great deal of experience in the area of risk management, having worked in the field since the 1990s at Morgan Stanley, Salomon Brothers, and other firms. He brought this experience together in a book published last year titled "A Demon of Our Own Design: Markets, Hedge Funds, and the Perils of Financial Innovation."

Dr. Richard Herring is the Jacob Safra Professor of International Banking and Co-Director of the Wharton Financial Institutions Center at the Wharton School, University of Pennsylvania. He is the author of numerous articles and books on various topics in financial regulation, international banking, and international finance, including risk-related topics. He is co-chair of the U.S. Shadow Financial Regulatory Committee and a member of the Financial Economists Roundtable, the Advisory Board of the European Banking Report in Rome, and the Institute for Financial Studies in Frankfurt. Welcome.

Kevin Blakely is President and Chief Executive Officer of The Risk Management Association. Prior to this position, he was Executive Vice President of Key Bank in Cleveland, Ohio. He also served as chief risk officer of KeyCorp from 1994 to 2005, where he implemented a number of risk management processes. Before joining KeyCorp, Mr. Blakely was with the Office of the Comptroller of the Currency for 17 years.

Gentlemen, your statements are all part of the record, so if you would like to summarize or any variation thereof, please. Mr.

Bookstaber. Could you bring the microphone closer and push the button? Thank you.

STATEMENT OF RICHARD BOOKSTABER, SENIOR RESEARCH ASSOCIATE, BRIDGEWATER ASSOCIATES

Mr. BOOKSTABER. Thank you, Mr. Chairman. In the letter of invitation, we received three questions for discussion: the state of current risk management models and systems; the adequacy of risk management by risk officers and executive boards; what regulators could do to improve their response to future market problems; and how regulators can better equip themselves to monitor risk. I would like to address each of these questions in turn.

In terms of the state of current models and systems for measuring risk management, large financial institutions evaluate the risk of their positions on a daily basis using systems and models that I believe are well developed and are adequate for the risks they are designed to measure. The problem is that the systems are not designed to measure—and in the current state of the world perhaps cannot be designed to measure—the risks that we care the most about, which are the risks related to market crises.

To understand why they cannot, we must understand how market crises develop. Consider as an example a highly leveraged firm that has a sizable position in a market that is under stress. The firm faces losses and its collateral drops to the point that its lenders force it to start selling. This selling leads to a further drop in the market, which leads the collateral to decline still further, forcing yet more sales. This downward cycle reduces liquidity in the market so that the manager must start to sell positions he might be holding in some other markets. This selling drops the prices in these markets, and highly leveraged funds with exposure in these markets are then forced to sell. And thus the cycle propagates. The result is that the stresses in the first market might end up devastating another unrelated and perfectly healthy market.

As a simple example of the unlikely yet powerful linkages that can occur with this sort of dynamic, consider the silver collapse in 1980. The decline in the silver market brought the cattle market down with it. The improbable linkage between silver and cattle occurred because the Hunt brothers needed to raise capital to post margin for their silver positions when those declined, and to do so they sold off the cattle positions that they happened to hold.

Another example of this, the LTCM crisis in 1998, was precipitated by the default in the Russian debt market, even though LTCM did not have a substantial position in Russia. But some of those who did also had positions in markets where LTCM was active. When they were forced to sell in these markets, LTCM was caught up in the downward spiral. Many of these markets, such as Danish mortgage bonds, had nothing to do with Russia, save for the fact that they were in the crosshairs of the same leveraged investors that were holding the Russian debt exposure.

The point is that during market crises, the usual economic linkages and historical market relationships do not matter. Rather, what matters are questions of who owns what, who is under pressure to liquidate, and what else do they own. And as I will discuss

below, regulators do not have the requisite data to answer these questions.

In terms of the adequacy of risk management by risk officers and executive boards, I would have to say that whatever the limitations of the risk models and systems, these were not the culprits in the case of the multibillion-dollar writedowns over the past year. These positions were patently visible; no detective work or models were required.

Indeed, what occurred really leaves me scratching my head. It is hard to understand how this risk was missed. How can a risk manager see inventory grow from a few billion dollars to $10 billion and then to 30 and then $40 billion and not react by forcing the inventory to be brought down? My view is that it was a failure of management. The risk managers did not have the courage of their convictions to insist on the reduction of the inventory, or the senior management was not willing to heed their demands.

More must be required of the risk manager than monitoring and understanding risks. He also must have the willingness and independence to force issues up the chain of command. And, furthermore, the CEO must have the capacity to assess the risk manager's advice and have the willingness to take bold action.

Adequacy in these dimensions requires the correct incentives. As it stands now, those who are responsible for protecting the firm from unwarranted risks often have incentives that are more closely aligned with those of a risk taker.

So what can regulators do to improve their response to future problems in the market? Here I would like to put forward two points for consideration.

The first is establish a liquidity provider of last resort. In my October 2, 2007 testimony before the House Financial Services Committee, I proposed "the Government maintain a pool of capital at the ready to be the liquidity provider of last resort, to buy up assets of firms that are failing." The Federal Reserve's action with respect to Bear Stearns is along the lines of this proposal.

The reason for the Government to act as a liquidity provider of last resort is that by taking rapid and decisive action to infuse liquidity, regulators may break the cascade of an emerging crisis and curb a systemic threat.

The concept of a liquidity provider of last resort has already been employed successfully in the private sector. The large hedge fund Citadel has used its capital to buy up the assets of other hedge funds that were in distress, in one case with the failure of Amaranth and again with the failure of Sowood. Citadel's actions did not bail out the failing firms. These firms still went out of business. But its actions forestalled positions being thrown into a jittery, uncertain market, and thereby prevented the failure of one firm from cascading out to have a systemic effect.

Now, I hasten to emphasize that if the Government considers formalizing a role of this type, a liquidity provider of last resort to buy up assets of firms that are failing, it will not be stepping into the business of bailouts. There is no moral hazard problem because the firm will still fail. But the collateral damage will be contained; the market will not go into crisis, the dominos will not fall. And it

might be one of those rare Government enterprises that actually turns a profit.

Second, rethink the application of mark-to-market accounting. Marking positions to market is intended to price the positions according to what they would be worth if they were sold at the present time. The mark-to-market concept loses its meaning when applied during market crisis. Indeed, in times of crisis, mark-to-market accounting might even be destabilizing.

In a crisis the market is drained of liquidity. Many who otherwise would be natural buyers are facing large losses, yet others are running for the sidelines. In this situation a mark-to-market price is next to meaningless. If a financial institution has a large inventory, it could not sell at that price. And if the institution has no intention of selling, then the crisis-induced fire sale prices bear no relationship to what the positions will be worth in the long term.

But pricing inventory on a mark-to-market basis can end up being destabilizing. It might force yet more assets into the market because the institution might appear to be below a regulatory capital limit, or it might need to satisfy the covenants of its creditors. It might erode the market's confidence in the viability of the institution. In such cases, mark-to-market accounting will cause the crisis to become more severe.

I suggest regulators investigate the systemic risk implications of mark-to-market accounting rules.

Now on the last question, how regulators can better equip themselves to monitor risk, I would put forward two points.

No. 1, get the critical data. Prior to the recent financial crisis, my firm, Bridgewater Associates, performed an analysis of the incredible buildup of leverage in derivatives throughout the financial industry. The firm was able to put together a rough but useful picture; however, the clearest lesson from the exercise was how little anyone knew about where the risks lie.

Regulators are ill-equipped to monitor risk because they lack the right data. That is particularly true when we are looking at the issues of crises and potential systemic risks. As I have already mentioned, what matters for these risks is who is leveraged, what they own, and what they owe to whom. Yet regulators do not have the essential information to monitor leverage. Nor can they track the concentration of investors by assets or by strategies. Nor can they assess the risks at the foundation of the huge swap and derivatives markets because they do not know the positions of all of the counterparties—who owes what to whom and how losses would propagate if a set of counterparties failed.

It is important for regulators to determine the data that are necessary and then get access to these data. And getting the critical data may require looking not just at commercial and investment banks, but also at hedge funds.

Second, create a regulatory risk management function. In my congressional testimony, I suggested the need for "a regulatory body, a Government-level risk manager with a role perhaps modeled after that of industry-level risk managers." I am pleased to see a similar recommendation come forward from the Department of Treasury in the form of the role of the market stability regulator.

Such a regulatory body would acquire the relevant data and then use these data to monitor systemic risk. It would have the ability, either directly or in cooperation with other regulators, to put checks on the risk-taking activities of the institutions under its purview. It also would be the natural home for the liquidity provider of last resort. As with the issues of data acquisition, the success of such a function depends on it having oversight for all major risk-taking institutions, including hedge funds.

With this, I will close my prepared remarks. I thank the Chairman for inviting me to provide this testimony, and I look forward to your questions.

Chairman REED. Thank you very much, Mr. Bookstaber.

Professor Herring.

STATEMENT OF RICHARD J. HERRING, JACOB SAFRA PROFESSOR OF INTERNATIONAL BANKING, AND CO-DIRECTOR, WHARTON FINANCIAL INSTITUTIONS CENTER, WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA

Mr. HERRING. Thank you very much. Good afternoon, Chairman Reed. I am very grateful and honored for the invitation to testify here today.

I would like to address four questions in my allotted time. One is, How did Basel I contribute to the crisis, and would Basel II have prevented it? Second is, What weaknesses in Basel II have been highlighted by the crisis? Three, What lessons have been learned by risk managers and regulators? And, four, What additional regulatory tools need to be developed to limit systemic risk without exacerbating moral hazard?

First, how did Basel I contribute to the current crisis? Well, Basel I actually created very strong incentives for regulatory arbitrage, and subprime mortgages were a very good example of that. If a bank wished to hold a subprime mortgage on its own balance sheet, it would be charged a full 100-percent risk weight. On the other hand, if it created a special purpose entity off balance sheet and backed it up with a line of credit that was revocable and under 365 days, it would have a 0-percent capital charge. So by simply booking the asset, selling it to the special purpose entity, it could do that a number of times using its capital much more efficiently, generating fees for not only originating the loans but also servicing the loans and creating what was, in effect, an off-balance-sheet banking system.

Would Basel II have actually caused the system to be less prevalent? Optimists assert that Pillar 1 of Basel II would have reduced the incentives by requiring a modest capital charge for the short-term line of credit backing up the SPE. I am skeptical about whether that would have actually made much difference because the U.S. has had that rule in place for a couple of years, and Citibank actually had more SIVs outstanding than any other bank. It seemed not to have slowed it down at all.

Every optimist claimed that Pillar 2 of Basel II is designed exactly to prevent this sort of abuse from taking place. It enhances the scope for regulators to require capital above the regulatory minimum if they believe that the bank is exposed to some risks that are not well captured by Pillar 1 capital charges.

Again, I am skeptical that this will have much practical importance because bank supervisors have a very tough time in criticizing or disciplining banks that appear to be in good condition and are highly profitable. It has just never been very effective.

We have, in fact, a very good recent example of just how ineffective it can be. Only weeks before Northern Rock collapsed, the Financial Services Authority in Great Britain authorized it to use the IRB approach under Basel II, which reduced its capital requirement by about 30 percent, which was dividended out to shareholders, and there is absolutely no evidence that the FSA even contemplated adding a Pillar 2 capital charge to compensate for it, although it could have done so on grounds that the Pillar 1 charge was inadequate or that the bank was exposed to an illiquidity shock or that its business model was simply too risky. But none of those things happened, and I think it is, in fact, very hard for it to happen.

Finally, optimists say that Pillar 3, market discipline, would make a big difference because you would have better disclosure and better market discipline. I am skeptical on both counts, again. Pillar 3, as currently configured, does not really contemplate disclosure about SPEs or contingent commitments that would be at all useful to outside holders, although I understand that may well change at mid-year. Moreover, the way in which the authorities have dealt with this crisis has not really led to greater incentives for market discipline. In each of the cases—IKB in Germany, Northern Rock in the U.S., and Bear Stearns here—the authorities have acted in such a way that all counterparties and all creditors have been thoroughly protected from many of the consequences. And so there is really no incentive for market discipline in that.

What are some of the defects in Basel II that have been highlighted by the crisis? Well, I think, again, there are defects in each and every pillar. Pillar 1 has two ways of levying capital charges. The simple way is the Standardized Approach, and the Standardized Approach relies very heavily on ratings by the ratings agencies. This strikes me as having two problems, one of them rather subtle and the other one really very apparent after our recent problem.

The subtle problem is that the whole incentive for giving good, honest credit ratings changed markedly when the investors stopped paying for them, essentially, and it is made even worse when the demand for credit ratings is coming from regulated institutions that get lighter capital charges if they get better credit ratings. So I think it sort of adds to the pressures that tend to distort the credit rating system and lead to a world in which we have, say, structured credits and corporate credits bearing the same letter grades, even though they are strikingly different in actual risk.

More importantly, however, I think that relying on ratings may introduce an element of systemic risk that we did not have before. If the ratings agencies get it wrong for an entire category of securities that are widely held, then that can be a systemic problem as opposed to simply getting it wrong for a corporation or even a country, which usually has a much lesser effect on the broader system.

Pillar 2 is problematic because its treatment of liquidity is really very qualitative. I have not yet had a chance to study the new

guidance from Basel, but certainly improvement is highly warranted. More importantly, Pillar 2 leaves out any attention to reputational risk, yet it was concern over reputational risk that led a number of institutions to spend billions of dollars to take securities back into their books or to prop up funds. This happened with money market mutual funds. It happened even with some hedge funds. But probably most importantly of all, Pillar 2 completely ignores business risk, yet business risk has been responsible for about 18 percent of the volatility of U.S. bank earnings over time, and it is the fundamental reason that any business will hold capital. Yet it is really ignored by the Basel system.

Finally, with regard to Pillar 3, the new disclosures are really not adequate to help external investors understand the exposures of individual banks to either structured debt or SPEs. But, more fundamentally, I think Basel II is actually making it more difficult to compare capital adequacy across banks, both within countries and especially across countries. Part of this is because Basel II comes with lots of implementation options. The Europeans have well over 100 different options, which have to be understood to understand what the capital number actually means. Moreover, differences in risk models mean that the very same asset held in two different banks may well have a different capital charge associated with it, which also makes it very hard to compare across banks.

And, finally, although there have been attempts to achieve convergence between U.S. GAAP and IFRS or International Financial Accounting Standards, there are still huge differences. We got a glimpse of it recently when Deutsche Bank was obliged to go back to IFRS, having made the transition to U.S. GAAP previously. In January 2006, its treating position was 448 billion euros under U.S. GAAP, yet the same position counted as 1 trillion ten euros under IFRS. And that, too, creates problems in comparing across banks.

What are the lessons that have been learned by risk managers and regulators? Well, lessons are an important stimulus for learning, and there has certainly been a considerable amount of learning by losing over this time. One of the problems has been simply one of having the right information and acting on it. It is terrifically difficult for a very large, complicated institution to be able to actually understand its exposures across a wide range. The studies we have seen that compare the banks that have done reasonably well in the current crisis with those that have not, usually begin with a much better management information system. And beyond that is what you do with it, and a number of firms simply had the information on hand, but did not really act very quickly.

It is a matter of debate how soon you should have seen this coming, but I think, arguably, the losses that were reported by HSBC in February of 2007 were a time when any bank should have known that there was serious trouble coming down the pike. And yet we saw several institutions continuing to increase their participation in the market.

Several firms experienced great difficulty in assessing liquidity risk. It appears that often the treasury function was not really fully integrated in the risk management system, and so there was little contingency planning for off-balance-sheet commitments or

reputational commitments, such as funding sponsored money market mutual funds to enable them to avoid "breaking the buck." In some cases, this also involved sponsored hedge funds as well.

Firms also experienced problems within the traditional risk silos, as they are called in the business, which are usually market risk, credit risk, and operational risk. The crisis exposed some of the limitations of value-at-risk or VaR-like analysis, particularly in dealing with illiquid instruments that are exposed to credit risk.

They also showed a lack of attention to basis risk in hedging. There were correlations that simply did not work in the new crisis, and firms were very slow to realize that the changes were happening.

Stress test scenarios also failed to prepare some institutions for the conditions that actually occurred. The crisis also exposed weaknesses in credit risk analysis. First and foremost was the failure to comprehend the deterioration in underwriting standards that occurred. But in addition, many firms had trouble tracking their multiplicity of exposures to various borrowers and counterparties, and in a very big, complicated bank, it is a very big challenge.

With regard to operational risk, we have already commented on the weakness of many management information systems that were simply too slow to provide timely information about exposures across counterparties and products. But, also, I think there were problems in the lack of rigor for pricing systems. You could sometimes see the same asset priced differently if it were held in the firm's own portfolio or if it were being priced as collateral for a counterparty.

The crisis also exposed problems across the traditional risk management silos in firms that simply failed to realign their management to deal with the convergence of risk types in new products such as subprime-related debt. And there was a failure to anticipate the correlation to cross these risk types.

I really think I will not comment on what the regulators may have learned because you have just heard from them, and I think they are still in the process of letting us know what they have concluded. What I would like to conclude with, however, is a weapon that I think is essential but is missing from the regulatory toolkit.

In March, with the hastily improvised bailout of Bear Stearns, it seems to me the Fed crossed a regulatory Rubicon without the right weapons. They were very concerned that Bear was going to apply for bankruptcy, and we know that under a bankruptcy filing, the central feature is to impose stays. Stays can be incredibly disruptive in a firm that trades actively in markets and has primarily financial assets. The problem is, although they certainly have their merit in helping the courts understand who owes what to whom and how to get the best price, the problem in imposing stays in this kind of firm is that it can generate very substantial systemic spillovers. Clients and counterparties may lose access to their funds, and that causes problems for their own clients and counterparties in addition. And the lack of clarity regarding hedge positions also may transmit problems to other counterparties.

If Bear had been a bank, the Fed, working with the FDIC, actually would have had a highly appropriate tool for dealing with the problem. Bridge banks, which Congress developed during the late

1980s and have subsequently been adopted by the Japanese and the Koreans—and I am told the British are even interested—would have enabled the regulators—and it is not clear exactly which regulator in this case because it did not contemplate investment banks. But it would have allowed it to take over the institution temporarily, continue the systemically important features, and impose discipline on some counterparties that should have been monitoring more carefully.

Now that the Fed has actually crossed this regulatory Rubicon, it really needs to be better prepared for the next failure, even though we hope it does not come. Better resolution policies I think deserve a really urgent position on the policy agenda for both the United States and globally as well.

Thank you.

Senator REED. Thank you very much, Professor Herring.

Mr. Blakely, please.

STATEMENT OF KEVIN M. BLAKELY, PRESIDENT AND CHIEF EXECUTIVE OFFICER, THE RISK MANAGEMENT ASSOCIATION

Mr. BLAKELY. Chairman Reed, thank you for the opportunity to offer commentary today on the subject of risk management and systemic risk. I have been asked to address three specific issues: the state of current models and systems for measuring risk management at large financial institutions; adequacy of risk management by risk officers and executive boards, including the sharing of information and communication among senior management; and what regulators have likely learned about risk management and what they can do to improve their response to future problems.

Let me start by saying that the financial services industry is experiencing a great deal of difficulty today. It has been battered by a severe liquidity shortage and plunging valuations of market-based assets. Those problems are now giving way to the next stage of distress, and that is, deteriorating asset quality, which may result in a new round of credit-related losses.

Many have faulted financial models for playing a major role in the collapse of the capital markets, but I think that this charge is overstated. It is the human factor that played a greater role in the models' dysfunction. Humans built the models, fed them their historical data, provided the assumptions that drive them, and interpreted their outcome. Before we villainize models as the guilty party in the market's demise, we humans need to first take a look in the mirror and acknowledge our own significant role.

As an industry, we now have a greater appreciation of models' limitations and have discovered the need to supplement them with forward-looking analyses. The discipline of risk management is an evolving one. While many improvements have been made, many more are yet to come. Greater board-level attention on matters of risk will help. In that regard, financial institutions would be well advised to consider adding members to their boards who are conversant in risk management. Boards need to make certain that management focuses not just on revenue production, but also on the understanding of and pricing for risk that the company takes. Key elements that will facilitate such an outcome include defining a risk appetite for the company and implementing an appropriate

risk-based incentive compensation scheme. CEOs must play an active role in advocating the importance of risk and risk management. By witnessing the CEOs' interest in risk, subordinates would be compelled to follow suit. Such engagement fosters a healthy exchange of risk information, ideas, and strategies throughout the company. The CEO must also ensure that risk management is the responsibility of everyone in the company. Allowing abdication of that responsibility to the chief risk officer is a recipe for failure.

Regulators have already provided many valuable insights into the causes of the market turmoil and are taking steps to respond to it. They are also beginning to focus on the threats to the financial system specifically and to the economy more generally. By performing scenario analyses on financial sectors such as the credit derivatives market, as they are now doing, they are trying to anticipate problems before they have a chance to manifest themselves. Regulators have done a noble job of tempering a bad situation, despite having jurisdiction over only a fraction of the financial services industry. Changes to the scope of regulatory oversight of the industry, some of which have been offered by the current Treasury proposal, may assist in that regard. An increased level of dialog between regulators and boards of directors on risk governance will help elevate its importance and understanding. Further, with the insights gained from their oversight role, regulators are in a great position to share sound risk management practices throughout the industry. Although much work needs to be done to remediate deficiencies revealed by the market crisis, all concerned parties must be cautious in their approach. Overreaction can make a tenuous situation only that much worse.

That concludes my opening remarks, and I would be pleased to answer any questions you might have. Once again, thank you, Mr. Chairman, for the opportunity to offer comment.

Chairman REED. Thank you, Mr. Blakely. Thank you all, gentlemen, for excellent and thoughtful testimony.

I know Professor Herring declined to comment on how well the regulators are doing, but my impression is that they are taking it extremely seriously, that they are looking at all the places that we would want them to look, but I think it is significant—and perhaps you might comment, all of you, please—that, you know, they did not suggest that there were any limitations in access to data or, as you would say, Professor, the right information. And I just wonder, not in sort of a "gotcha" sense, but in a sense of what you think specifically they should be doing—they very well might be doing it, but what they should be doing to sort of deal with what we have learned from this crisis to date. Let's start with Mr. Bookstaber and go right down the panel.

Mr. BOOKSTABER. I was sort of surprised, looking at their testimony versus my recollection being on the other side. I did not quite see the level of interaction that was described there, and that may just be because of the time that has passed since I was in these positions on the sell-side firms.

The key thing that I think is missing in regulation in the United States is a true partnership with the risk management people inside the firm. I always felt that the FSA model was a very good model. And it contrasts quite a bit from what I would think of as,

say, the SEC model. You know, the SEC model is one where you have a legalistic view. You tend to work through subpoenas and so on, and basically it has a formalistic rule-based approach.

The alternative is to have somebody on the regulatory side who has risk management expertise actually work more closely with the risk manager within the firm. He can also serve almost as an ombudsman, so that if the risk manager observes a risk which he thinks is of concern and maybe he is not getting the ear of senior management or they disagree with him, here is an outside, objective party who can look at it and can escalate it in a way that he cannot. So that may be a way of getting around some of the problems that we observe with incentives or with senior management that either does not care about or does not understand risk within an organization.

The other difference is that if you are rules based in how you do risk management and you work on the basis of rules and regulations, you get into a gaming situation, because you set a barrier and the game then is for the financial institutions to find ways to get around that barrier, whether it is going off balance sheet or creating some innovative swap. And so the result is not only that you defeat the regulation, but that you increase the complexity of the market in the process so that the regulation actually is counterproductive.

So that, again, suggests a move more toward the notion of what I think of as the FSA approach to risk management.

Chairman REED. Thank you.

Professor Herring, as you pointed out, FSA with respect to Northern Rock seemed to—I guess the moral of the story, there is no perfect form of regulation.

Mr. HERRING. Yes, I think that model does not look quite as sparkling as it did perhaps a year ago, although I am in general agreement with the point that Mr. Bookstaber is making. The kinds of improvements that appear to be headed in the future are really more in the line of sort of refining and adding to what is already an enormously prescriptive system. We have moved from a very loose system in some sense to something that is enormously detailed and hideously complex. And the kinds of improvements we see indicated in some of these documents, although the details are really not available to us on the outside, strike me as heading us in the direction of still more complexity and still a more prescriptive setting.

I agree that fundamentally it is a losing game. The regulators are never going to be quick enough or astute enough or have enough resources to catch up with the very innovative capital markets and the bankers that are really innovative.

What should be done? Well, it seems to me that the regulators have to enlist the assistance of market discipline, that the market discipline is the only real prospect for keeping up with the incredible kinds of innovations going on in these institutions.

Now, you have to ask where that market discipline should come from, and it probably would not be the shareholders, because the shareholders have a very different payoff function than society or creditors or the regulators. They will want to try to maximize the

present value of their investment, but they have no incentive to take account of spillover effects.

On the other hand, creditors and counterparties do. Creditors and counterparties have a lot at stake if they actually believe that they are going to have to live with their choices. But my concern about the trend of bailouts over the last year is that creditors and counterparties are being pretty much assured that if it is a very large, very complicated institution, they are not going to have to worry. And I think that makes the system fundamentally more dangerous. I think we need to work toward a system where absolutely no institution is too big, too complicated, too interconnected to fail. And I think, in fact, we should have live, active plans to actually unwind any one institution, and that means having communications with press officers and knowing exactly who goes in where, because in that event you have some real prospect of market discipline. And if you use the bridge bank kind of format, you can do it without having massive disruption and spillovers in other markets.

Chairman REED. Thank you.

Mr. Blakely, the same general issue. You know, what do you think the regulators learned? What should they be learning? What should they be doing? And, obviously, give them credit for working hard at this issue.

Mr. BLAKELY. Absolutely, they are, and I think they deserve a lot of credit for what they have done so far. And, in fact, as we talked throughout the industry, the industry itself is very grateful for what the regulators have done.

But as I think about what more could they be doing, I think that one of the things that I would really encourage them to do is focus on the risk governance process in institutions, because I am not sure that that is an area that enough financial institutions are paying sufficient attention to. And the ways that they can do that is the regulators can make a pretty good assessment of is there a sufficient risk expertise at the board level; and, second, is the CEO adequately involved in the process of risk management; and, third, do both the board as well as the CEO understand what they're incenting their employees to do.

And I think by having frank discussions between the regulators themselves and the board of directors directly, we cannot underestimate the power of those kinds of conversations. Speaking from personal experience, I know that it is quite influential.

Chairman REED. Thank you. For the information of the panelists, we have a vote scheduled shortly, so I—this could go for many, many hours given the expertise that we have assembled. But let me ask a final question—that is, pending written questions that you should be prepared to accept.

We have talked about and focused and the last few comments have been on enterprise risk, understanding the CEO of all the different subsidiaries, et cetera, and that is an issue you just addressed. But then there is the larger question for the regulators, the systemic risk, and I am just wondering—you might comment again, Mr. Blakely, and we will go down the line about what we have to do if we get enterprise risk right, I think you have commented, to ensure that we get systemic risk. Is it about data? Is

it about formalized communication between regulators? Is it, as Professor Herring suggests, kind of making sure that the moral hazard issue has been removed and it is the market itself that regulates?

Mr. BLAKELY. Well, clearly, I believe that the involvement of the Fed in the broader financial markets is a good thing. They have a history of dealing with the financial services industry in a way that some other regulatory agencies do not. They bring a breadth of experience and, frankly, tools to the table that other regulatory agencies may not. I think that they need to have a greater and deeper understanding of what goes on inside of individual institutions so that they can make an adequate assessment as to what type of a risk that poses to the industry at large. I also believe, too, that the regulators should work collectively together to try and identify systemic risks such as they are doing right now with regard to the credit markets—I mean the credit derivatives market, where they are bringing together folks from the industry as well as other regulatory agencies to try and understand in advance before a disaster happens just what might happen and what are the alternative courses of action.

Chairman REED. Thank you.

Professor Herring.

Mr. HERRING. I would certainly agree with Kevin's point. In addition, I think one might try to rethink how stress tests are devised. Typically, regulators are very reluctant to specify particular stress tests because they feel the institution will know what is most appropriate for its own conditions. But I think there is room for both. I think the regulators, in order to tell systemic effects, really ought to have at the same point in time returns from all institutions regarding particular stress scenarios so that they can anticipate what the market-wide consequences might be.

I think there is another source of systemic risk that has sort of crept into the system without anybody paying much attention to it, and that is the sheer institutional complexity of our larger institutions. One of our institutions, for example, has 2,400 majority-owned subsidiaries, and they are in more than 90 different countries. It presents an incredible obstacle, I think, to the managers of that institution, but surely to the outside world to understand what in the world is going on. And I think that there is great merit and greater simplicity in institutional structure as well as in looking at stress tests that will cover all institutions.

Chairman REED. Thank you.

Mr. Bookstaber, please. Can you turn your microphone on, please?

Mr. BOOKSTABER. I could comment a little bit on those two points, the stress test and the complexity. In my book, I focused on two components I thought were responsible for a lot of what we observe in market crises. One was leverage and the other was complexity. And the focus was on the complexity of innovative securities and derivatives, but also I had one chapter called "Colossus," which used Citigroup as a case study. And it is interesting, I wrote that chapter in 2004, but the story was the same then as it is now, that when you get an organization that is as big as some of the organizations we observe, it is hard to get your arms around all of

the risks and everything that is going on. And the solution is not simply to have a risk management structure that is bigger and bigger and bigger, because all that tends to do is diffuse the information flow. So I think what we need is a flight to simplicity, both from the structure of the types of instruments that we use and from the nature of the organizations.

In terms of stress testing, this gets back to a point that I made in my oral remarks and in my written testimony that the problem is we do not have the data to stress what we need to stress. It is one thing to pose a scenario and stress based on that scenario; and if you do that, usually the scenario that you will choose is something that is based on history or based on the normal financial and economic relationships. But when a crisis finally occurs, what is driving it is a firm that is very leveraged, they are forced to sell, and then they have to sell in some other market where they are also big.

So every time a large institution changes its positions, the nature of the risks that potentially can occur will also change. So ultimately, to really understand where a crisis might emerge and how it will propagate out, you finally need to know who is highly leveraged, what do they own, who else is leveraged, and what are the relationships between them. And those are where the stress tests have to be taking place, and the essential data still does not exist for the regulators to do this sort of stress test.

Chairman REED. And is that something—just a quick follow-up question. That is something that you think would be appropriate for regulators to begin to collect on a systematic basis? Is it possible to do that, or is it——

Mr. BOOKSTABER. I think it is appropriate. I think you have to do it in a way that is very careful to realize the proprietary nature of the data, because we are talking about leverage and position data where, if other institutions knew about it, they could trade against the people and they actually would be adverse to liquidity in the market. This is sort of a technical point, but with the use of markup languages and so on, these types of data, though vast and varied, can be standardized in a way that they are relatively easy to collect compared to the way they used to be historically. So I do not think there is really a technological issue, and the key point, as I mentioned earlier, is you have to do it for all risk-taking organizations.

Chairman REED. Well, gentlemen, thank you very much for your excellent testimony. My colleagues may have written questions which they would submit through the Chair, and I will set a June 26th deadline. We would forward them to you, and we would ask you to respond within a week or two. But thank you very much for excellent testimony, and I have to run off for a vote. But we appreciate very much your participation.

The hearing is adjourned.

[Whereupon, at 4:18 p.m., the hearing was adjourned.]

[Prepared statements supplied for the record follow:]

For release on delivery
2:30 p.m. EDT
June 19, 2008

Statement of

Donald L. Kohn

Vice Chairman

Board of Governors of the Federal Reserve System

before the

Subcommittee on Securities, Insurance, and Investment

Committee on Banking, Housing, and Urban Affairs

United States Senate

June 19, 2008

Chairman Reed, Ranking Member Allard and members of the Subcommittee, it is my pleasure to appear today to discuss several issues related to the oversight of financial institutions. First, I will discuss the circumstances leading to the establishment of our temporary facility for lending to primary securities dealers and our arrangements for monitoring their financial condition. Then, I will describe Federal Reserve activities related to the banking institutions we supervise, including concrete steps to address identified issues and to help these institutions improve risk management practices. Finally, I will briefly summarize planned enhancements to our consolidated supervision of bank and financial holding companies.

Federal Reserve Monitoring Activities Related to the Primary Dealer Credit Facility

Three months ago, the Board approved the establishment of the Primary Dealer Credit Facility (PDCF). This action was taken pursuant to Section 13(3) of the Federal Reserve Act, which empowers the Board of Governors to authorize a Federal Reserve Bank to lend to a corporation, including a securities firm, in "unusual and exigent" circumstances when the corporation cannot "secure adequate credit accommodations from other banking institutions." In doing so, the Board of Governors made the necessary statutory finding that market circumstances were indeed unusual and exigent. We judged that without increased access to Federal Reserve liquidity by major securities firms, overall financial market conditions would have deteriorated further and would have had a substantially adverse effect on the economy.

We fully recognized that the use of this legal authority was an extraordinary step, but considered it necessary given the circumstances. To quickly design and implement a facility to provide this liquidity, we made use of existing business relationships with a group of 20 securities firms, known as primary dealers. The Open Market Desk of the Federal Reserve Bank of New York trades U.S. government securities with primary dealers to implement monetary

policy on behalf of the Federal Reserve System. The PDCF makes available overnight funding to sound primary dealers in the form of loans secured by collateral eligible to be pledged in open market operations, plus investment-grade corporate, municipal, and mortgage-backed and asset-backed securities. The PDCF was authorized for a minimum period of six months.

Most of the primary dealers are owned by either U.S. or foreign banking organizations that have been approved as U.S. financial holding companies. The U.S. financial holding companies owning primary dealers are subject to consolidated supervision by the Federal Reserve, but for the primary dealers within financial holding companies we rely extensively on the Securities and Exchange Commission (SEC) as functional regulator. The SEC, rather than the Federal Reserve, serves as consolidated supervisor for the major U.S. investment banks with primary dealers. In connection with the establishment of the PDCF, we created a program to monitor the financial and funding positions of primary dealers, focusing on those primary dealers not owned by financial holding companies. From the beginning, we have coordinated closely with the SEC, and we are currently working on an agreement with that agency to enhance information sharing both for primary dealers that are part of financial holding companies and for those that are not.

The objectives of our PDCF monitoring program are: (1) to establish the basis for an informed judgment by the Federal Reserve of the liquidity and capital positions of the primary dealers accessing the PDCF; and (2) to minimize the risk that the availability of financing under the PDCF undermines the incentives for the consolidated entity to manage capital and liquidity to levels appropriate for a sustained period of market disruption.

The Federal Reserve's monitoring program for primary dealers includes a limited on-site presence at the four largest investment banks and has a narrower focus than our broader

supervision and examination of state member banks, bank holding companies, and the U.S. operations of foreign banking organizations. Specifically, the Federal Reserve is not supervising investment firms comprehensively to assess risk management. Rather, our purpose is specifically to assess the adequacy of liquidity and capital.

To support our monitoring efforts, which are closely coordinated with the SEC, we receive internal information from the firms on a daily basis that enables us to identify changes in the level and composition of the firms' holdings of cash and unencumbered, highly liquid assets. We also receive qualitative information regarding the posture of counterparties and clients toward the firms, including the extent, if any, to which the firms are encountering difficulty in rolling over secured and unsecured funding. In addition, along with the SEC, we are assessing the firms' current and planned capital positions in light of their near-term earnings prospects. In both of these areas--liquidity and capital--we are evaluating the firms' efforts and, with the SEC, providing feedback to their senior management teams.

Broadly speaking, we believe that primary dealers are strengthening liquidity and capital positions to better protect themselves against extreme events. We also believe their management has learned some valuable lessons from the events of the recent financial turmoil that should translate into better risk management. We continue to monitor the effect of the PDCF and are studying a range of options going forward.

Federal Reserve Supervisory Activities

I would now like to discuss the Federal Reserve's recent activities relating to banking institutions we supervise. As I noted in testimony before the full Committee on June 5, recent events have highlighted a number of risk management lessons for banking organizations, many

of which have been documented in recent public reports.[1] In that testimony, I outlined the Federal Reserve's broad supervisory responses to recent events, which include requiring banking institutions to improve risk management, augmenting existing supervisory guidance, and where necessary, enhancing our own supervisory processes.

Naturally, the risk management lessons from recent events vary by institution, since the types of deficiencies differed and some institutions fared better than others. Thus, in our supervisory efforts, we are taking these broad lessons and applying them to each institution as needed. But we can point to some general areas where we are focusing supervisory attention and encouraging better risk management at banking institutions. For one, supervisors are reinforcing and strengthening their assessments and testing of fundamental risk management processes, requiring vigorous corrective action when weaknesses are identified. We are ensuring that institutions take a more comprehensive and forward-looking approach to risk management across the entire firm, and are more intensely verifying assertions made by bank management about the robustness of their risk management capabilities.

Supervisors are also ensuring that banks understand the full spectrum and the scale of the risks inherent in increasingly complex banking activities and the potential for their risks to crystallize in times of stress. In particular, banks must focus on the inter-relationships among risk types, not just with respect to those areas that precipitated recent events, but more broadly.

In light of recent events, we have redoubled our efforts to ensure that senior management properly defines overall risk preferences and creates incentives for employees to abide by those

---

[1] President's Working Group on Financial Markets (2008), "Policy Statement on Financial Market Developments," March 13, www.treas.gov/press/releases/reports/pwgpolicystatemktturmoil_03122008.pdf;
Financial Stability Forum (2008), "Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience," April 7, www.fsforum.org/publications/FSF_Report_to_G7_11_April.pdf;
Senior Supervisors Group (2008). "Observations on Risk Management Practices during the Recent Market Turbulence" March 6, www.newyorkfed.org/newsevents/news/banking/2008/SSG_Risk_Mgt_doc_final.pdf.

preferences, such as effective firm-wide limits and controls. We are reminding banks of the importance of information-sharing throughout the entire organization and of the dangers of information silos. In addition, we are strongly encouraging institutions to improve and/or build out their risk functions, so that independent risk managers are empowered to dig deep for latent risks, including concentrations that often arise only in times of stress.

Having given some general thoughts on current supervisory issues and supervisory approaches to improving risk management, I would now like to turn to a few specific areas in which we are addressing the challenges facing institutions and helping bring about improvements in their risk management.

Residential lending

Risks associated with residential mortgage and home equity lending remain a top supervisory priority due to the continued negative trends in home prices, elevated levels of delinquencies and foreclosures, and slack demand for residential mortgage securities in the secondary markets. Banks continue to experience losses on residential first mortgage loans, especially, but not exclusively, on nonprime lending. Losses on home equity loans are also increasing significantly, even for lenders not heavily involved in subprime lending, and loss severities as a percentage of outstanding exposure on this product are greater than for first lien loans. And mortgage securities markets whose instruments are not supported by government-sponsored entities continue to be adversely affected by problems in the housing market, complicating banks' risk management in this sector.

Supervisors are acting on several fronts to address problems related to residential first and second mortgages. First, we are making sure institutions comply with our existing guidance on nontraditional mortgages and on home equity loans, issued in 2006 and 2005, respectively, as

well as guidance on subprime lending issued last year. And we are evaluating institutions based on the risk management practices discussed in those guidance documents. We expect institutions to conduct rigorous stress tests of potential future losses related to residential mortgage loans, home equity lines, and mortgage-backed securities. We continue to encourage lenders and mortgage servicers to work constructively with borrowers at risk of default and to consider prudent workout arrangements to avoid unnecessary foreclosures. As you know, the Federal Reserve believes that prudent workout arrangements that are consistent with safe and sound lending practices are generally in the long-term best interest of both the financial institution and the borrower.

Furthermore, we are working to finalize the proposed amendments to the rules under the Home Ownership and Equity Protection Act that we proposed in December. The proposed amendments, which would apply to all creditors, would better protect consumers from a range of unfair or deceptive mortgage lending and advertising practices that have been the source of considerable concern and criticism. Our proposal includes key protections for higher-priced mortgage loans secured by a consumer's principal dwelling and addresses concerns about a lender's assessment of a borrower's ability to make the scheduled payments, including verification of the consumer's income and assets. The proposal also addresses concerns about prepayment penalties and the adverse impact on consumers of lenders failing to escrow for taxes and insurance. Protecting consumers also has benefits for lenders because it should reduce delinquencies and defaults that can occur when consumers do not understand or cannot afford certain types of loans. We are working toward issuing final regulations in July.

Commercial real estate lending

Commercial real estate (CRE) lending is another area that requires close supervisory attention. In 2006, well before CRE markets began to soften, property values began to level off or decline in certain markets, and fundamentals began to turn somewhat negative, the Federal Reserve and other banking agencies issued guidance on CRE concentrations. We were concerned that the increasing concentrations of CRE loans in the portfolios of many banks, especially small and medium-sized lenders, made them more vulnerable to a softening in this market if the risks were not well managed. Since then, delinquencies on construction loans have begun to rise, particularly for residential construction loans, and they are expected to rise further. Those institutions with high CRE concentrations in geographic areas suffering real estate pressures will likely bear losses. Further, the significant slowdown in the origination of commercial mortgage-backed securities will reduce banks' options to manage CRE portfolio risks through the secondary market.

As I noted in my March testimony on the condition of the U.S. banking industry, we have been stepping up our reviews of state member banks and bank holding companies exhibiting concentrations in CRE, especially in those areas of the country exhibiting signs of weakness. We continue to monitor banks' adherence to the supervisory guidance I just noted. These efforts include monitoring carefully the potential impact of lower valuations on CRE exposures. Through those reviews, we are identifying weaknesses in banks' risk management practices, including underwriting practices, appraisal processes, stress testing, and market analysis. Based on these results, we are updating our supervisory plans and examination schedules to focus our resources most effectively on those institutions presenting the greatest risk and needing the most improvement. Finally, we just concluded a Federal Reserve examiner training effort on CRE

topics, including appraisal practices, loan loss allowances, stress testing, and board and management oversight. The training focused on the importance of ensuring prudent risk management practices, without unduly curtailing credit availability.

Counterparty credit risk

Concerns in financial markets about the creditworthiness of some financial intermediaries have eased somewhat since the first half of March, but those concerns remain relatively high. More fundamentally, the proper management of counterparty credit risk--which is the risk of loss from a counterparty's failure to perform its financial obligations--is a prerequisite for protecting the entire system from contagion when any one institution fails.

Consistent with the recommendations of recent reports, we are looking at how firms are addressing weaknesses in counterparty credit risk management practices highlighted by recent events, including the measurement and aggregation of exposures stemming from a wide range of transactions with both unregulated and regulated entities. For instance, we are emphasizing that firms should use a variety of techniques to measure potential exposure on over-the-counter (OTC) derivatives, repurchase agreements, and other contracts, and that they should aggregate all exposures to each counterparty. In this context, we have been closely monitoring counterparty exposures arising from transactions with monoline financial guarantors and have been discussing with banks the measurement and management of these positions.

In addition, we are working to strengthen the market infrastructure for financial transactions to make it more robust and more resilient. In particular, the Federal Reserve Bank of New York continues to work with domestic and international prudential supervisors of OTC derivatives dealers to strengthen the infrastructure for those large and rapidly growing markets. The supervisors are emphasizing to the major dealers and to other active market participants the

importance of setting standards for the accuracy and timeliness of trade data submission and for the timeliness of resolutions of errors in trade matching for OTC derivatives contracts. Furthermore, consistent with the recommendations made in recent reports on turbulence in financial markets, supervisors are encouraging the development by the industry of a longer-term plan for an integrated operational infrastructure supporting OTC derivatives that captures all significant processing events over the entire lifecycle of trades, delivers operational reliability, and maximizes the efficiencies obtainable from automation and electronic processing platforms. In addition to supporting more robust exposure measurement and capture, these enhancements should strengthen participants' ability to manage counterparty risk through loss mitigation techniques such as the use of netting and collateral agreements. We are encouraged by recent industry efforts to address counterparty credit risk, such as plans to extend central counterparty clearinghouse services to credit derivatives and other initiatives.

Credit cards

Credit card charge-offs have continued to rise over the past several quarters, although charge-offs remain well below their early 2002 peak. Not surprisingly, some banks report that delinquency rates for unsecured consumer debt are generally higher in areas that have experienced significant home price depreciation and increased unemployment. In response to these trends, many issuers are tightening credit standards and reducing exposures in these higher risk markets. Rising delinquencies and increased card usage that has been reported in recent months are likely to push charge-off levels higher in future quarters. Therefore, we will continue to monitor credit card markets and other consumer lending sectors for potential weaknesses.

The Federal Reserve has also taken steps toward improving consumer protection for credit card users. Our first step was the Board's 2007 proposal to substantially revise and

improve credit card disclosures under the Truth in Lending Act. In preparing this proposal, we conducted extensive consumer testing to determine the type and format of information that consumers find most useful in shopping for and choosing a credit card. This extensive consumer testing--and the thousands of public comments on our proposal--suggested that disclosures may not provide sufficient consumer protection with regard to certain practices. Therefore, we recently proposed rules under the Federal Trade Commission Act to protect consumers from financial harm caused by those practices. If implemented, the proposed rules would require financial institutions to make changes to their business models and to alter some practices. The Federal Reserve developed this proposal jointly with the Office of Thrift Supervision and the National Credit Union Administration. We are continuing to use consumer testing as we work toward issuing final rules for credit cards by year-end.

Commercial lending

Commercial lending activity, aside from a few sectors such as leveraged lending, has not been markedly affected by the recent volatility in the financial markets, but may encounter more difficulty should slow economic growth persist. Lenders and investors are demanding stricter underwriting standards and higher returns for commercial loans. With regard to the condition of existing commercial loan portfolios, delinquencies have been rising recently as has the volume of criticized assets. This has been most evident in the leveraged loan market, where lending standards appeared to weaken noticeably in recent years, and which tends to be more susceptible to soft economic conditions.

Supervisors are monitoring banks' commercial lending activities, particularly leveraged loan portfolios, to detect weaknesses in asset quality that may result from slowing economic conditions and to ensure appropriate risk management practices. In part, the agencies rely on

their Shared National Credit (SNC) program to assess the credit quality of banks' commercial loan portfolios. The 2008 review is now underway and will provide additional insight into the condition of large syndicated credits that are shared by three or more banks, including an evaluation of underwriting practices and trends in the leveraged loan market and the broader syndicated loan market.

Adequacy of loan loss allowance

As the banking system has faced a more difficult environment in recent quarters, our examiners have identified significant weaknesses at some institutions in identifying and reserving against problem loans, which in some cases have led to deficiencies in allowance levels at some supervised institutions. In response, our examiners continue to remind bankers that allowance levels should be reflective of loan portfolio quality, based on sound processes, and consistent with current supervisory guidance. We recently provided additional clarity to our examiners regarding existing interagency guidance on loan loss allowances that should be factored into current examinations and inspections of state member banks, bank holding companies, and their nonbank subsidiaries. We believe this further clarity to our examination staff will help them in their regular discussions with bankers to ensure that reserving practices are robust and loan loss allowances are indeed adequate to the circumstances facing each institution.

Liquidity risk management

Recent reports cite the need for enhancement to liquidity risk management as one of the key lessons from recent events. Financial institutions must understand their liquidity needs at both the legal entity and enterprise-wide level and be prepared for the possibility that market liquidity may erode quickly, unexpectedly, and for a protracted time. As is now widely recognized, many contingency funding plans did not adequately prepare for the possibility that

certain off-balance-sheet exposures might have to be brought onto the firm's balance sheet, calling on available liquidity. Nor did they adequately account for the possibility of widespread and protracted declines in asset market liquidity. While liquidity pressures in banking and financial markets have eased of late, we do recognize that institutions must prepare themselves for the possibility that liquidity problems could return, either market-wide or at an individual institution.

Supervisors are working with institutions to improve liquidity risk management practices. For instance, we are reviewing banks' contingent funding needs and sources of funding. We are ensuring that bankers develop appropriate short-term and long-term liquidity risk management strategies. Consistent with the findings of recent reports, we are emphasizing the importance of appropriate stress testing of liquidity needs and maintenance of robust liquidity buffers. In addition, we worked with our colleagues on the Basel Committee on Banking Supervision to enhance existing guidance on the management of liquidity risks, which was released two days ago. That work was drawn from recent and ongoing efforts on liquidity risk by the public and private sectors and is intended to strengthen banks' liquidity risk management and improve global supervisory practices. Of course, the Federal Reserve has undertaken a number of programs to bolster market liquidity.

Capital needs

Clearly, capital is a critical defense against unexpected losses. Even with the recent turmoil, the U.S. banking system remains well capitalized. However, as I noted in my June 5 testimony, we are encouraging institutions to raise capital as needed, in part so that they will be well positioned to take advantage of future opportunities and to support a strengthening of financial conditions and a rebound in economic growth. And the recent capital injections into

banking organizations and other financial institutions are a good sign that investors see value in those institutions and in the banking industry as a whole.

To assess the sufficiency of firms' capacity to absorb unexpected losses from a wide range of sources, Federal Reserve supervisors have heightened their review of capital analysis and forecasting at banking organizations. Examiners are reviewing the reasonableness of assumptions banking organizations use to assess capital needs and are emphasizing forward-looking analysis. For example, we are evaluating banks' use of stress scenarios to see if they adequately incorporate a range of possible events and properly identify potential capital needs and capacity across the firms. The scenarios address a number of possible factors including unexpected balance sheet expansion, earnings deterioration across key business lines, and stress-level losses generated by a variety of positions and multiple sources.

In addition, last year the Federal Reserve conducted a review across a number of large banking organizations to assess these firms' use of so-called "economic capital" practices, which are a means for firms to calculate, for internal purposes, their capital needs given their risk profile. Consistent with other findings, we found that some banks relied too extensively on the output of internal models, not viewing model output with appropriate skepticism. Models are dependent on the data used to construct them. When data histories are short or are drawn mostly from periods of benign economic conditions, model results may not be fully applicable to an institution's risk profile. We concluded that banks would generally benefit from better evaluation of inputs used in their internal capital models, stronger validation of their models, and broader use of stress testing and scenario analysis to supplement the inherent limitations of their models. We are incorporating the results of this horizontal review in our current assessments of banks' overall capital adequacy, as well as using it to evaluate banks' readiness to meet the

requirement in Pillar 2 of Basel II that banks develop their own internal process to assess overall capital adequacy, beyond regulatory capital measures.

Consolidated Supervision Program

The supervisory activities just described are intended to address many of the risk management lapses seen over the past year, some of which pertain to shortcomings in firm-wide risk identification and measurement. Consistent with our regular efforts to improve supervisory practices, we realize that our program of consolidated supervision could be enhanced and made more systematic. Supervising a consolidated banking organization requires review of all risks on an enterprise-wide basis, not just review of the risks contained in each subsidiary legal entity. To this end, the Federal Reserve is nearing completion of enhancements to its supervisory guidance to clarify our role as consolidated supervisor of bank and financial holding companies.

The updated consolidated supervision guidance, which will be publicly available, is primarily intended to provide greater clarity to our own examination staff. For example, it provides for more consistent Federal Reserve supervisory practices and assessments across institutions with similar activities and risks, detailing expectations for understanding and assessing primary governance functions and risk controls, material business lines, nonbank operations, funding and liquidity management, consumer compliance, and other key activities and risks. In this sense the forthcoming guidance is very consistent with the Federal Reserve supervisory actions I have just described. The enhanced guidance will help us better identify and address firm-wide issues at supervised banking organizations, while also promoting better risk management.

I want to make clear that consolidated supervision of bank and financial holding companies in the United States generally works well, with strong, cooperative relationships

between the Federal Reserve and other relevant bank supervisors and functional regulators. Indeed, much of the supervisory work I just described is being done in cooperation with primary supervisors and functional regulators. Information sharing among relevant supervisors and regulators is essential to ensure that a banking organization's global activities are effectively supervised on a consolidated basis, and we have worked over the years to develop and enhance interagency coordination and information sharing. But as institutions grow larger and more complex, we need to ensure that our system of consolidated supervision keeps pace.

Finally, it is worth noting that the Federal Reserve's umbrella supervision role closely complements our other central bank responsibilities, including the objectives of fostering financial stability and deterring or managing financial crises. The information, expertise, and powers derived from our supervisory authority enhances the Federal Reserve's ability to help prevent financial crises, and to manage such crises should they occur, working with the Treasury Department and other U.S. and foreign authorities. In this manner, enhancements to our consolidated supervision program, which include close coordination with primary supervisors and functional regulators, should provide broad benefits for the financial system and the economy.

Testimony Concerning Oversight of Risk Management at Investment Banks

Erik Sirri
Director, Division of Trading and Markets
U.S. Securities & Exchange Commission

Before the Subcommittee on Securities, Insurance, and Investment
Committee on Banking, Housing, and Urban Affairs
United States Senate

June 19, 2008

Chairman Reed, Ranking Member Allard, and Members of the Subcommittee:

I am pleased to have the opportunity this afternoon to describe the Securities and Exchange Commission's program for oversight of risk management practices at the major investment banks. Since the events of mid-March that culminated in the sale of The Bear Stearns Companies, Inc., the SEC has revised its analysis of the adequacy of capital and liquidity and is currently directing investment banks supervised under the voluntary Consolidated Supervised Entities ("CSE") program to undertake additional stress testing at the holding companies. The SEC has also engaged both international and domestic regulators in a cooperative manner to provide information and to discuss the broader policy implications of these events, which I shall describe shortly.

The SEC has broadly strengthened liquidity requirements for CSE firms. In particular, we are closely scrutinizing the secured funding activities of each CSE firm, with a view to encouraging the establishment of additional term funding arrangements and a reduction of dependency on "open" transactions, which must be renewed as often as daily. We are also focusing on the so-called matched book, a significant locus of secured funding activities within investment banks. Here we are monitoring closely potential mismatches between the "asset side", where positions are financed for customers, and the "liability side" of the matched book, where positions are financed by other financial institutions and investors. We are obtaining funding and liquidity information for all CSEs on a daily basis, and discussing with CSEs the amount of excess secured funding capacity for less-liquid positions. Further, together with the Federal Reserve we have developed additional stress scenarios, focused on shorter duration but more extreme events that entail a substantial loss of secured funding, that will be layered on top of the existing scenarios as a basis for sizing liquidity pool requirements. Also, we have discussed with CSE senior management their longer-term funding plans, including plans for raising new capital by accessing the equity and long-term debt markets.

The Bear Stearns' experience has challenged a number of assumptions, held by the SEC and by other regulators, relating to the supervision of large and complex securities firms. The SEC is working with other regulators to ensure that the proper lessons are derived from these experiences, and changes are made to the relevant regulatory processes to reflect those lessons.

This work is occurring in a number of venues, including working groups operating under the auspices of IOSCO, the Basel Committee on Banking Supervision ("Basel Committee"), and the Financial Stability Forum. For example, we have engaged with the Basel Committee in response to Chairman Cox's call for new standards for liquidity risk management by internationally active sophisticated institutions. Also, the SEC continues to improve its prudential oversight of capital, liquidity, and risk management at all CSEs in response to what was learned at these and other institutions during recent market events. Staff's focus on practices related to valuation, stress testing, and accumulation of concentrated positions dovetails with the recommendations of recent reports issued by the FSF, Basel Committee, and Joint Forum.

Further, on a regular basis, the SEC, including SEC staff from the CSE Program, participate in several interagency regulatory efforts focusing prospectively on the impact of the current credit crisis, including the Senior Supervisors Group (SSG), the FSF vulnerabilities group, and the Basel Committee Policy Development Group. These coordinated meetings bring together financial supervisors for the full range of systemically important financial institutions in an effort to identify emerging issues and to coordinate a supervisory response across various jurisdictions.

Because, the CSEs now have temporary access to the Primary Dealer's Credit Facility ("PDCF"), which would operate as a back-stop liquidity provider should circumstances require, the SEC is in frequent discussions with the Federal Reserve Bank of New York both about the financial and liquidity positions of the CSEs, and issues related to the use and potential use of the PDCF.

The SEC and the Federal Reserve Board are nearing completion of a formal Memorandum of Understanding that would provide an agreed-upon scope and mechanism for information sharing, both related to the PDCF and other areas of overlapping supervisory interest. Under the current statutory framework no agency is charged with the stability of the financial system broadly, so this MOU will provide one mechanism for two of the critical agencies with responsibilities in this area to gain a broader and continuous perspective on key financial institutions and markets that could impact the stability of the financial system. This MOU will also provide a framework for bridging the period of time until Congress can address through legislation fundamental questions about the future of investment bank supervision, including which agency should have supervisory responsibility, what standards should apply to investment banks compared to other financial institutions, and whether investment banks should have access to an external liquidity provider under exigent conditions in the future.

Another area of ongoing regulatory concern relates to the volume of novations of OTC derivatives contracts, the related increase in collateral disputes, and other operational issues experienced by dealers during the week of March 10th. A novation of an OTC contract effectively closes a contract with one counterparty through assignment of the contract to another counterparty. As an example, a hedge fund seeking to close a contract with a counterparty could effectively agree with a derivatives dealer to eliminate its obligations to the original counterparty by assigning the contract to the dealer. This has the effect of eliminating the hedge fund's exposure to the original counterparty. The volume of such novations spiked during the week of March 10th, exposing operational challenges related to returning collateral and posting new collateral, the exhaustion of credit limits at dealers asked to accept novations, and the need for

extensive analysis when portfolios of contracts were presented for novation. Further, the increased novation activity away from Bear during that week had signaling effects in the dealer community that may have contributed to the loss of confidence in the firm.

The SEC has been a long-time participant in the effort to improve the confirmation backlog of OTC derivatives, which has made progress over the last several years, and continues to be involved in discussions with the industry on improving OTC market infrastructure. The SEC and other regulators, such as the Federal Reserve, are discussing whether and how the market for OTC derivatives contracts might benefit from a central clearing counterparty and elimination of confirmation backlog, among other things. The dealer community is also moving forward on an initiative to improve settlement of OTC contracts, a process the SEC is participating in. A central counterparty, such as a clearing house, ideally would be sized to handle spikes in transaction volume, would promote certainty of contract settlement and so, minimize risk, as well as reduce the negative effects of misinformation and rumors that may occur during high volume periods.

These intensified efforts related to risk management build on an extensive foundation that has developed in the years since the SEC began the CSE Program in 2004. The Commission currently supervises the following U.S. securities firms on a group-wide basis: Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley. For such firms, referred to as consolidated supervised entities, the Commission oversees not only the U.S.-registered broker-dealer, but also supervises the holding company and all affiliates on a consolidated basis, including other regulated entities and unregulated entities such as derivatives dealers. The Commission's supervision of CSEs is primarily concerned with the risks that counterparties and market events potentially pose to the CSE firms and thereby to the regulated broker-dealers and other regulated entities.

When a CSE firm has a regulated entity in the consolidated group that is subject to oversight by another functional regulator, the Commission defers to that functional regulator as the supervisor of the regulated affiliate. We also share relevant information concerning the CSE holding company with our fellow regulators, both domestically and internationally. The sharing of information between regulators is a critical component of the supervisory regime and is a key driver behind the upcoming MOU with the Federal Reserve.

While maintaining broad consistency with Federal Reserve holding company oversight, the CSE program is tailored to reflect two fundamental differences between investment bank and commercial bank holding companies. First, the CSE regime reflects the reliance of securities firms on daily mark-to-market accounting as a critical risk and governance control. Second, the design of the CSE regime reflects the critical importance of maintaining adequate liquidity for holding companies that, until recently, did not have access to an external liquidity provider.

The CSE program has five principal components: First, CSE holding companies are required to maintain and document a system of internal controls that must be approved by the Commission at the time of initial application. Second, before approval and on an ongoing basis, the Commission staff examines the implementation of these controls. Third, CSEs are monitored for financial and operational weakness that might place regulated entities within the group or the broader financial system at risk. Fourth, CSEs are required to compute a capital adequacy

measure at the holding company that is consistent with the Basel Standard. Finally, CSEs are required to maintain significant pools of liquid assets at the holding company, for use in any regulated or unregulated entity within the group without regulatory restriction.

More specifically, in electing to operate under the CSE program, the holding company must, among other things, compute on a monthly basis its group-wide capital in accordance with the Basel standards. To put it simply, just like commercial banks, CSEs are subject to consolidated regulatory capital requirements. Further, the holding company must provide the Commission on a periodic basis with extensive information regarding its capital and risk exposures, including market and credit risk exposures, as well as an analysis of the holding company's liquidity risk.

With respect to regulatory capital measures, CSEs are expected to maintain an overall Basel capital ratio at the consolidated level of not less than the Federal Reserve Bank's 10% "well-capitalized" standard for bank holding companies. CSEs provide monthly capital computations to the SEC, applying the same Basel II standard that is currently used by European financial institutions and will soon be adopted by U.S. commercial banks. In fact, Commission staff have been for the past several years heavily engaged, working together with other supervisors in the U.S. and Europe, in refining these rules to more completely address the technical issues of particular importance to securities firms. CSEs are also required to file an "early warning" notice with the SEC in the event that certain minimum thresholds, including the 10% capital ratio, are breached or are likely to be breached. And, beginning with their second quarter filings with the Commission, the CSE firms will disclose their capital positions, in addition to the liquidity positions that are currently disclosed.

In addition to capital, liquidity and liquidity risk management are of critical importance to broker-dealer holding companies. Due to the importance of liquidity to the firms, CSEs have adopted funding procedures designed to ensure that the holding company has sufficient stand-alone liquidity and sufficient financial resources to meet its expected cash outflows in a stressed liquidity environment where access to unsecured funding is not available for a period of at least one year. Another premise of this liquidity planning is that any assets held in a regulated entity are unavailable for use outside of the entity to deal with weakness elsewhere in the holding company structure, based on the assumption that during the stress event, including a tightening of market liquidity, regulators in the U.S. and relevant foreign jurisdictions would not permit a withdrawal of capital. Following the recent events at Bear Stearns, this long-standing scenario-based requirement has been augmented, as noted above, to reflect the potential impact of other more severe but shorter duration events that contemplate a significant decline in secured funding capacity.

Applying such a "liquidity standard" alongside a capital standard is critical to the effective supervision of a CSE and, as noted earlier, is a critical difference between the supervisory regime for commercial and investment banks.

In addition to regular examination of and monitoring for key risk control areas, in particular market, credit, liquidity and operational risk, the CSE program leverages the firms' internal audit functions. CSE staff meet regularly with internal auditors to review and explore issues identified by their risk assessment and audit program. To be sure that communication of

critical risk information and audit findings flows between risk managers, auditors, and senior management as well as the board, the CSE program requires internal auditors to review the functioning of major governance committees, including that these committees are meeting consistent with their charters and that the information being received by the committees is complete and accurate. The internal auditor must represent in writing to the SEC annually that this work has been done, and the results presented to the external auditor and the audit committee of the Board of Directors. Also, as circumstances require, or as risk management issues arise, senior officers of the SEC meet with CEOs, CFOs, and senior management, to raise issues for focus and resolution by CSE senior management.

At the broker-dealer level, the CSE Program is focused on fulfilling the SEC's explicit statutory responsibility to protect funds and securities of the customers of the investment bank's regulated broker-dealer affiliates.

Of note, regulated broker-dealers are supervised by an extensive staff both at the SEC and at the primary self-regulatory organization (SRO), FINRA, which devotes a large amount of resources to overseeing the broker-dealers that are the core regulated entities within the CSE groups. This extensive supervision of the regulated entities in addition to the holding company is akin to bank supervision at the depository institution level as well as the holding company level.

When potential weaknesses are identified at the CSEs, the Commission has broad discretion to respond, for example by mandating changes to a firm's risk management policies and procedures, by effectively requiring an increase in the amount of regulatory capital maintained at the holding company, or by requiring an expansion of the liquidity pool held at the parent. These powers are not theoretical abstractions. All three of the steps that I just mentioned have been taken at various firms over the past two years. If these actions are unsuccessful, the Commission can limit the CSE's business or effectively terminate consolidated supervision, which would, *inter alia*, require disclosure and have significant implications in European jurisdictions.

The SEC has also conducted a series of cross-firm projects in recent years focusing on risk management issues related to material and growing businesses, including leveraged lending, securitizations, hedge fund derivatives, and private equity. The results of this work were communicated to the firms through feedback sessions intended to explain to institutions where they stand on various issues relative to their peers. This feedback process allows firms to learn where they fall within the spectrum of observed practices and has been incorporated into the new business model for the CSE inspections program which was implemented earlier this year.

At present the SEC has 25 staff persons in the CSE program with a range of expertise including financial analysts, statisticians, economists and lawyers. The size of the program has risen as the complexity and range of supervisory activities has grown, and further expansion is currently underway. Earlier this year, Chairman Cox requested from Congress a dedicated funding stream for the CSE program that would be sufficient to support a staff of 40 staff persons. The agency remains committed to supporting the program and is prepared to allocate additional resources as warranted.

Conclusion

The CSE program adopted by the Commission has served to fill a gap left after the Gramm-Leach-Bliley Act broadly restructured the regulation of financial institutions. Although supervised on an elective basis by the Commission under the CSE program, and in compliance with capital standards at the holding company and regulated entity level, Bear Stearns ultimately was overwhelmed by the unprecedented demands for liquidity it faced in a crisis of confidence. As detailed above, the Commission has taken the lessons learned from the Bear Stearns events to improve the supervision of the remaining investment banks and to enhance existing relationships with other supervisors to address the issues that these and other financial institutions are experiencing in the current turbulent market conditions.

An imperative from the Bear Stearns crisis is addressing explicitly through legislation how and by whom large investment banks should be regulated and supervised, and specifically whether the Commission should be given an explicit mandate to perform this function at the holding company level, along with the authority to require compliance. Chairman Cox has called for such an explicit mandate, together with a dedicated funding stream for the CSE program. These steps are intended to ensure that the supervisory regime for investment banks is adequate in light of evolving market conditions and builds on a long history of Commission involvement in the supervision of securities firms.

Thank you again for this opportunity to discuss these important issues. I am happy to take your questions.

Embargoed for release until
June 19, 2008 at 2:30 p.m.

Statement of

Scott M. Polakoff
Senior Deputy Director and Chief Operating Officer
Office of Thrift Supervision

concerning

Risk Management and Its Implications for Systemic Risk

Before the

Subcommittee on Securities, Insurance and Investment
Committee on Banking, Housing and Urban Affairs

June 19, 2008

Office of Thrift Supervision
Department of the Treasury

1700 G Street, N.W.
Washington, DC 20552
202-906-6288

Statement required by 12 U.S.C. 250: The views expressed herein are those of the Office of Thrift Supervision and do not necessarily represent those of the President.

Statement of Scott M. Polakoff
Senior Deputy Director and Chief Operating Officer
Office of Thrift Supervision
on Risk Management and Its Implications for Systemic Risk
Before the
Subcommittee on Securities, Insurance and Investment
Committee on Banking, Housing and Urban Affairs
June 19, 2008

I. Introduction

Good afternoon, Chairman Reed, Ranking Member Allard and members of the Subcommittee. Thank you for inviting me to testify on behalf of the Office of Thrift Supervision (OTS) on risk management and its implications for systemic risk. This is an important and timely topic. In particular, I appreciate the opportunity to familiarize the Subcommittee with OTS's holding company authority and its program for supervising the complex holding companies subject to OTS regulation. We also appreciate the opportunity to share our thoughts on the state of risk management in the financial services industry and our recommendations for enhancing regulatory cooperation and improving oversight of firms that pose elevated risk to our financial system.

As the members of the Subcommittee may know, OTS is the primary federal regulator for thrifts and companies that own or control them (savings and loan holding companies). This authority is deeply rooted in statute and in our history as a regulator. It is a responsibility we take very seriously.

As is the case with bank holding companies overseen by the Federal Reserve, many of the holding companies we supervise are simply shell organizations whose primary asset is the insured depository thrift. In other cases, however, the thrifts are part of a much larger organizations whose primary businesses are insurance, securities, or commercial activities. In this respect, our authority extends to a population of holding companies with a significantly broader diversity of businesses than those found in the

bank holding company population. The holding companies we supervise, for example, includes manufacturing firms like General Electric and the John Deere Company, large insurance firms like AIG and State Farm, global asset managers like Ameriprise Financial, and non-bank financial services firms like American Express – in addition to Merrill Lynch, Morgan Stanley and Lehman Brothers.

In the case of these complex companies, our review of the holding company is much more in depth than the approach we employ for shell holding companies. Our reviews analyze critical issues such as the structure of the overall corporate organization, the role of the insured depository within the firm's business framework, the adequacy of capital at the parent level, the fit and properness of holding company management, the links between the thrift and the parent organization, the effectiveness of governance and controls at the parent, and the policies and procedures in place for assessing and managing risk at the consolidated level. These reviews are geared to identify key risk concentrations and assess material intragroup transactions that could impact the firms' overall operations or could have a negative impact on the insured depository thrift.

All of these critical areas are subject to review on a regular basis by OTS examiners either assigned solely to these institutions on an ongoing basis, or by subject-matter experts who conduct specialized reviews over the course of the exam year. The findings of our reviews and the recommendations that flow from our work are regularly communicated to each firm's senior management through regular meetings and ongoing dialogue, and are rolled up into a comprehensive report of examination, which is provided annually to the senior management and the board of directors of the holding company.

Without question, the events of the past 18 months sharpened our focus on the critical market and financial condition issues faced by many of the holding companies we supervise. The events surrounding the collapse of the mortgage-backed securities markets vividly illustrated the failure of many risk managers, senior management and boards of directors, to properly assess and manage the risks emanating from this line of

business. While the products involved were sometimes complex and heavily structured, the failures were not. Firms insufficiently and improperly priced risk at the origination level and investors failed to perform proper due diligence on the buy-side. There was a clear lack of understanding of the downside risk of mortgage-related products and inadequate risk management at every level. These failures, and the uncertainty that remains until this day, led to a sudden deleveraging of financial institutions – resulting in illiquid and intermittent markets in mortgage-related products, an inability to assess the underlying risk and extraordinary difficulty finding a clearing price for many products. This is all further complicated by continuing uncertainty at the underlying product level - where impending payment resets on adjustable-rate mortgages may increase delinquencies and further restrict the cash flows that underpin mortgage backed securities.

In response to the distress in the markets, the firms we supervise recognized deep losses in their asset-backed securities portfolios, bolstered capital levels in the face of write-downs and weak earnings capacity, secured and enhanced liquidity positions, and significantly scaled back businesses that were no longer viable or posed significant reputational, market, credit, or operational risk. In many cases, these firms changed management – both at the CEO level and in key corporate control centers.

These large scale changes dramatically shifted the risk profile and earnings capacity of these enterprises and OTS intensified its supervisory efforts accordingly. We sharpened our focus on overall risk controls relative to the external market realities and the impact of business strategy changes resulting from the turmoil. We assessed the adequacy of capital at the parent level, and the relationship between the insured depository and the larger enterprise.

Importantly, we used, and continue to use, a number of statutory and regulatory tools at our disposal to reduce the risk in the insured depositories themselves and insulate the thrifts from the problems of the parent organizations. Specifically, we directed holding company and thrift management to bolster and maintain strong capital levels at

the thrifts owned by larger enterprises, and we have directed management in some cases to transfer potentially risky assets from the thrifts' books to the parents'. We directed the divestiture of business lines (like mortgage banking) that posed an inordinate amount of risk to the thrifts in the changed market conditions, and we have required governance changes that enhanced the independence of the thrifts' boards and management within these larger organizations. While these are examples of actions OTS has taken in the past year with respect to our population of complex holding companies, we have also enhanced our contact with senior management of these firms, meeting with CEOs and other senior managers to communicate our supervisory approach and expectations going forward.

These steps were necessary given the market conditions, and the net effect has been less risk in the insured depositories and a more sustainable relationship between the thrifts and the parent organizations given the continued market difficulties. They also underscore for us the importance of the statutory authority OTS possesses to assess risk in the enterprise on a consolidated basis and to intervene, when appropriate, at all levels of the organization to insulate the insured depository from adverse market events.

II. OTS Authority to Supervise Holding Companies and Securities Firms

A. OTS Holding Company Authority

OTS has long had authority to charter and regulate thrift institutions and the companies that own or control them. The agency has a well-established program for meeting its statutory responsibilities in this regard – including a comprehensive program for assessing and rating the overall enterprise as well as the adequacy of capital, the effectiveness of the organizational structure, the effectiveness of the risk management framework for the firm and the strength and sustainability of earnings.

Enterprises subject to OTS's holding company supervision range from relatively simple 'shell' companies, whose primary asset is the insured depository thrift, to complex

global conglomerates that engage in businesses across the spectrum from insurance, securities brokerage and commercial activities. Prior to enactment of Gramm-Leach-Bliley, savings and loan holding companies were permitted to be commercial companies and as a result several holding companies supervised by the OTS are grandfathered commercial enterprises that are primarily engaged in lines of business as diverse as heavy manufacturing, utilities, and retail services. The diversity in this holding company population precludes a bank-like, risk-based capital standard for these more complex firms. OTS instead performs capital adequacy assessments on an individualized basis for the firms under our purview with requirements as necessary, depending on the company's risk profile, its unique circumstances and its financial condition. This principles-based approach stresses desired regulatory outcomes over prescriptive rules, and avoids the undesirable outcome of a focus on rules rather than the level of risk in the underlying business.

The net effect of this approach has been a strong capital cushion for the holding companies we supervise and a strong ability for the firms under our purview to support the insured depositories within their corporate structures. Earlier this year we conducted an extensive review of capital levels at thrift holding companies. We found that savings and loan holding company peer group averages are strong. Savings and loan holding companies with assets greater than $10 billion had an average equity to assets ratio of almost 11 percent. The two peer groups of savings and loan holding companies with assets ranging from $3-10 billion and $1-3 billion both had impressive equity to assets ratio averages of over 16 percent. The equity to asset averages for the two peer groups of smaller holding companies ($500 million - $1 billion and less than $500 million) were almost 10 percent and just over 12 percent, respectively.

These findings underscore the strength of our holding company capital regime and dismiss any concerns that a lack of prescriptive rules yields a lower capital base in savings and loan holding companies. OTS has employed capital requirements where necessary, but a rigid approach to capital in the diverse population of savings and loan

holding companies could both weaken our regime and disconnect our work from a fundamental assessment of risk.

OTS also took steps to enhance its ratings system for holding companies. Specifically, we rate holding companies on a numeric 1 to 5 scale similar to the ratings system for banks and we enhanced our program to more explicitly stress our review and assessment of risk management at the parent level in addition to maintaining a strong focus on the relationship between the parent enterprise and the insured depository institution.

These steps ensure our procedures reflect the work being done by our examination teams in these institutions and reflect OTS's continued desire to improve and enhance our oversight of holding company enterprises within our statutory purview.

B. OTS Program for Supervising Securities Firms

OTS currently has the statutory responsibility to supervise Merrill Lynch, Morgan Stanley and Lehman Brothers up to and including the top-tier parent level by virtue of their ownership of thrift institutions. As of March 30, 2008, Merrill Lynch stood at $1.042 trillion in consolidated assets at the holding company level, Morgan Stanley stood at $1.09 trillion and Lehman Brothers stood at $786 billion. The Merrill Lynch thrift organization, by comparison, held $31 billion in assets, Lehman Brothers' thrift held $12.2 billion and Morgan Stanley's thrift held $5.1 billion.

As in other complex holding companies we supervise, we approach our supervisory responsibilities by communicating with other supervisors who share jurisdiction over portions of these entities and through our own set of specialized procedures to guide our supervision of these firms.

With respect to communication, we are committed to the framework of functional supervision Congress established in the Gramm-Leach-Bliley, whereby the consolidated

supervisors will consult on an ongoing basis with other functional regulators to ensure those findings and competencies are appropriately integrated into our own assessment of the consolidated enterprise and, by extension, the insured depository institution we regulate. We have worked closely with the FDIC and the relevant state banking supervisors in cases when an ILC is involved in the structure. Because the Federal Reserve extended some liquidity facilities to these firms in the wake of the Bear Stearns collapse, we have built a cooperative relationship with the Federal Reserve Bank of New York staff engaged in ongoing monitoring of these institutions. We also have worked diligently, though with less success, to build a cooperative relationship with the SEC. We believe a cooperative framework with the SEC is critical to our oversight of Merrill Lynch, Morgan Stanley and Lehman Brothers because the bulk of their business and assets are contained within entities regulated or licensed by the SEC. Discussions about how to improve and enhance our coordination with the SEC are ongoing between the principals. We have offered and will continue to offer to share our findings, strategies and substantive communications with the SEC. We will continue our efforts to secure the same information from the SEC.

Our procedures for examining complex holding companies, including the large broker-dealer firms, involve a rigorous risk assessment and supervisory planning process, ongoing targeted reviews overseen by examiners tasked solely to these firms, regular reporting from the firms on key financial metrics like capital and liquidity, ongoing formal and informal dialogue with senior management, dialogue and coordination with functional supervisors in the United States and abroad, and an annual report of examination – provided to the boards of directors – that summarizes our findings and formalizes our recommendations.

Our examination approach utilizes this framework to assess the adequacy of each firms' financial condition, capital, risk management and liquidity framework, and the performance and capability of management. We rely on information gained through offsite and onsite monitoring and the firm's own reporting processes in these areas. We also rely heavily on public filings, discussions with internal and external auditors,

interaction with key risk control centers like the enterprise risk management function and corporate treasury. We test our findings and assumptions through in-depth, "targeted" reviews by subject-matter experts on our staff to ensure that the policies and procedures developed by management and adopted by the boards of directors are properly implemented by business line management.

This framework, blended with our assessment of any findings resulting from our regular examinations of the thrifts within these structures, provide us with a comprehensive view of each firm, its risks, and the projected impact of those risks on the insured depository institution. Naturally, most of our work over the past year has focused on the impact of the turmoil in the financial markets on our most complex institutions – and assessing the firms' strategies for addressing the difficulties they face realigning their businesses to current realities. We expect this will remain a key focus of our work in these securities firms for the near to mid-term future.

III. OTS Observations on the Turmoil in the Credit Markets

The complex holding companies supervised by OTS face significant challenges and risks as a result of the turmoil and uncertainty in the credit markets and in the face of general economic weakness. The dramatic fall-off in liquidity following the rise in home mortgage delinquencies, the decline in the underlying value of housing stock, and the uncertainty about borrower performance as adjustable rate mortgages reset led to considerable declines in the value of mortgage backed securities (MBS). These firms derived considerable revenue from designing and packaging those products and, in many cases, holding them in portfolio. The demise of that business, and the resulting steep decline in MBS valuations, led to sizeable losses and considerable pressure on earnings for much of the past year.

The turmoil in the markets posed a dual challenge to these firms. First, they had to manage their damaged portfolios by valuing the assets as best they could given weak or nonexistent markets for the products and recognizing significant losses. Second, they

had to update their business models to reflect the fact that the structured finance businesses they had built, and from which they had derived a significant portion of their earnings in recent years, was no longer viable in the current environment. While the firms have made progress on both fronts, much work remains.

Our supervisory efforts in this environment remain focused on the adequacy of capital, the effectiveness of risk control frameworks, the soundness of valuation methodologies, access to liquidity facilities, and the effectiveness of often new and untested management teams. This is all viewed through the prism of the impact of these events at the parent on the insured depository institution and the effectiveness of the control structure to prevent unacceptable risk transfers from the parents to the thrift subsidiaries.

IV. OTS Observations on Risk Management in Securities Firms

When market events of this magnitude occur, it is entirely appropriate to ask, as you have, about the regulators' assessment of the effectiveness of risk management at these firms and to ask what went wrong. Were the sophisticated risk management frameworks in place insufficient to the task? Or did the risk managers have concerns about the firms' overall approach, but were not provided sufficient voice to either raise those concerns at the senior management levels or materially affect the direction of the firms into more risky lines of business?

It is OTS's view, consistent with findings by the Senior Supervisors' Group and others, that it is more the former than the latter. While extraordinarily sophisticated and advanced in nature, the risk management frameworks in place at these firms and others across the financial sector were clearly inadequate for the key problems of identifying major imbalances as they built over time – as evidenced by the increasingly large bets at many of these organizations on continued house price appreciation. The risk management frameworks also failed to consider an appropriate range of adverse outcomes, and of the impact of adverse scenarios related to the housing market,

structured product valuations and performance, and robustness of liquidity facilities in times of stress. Much of this had to do with the focus of the firms' risk models on the past historical performance of the various securities ratings buckets. The mistaken assumption that the past history would predict future performance, even for the most senior and highly rated MBS tranches contributed significantly to many firms' woes.

This failure of risk management at all levels of the investment pipeline led to an improper and overly optimistic pricing of risk – both on balance sheet and off – and contributed to senior managements' inability to understand and control the adverse impact of significant valuation declines, liquidity shortages, and reputation risk on their firms' balance sheets. It also contributed to managements' inability to grasp the deep interconnectivity of the marketplace and the hidden links that ultimately led to the financial equivalent of gridlock and what, in effect, were "runs" on many non-banking intermediaries.

OTS's observations further confirm the finding in the Senior Supervisors Group report that firms need "more active controls over the consolidated organization's balance sheet, liquidity, and capital," should better involve the corporate treasury function in risk management, and should incorporate information from all businesses into global liquidity planning, including planning for the impact of stress events on the firms' liquidity.

We also have observed that risk management is most successful in complex organizations when it is much more than simply a division of the firm, however independent, that provides reports and assessments to senior management. Rather, reflecting the higher leverage of financial institutions in general – and the significantly higher leverage of securities firms in particular – risk management must be systemic and must infuse everything the firm does. We encourage firms we supervise to have a robust discussion about risk and tolerances at every level of the organization, beginning with the boards of directors and continuing through to line managers. This process, while buttressed by reporting from the enterprise management architecture, infuses a risk appetite, risk tolerance, risk understanding and risk management ethic throughout the

organization, clearly conveying expectations and providing the foundation for strong management technique and minimizing the opportunity for unwelcome surprises. The more successful firms we supervise do this very well. Others have paid a stiff price in the markets and at the hands of the regulators for their inattention to this task.

Further, we believe the interplay between capital (or leverage) and liquidity is stronger than ever and that strong capital levels (or lack thereof) has a material impact on the susceptibility of these firms to shocks or adverse liquidity events. While bank supervisors have, appropriately, been focused on better aligning capital in banks with the underlying risk through the Basel II process, we note that the more highly leveraged non-banking firms were more susceptible to shocks emanating from the lack of counterparty confidence or the drying up of liquidity. The events surrounding the collapse of Bear Stearns provide a vivid illustration of this. As has been suggested by the President of the Federal Reserve Bank of New York and others, perhaps it is time to impose more exacting expectations on capital, liquidity and risk management at these systemically important financial intermediaries.

Finally, OTS has observed that the events of the past year laid bare the inadequacy of stress testing at many financial institutions. We have made the case for enhancing and elevating this important function. The Senior Supervisors Group noted that the turmoil in the markets challenged many firms' "control over their potential balance sheet growth and liquidity needs" and we agree. One way of returning control is a clear-eyed understanding of the range of probable outcomes of pursuing a given business strategy. No firm, financial or otherwise, can make every business decision on the basis of a doomsday scenario, but prudent planning and an understanding of the downside of strategic decisions can provide opportunities through hedging or otherwise, to insulate the firm from the worst possible outcomes. Certainly discussion of the stressed scenarios at the highest levels can temper the rush to ill-considered strategies and serves to inject more sober reality into the pricing of risk.

V. OTS Observations on Regulatory Oversight of Securities Firms

The OTS, as outlined above, has strong statutory authority to supervise securities firms that own thrift institutions. We believe this approach provides us with a full slate of useful supervisory options to both understand the risk and activities of the parent and to prevent any risk arising from the operations there from adversely impacting the insured depository institutions involved. Further, we have used many of these supervisory tools to bolster and insulate thrift institutions from problems at the parent level. So while we welcome a discussion with the Subcommittee and other parties about the appropriate supervisory framework for these firms, ensuring and maintaining the ability for OTS to influence events at the parent level to the benefit of the insured depository will remain a priority for us.

While OTS has an important role, we recognize there are other entities involved that also are tasked with overseeing significant portions of the firms' activities. Certainly the SEC has a key role through its oversight of the broker-dealer operation. Access by the Federal Reserve is important in the wake of lending facilities made available to these firms during and after Bear Stearns crisis.

While it is appropriate for these supervisors and OTS to have a robust presence in these firms, we also believe there is an incumbent responsibility for us to work together in a constructive manner to improve the quality of our work and to eliminate any confusion on the part of the firms about the posture of the regulators with respect to their institutions. This is particularly so in times of market stress like we've seen in recent months.

VI. Conclusion

Thank you, Mr. Chairman, Ranking Member Allard, and members of the Subcommittee for the opportunity to testify on risk management in the most complex institutions we supervise and the implications for systemic risk to our financial system.

The issues raised by this discussion, including the role of these systemically important institutions in the U.S. financial system, the adequacy of risk management, the appropriateness of these firms' leverage, and how best to improve oversight of these firms, are critical issues to all of us who supervise these institutions. A solution that improves the quality of our oversight and enhances the coordination between us is in everyone's interest and is in keeping with the intent of Congress.

We look forward to working with the members of the Subcommittee and others on the continuing challenges presented by the markets and fashioning a regulatory approach that works for all of us here.

Thank you.

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

Mr. Chairman and members of the Committee, I thank you for the opportunity to testify today. My name is Richard Bookstaber. I am employed at Bridgewater Associates, an investment firm in Westport, Connecticut. Before joining Bridgewater last year, I ran a hedge fund at FrontPoint Partners. 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. I am the author of A Demon of Our Own Design – Markets, Hedge Funds, and the Perils of Financial Innovation, published in April of last year.

The invitation I received from Chairman Reed posed four issues for discussion: the state of current risk management models and systems; the adequacy of risk management by risk officers and executive boards; what regulators could do to improve their response to future market problems; and how regulators can better equip themselves to monitor risk.

These questions are complex and at the outset I would encourage the formation of a financial industry body to consider these and other matters of financial system risk. There

is the risk that burdensome controls will push some financial institutions off-shore and thus limit the reach of the government response to futures crises.

I would now like to address each of these questions in turn.

The state of current models and systems for measuring risk management

Large financial institutions, and I would include not just commercial and investment banks but large hedge funds as well, evaluate the risk of their portfolios on a daily basis. They use standard metrics such as value at risk, decompose their exposures into tranches of maturity and credit exposure and perform daily stress tests on their derivative positions. The systems and models they employ for these tasks are well developed; they are adequate for the risks they are designed to measure.

The problem is that the systems are not designed to measure – and in the current state of the world perhaps cannot be designed to measure – the risks we care the most about: the risks related to market crises. The best we can do at this point is recognize, as my current firm does, that these risks can only be dealt with by having those with true market insight and experience apply common sense rules that overlay the traditional risk metrics.

To understand the limitations of current risk models and systems, we need to understand how market crises develop. Consider as an example a highly leveraged firm that has a sizable position in a market that is under stress. The firm faces losses and its collateral drops to the point that its lenders force it to start selling. This selling leads to a further drop

in the market, which leads the collateral to decline still further, forcing yet more sales. This downward cycle reduces liquidity in the market, so the fund manager must look to sell positions he might be holding in other markets. This selling drops prices in these other markets, and highly leveraged funds with exposure in these markets are then forced to sell. And thus the cycle propagates. The result is that the stresses in the first market end up devastating another unrelated and perfectly healthy market.

As a simple example of the unlikely yet powerful linkages that can occur from this sort of dynamic, consider the silver collapse in 1980. The decline in the silver market brought the cattle market down with it. The improbable linkage between silver and cattle occurred because the Hunt brothers needed to raise capital to post margin as their silver positions declined, and to do so they sold off cattle positions.

As another example, the LTCM crisis in 1998 was precipitated by the default in the Russian debt market, even though LTCM did not have substantial positions in Russia. But some of those who did also had positions in markets where LTCM was active. When they were forced to sell in these markets, LTCM was caught up in the downward spiral. Many of these markets, such as the market for Danish mortgage bonds, had nothing to do with Russia, save for the fact that they were in the crosshairs of the same leveraged investors that were holding Russian debt exposure.

The point is that when it comes to risk management during market crises, the usual economic linkages and historical market relationships do not matter. Rather, what matters

is who owns what, who is under pressure to liquidate and what else they own. These dynamics are not part of institutions' risk management models, and indeed I do not believe at present that they can be. And more troubling, as I will discuss below, the requisite data are not even available for regulators to evaluate this type of risk.

The adequacy of risk management by risk officers and executive boards

Whatever the limitations of the risk models and systems, these were not the culprits in the case of the multi-billion dollar write-downs over the past year. These positions were patently visible; no models or detective work were needed. Furthermore, it was clear that the inventory was not liquid and that its market value was uncertain. So I do not believe the failure was from inadequacies in the risk management systems themselves.

Indeed, what occurred leaves me scratching my head; it is hard to understand how this risk was missed. How can a risk manager see inventory grow from a few billion to ten billion and then to thirty or forty billion and not react by forcing that inventory to be brought down? I can only surmise where the failure occurred: my view is that it was a failure of management. The risk managers did not have the courage of their conviction to insist on the reduction of this inventory, or the senior management was not willing to heed their demands.

If my supposition is correct, then more must be required of the risk manager than monitoring and understanding the risks. He also must have the willingness and independence to force issues up the chain of command. Furthermore the CEO must have

the capacity to assess the risk manager's advice and have the willingness to take bold action.

Adequacy in these dimensions requires the correct incentives, extending up from the risk manager to the CEO and the Board. As we know, often management incentives are akin to the trader's option – where the trader is rewarded handsomely if he turns a profit and simply walks away if he loses. We must move away from such one-sided incentives for senior management. Otherwise those who are responsible for protecting the firm from unwarranted risks will have incentives more closely aligned with those of a risk taker.

What regulators could do to improve their response to future problems in the market

I consider this question with some trepidation, because the risks of ill-conceived regulations are potentially greater than no regulation. So any suggestion by me or anyone else should be weighed by a task force of knowledgeable parties from across a spectrum of financial institutions to assess the potential implications. Keeping this in mind, I would like to put forward two proposals for consideration:

Establish a liquidity provider of last resort

In my October 2, 2007 testimony to the House Financial Services Committee I proposed "the government maintain a pool of capital at the ready to be the liquidity provider of last resort, to buy up assets of firms that are failing". The Federal Reserve's action with respect to Bear Stearns is along the lines of this proposal.

The reason for the government to act as a liquidity provider of last resort is that by taking rapid and decisive action to infuse liquidity, regulators may break the cascade of an emerging crisis and curb a systemic threat,. We have had a number of successes though this route. The LTCM failure saw its systemic effects forestalled by the Federal Reserve's actions in bringing together a bank consortium and having them stop the demand for sales to meet collateral. In the recent case of Bear Stearns, the action of the Federal Reserve infused liquidity and instilled confidence in the marketplace at a critical juncture.

The concept of a liquidity provider of last resort has already has been employed successfully by the private sector. The large hedge fund Citadel has used its capital to buy up the assets of other hedge funds that were in distress, in one case with the failure of Amaranth and again with the failure of Sowood. Citadel's actions did not bail out the failing firms; the firms still went out of business. But its actions forestalled positions being thrown into a jittery, uncertain market, and thereby prevented the failure of the one firm from cascading out to have a systemic effect.

I hasten to emphasize that if the government considers formalizing a role of this type, a liquidity provider of last resort to buy up assets of firms that are failing, it will not be stepping into the business of bailouts. There is no moral hazard problem because the firm will still fail. But the collateral damage will be contained; the market will not go into crisis, the dominos will not fall. And just as Citadel did in the cases mentioned above, the taxpayer would have good odds of pocketing some profits.

Rethink the application of mark-to-market accounting

Marking positions to market is intended to price the positions according to what they would be worth if they were sold at the present time. The mark-to-market concept loses its meaning when applied to large positions during periods of market crisis. Indeed, in times of crisis mark-to-market accounting might even be destabilizing.

In a crisis the market is drained of liquidity. Many who otherwise would be natural buyers are facing large loses, yet others are running for the sidelines. In this situation a mark-to-market price is next to meaningless. If a financial institution has a large inventory of positions, it could not sell it at the market price. The price of the most recent sale in the market, which might have occurred through a trade of a few million dollars, will bear no resemblance to the price at which an institution could unwind positions – positions that might amount to tens of billions of dollars – when the market is in an illiquid state. And the financial institution might have no intention of selling, in which case the crisis-induced fire sale price bears no relationship to what the positions will be worth if held longer term.

Pricing inventory on a mark-to-market basis can be destabilizing. It might force yet more assets into the market because the institution might appear below a regulatory capital limit or need to satisfy covenants of its creditors. It might erode the market's confidence in the viability of the institution. In such cases the mark-to-market accounting will cause the crisis to become more severe.

I suggest regulators investigate the systemic risk implications of mark-to-market accounting rules.

How regulators can better equip themselves to monitor risk

Get the critical data

Prior to the recent financial crisis my current firm, Bridgewater Associates, performed an analysis of the incredible build up in leverage in derivatives throughout the financial industry. The firm was able to put together a rough but useful picture; however the clearest lesson from the exercise was how little anyone knew about where the risks lie. This finding conforms to my understanding as well.

Regulators are ill-equipped to monitor risk because they lack the right data. This is particularly true when we are looking at the issues of crises and potential systemic risks. As I have already mentioned, what matters for these risks is who is leveraged, what they own and what they owe to whom. Yet regulators do not have the essential information to monitor leverage. They cannot track the concentration of investors by assets or by strategies. Nor can they assess the risks at the foundation of the huge swap and derivatives markets because they do not know the positions of all of the counterparties – who owes what to whom and how losses would propagate if a set of counterparties failed.

It is important for regulators to determine the data that are necessary to monitor the markets for potential dislocations and related crises, and then provide the powers to access these data. Getting the critical data may require looking beyond the banks and even the investment banks into the hedge fund arena. I suggest that a task force be formed to

determine the data that are necessary to monitor the markets for potential dislocations and related crises, and to weigh the benefits of having such data and how to get it without creating an undue burden. It is difficult for regulators to know what data to get and how, so regulators should to work with an industry body that can facilitate this process.

In getting the critical data, regulators need to keep in mind that attempts to gather more information about financial institutions cannot be so burdensome as to push them off-shore or disturb the functioning of financial markets. For example, it is important to create safeguards to treat these data as proprietary, because broad knowledge of firms' leverage and positions can have an adverse effect on the market, reducing the willingness of investors to take on liquidity in times of crisis because of a fear that others will know their positions and trade against them.

Create a regulatory risk management function

In my October 2, 2007 Congressional testimony I suggested the need for "a regulatory body, a government-level risk manager with a role perhaps modeled after that of industry-level risk managers". I am pleased now to see a similar recommendation come forward from the Department of the Treasury in the form of the role of the market stability regulator.

Such a regulatory body would acquire the relevant data and then use these data to monitor systemic risk. It would have the ability, either directly or in cooperation with other regulators, to put checks on the risk taking activities of the institutions under its purview. It

also would be the natural home for the liquidity provider of last resort. As with the issues of data acquisition, the success of such a function depends on it having oversight for all major risk taking institutions, including hedge funds.

With this I will close my prepared remarks. I again thank the Committee for inviting me to provide this testimony, and I look forward to your questions.

Testimony of

Professor Richard J. Herring

Jacob Safra Professor of International Banking

The Wharton School, University of Pennsylvania

before the

United States Senate Banking, Housing, and Urban Affairs Subcommittee on Securities, Insurance and Investment

June 19, 2008

on

"Risk Management and Its Implications for Systemic Risk"

Chairman Reed, Ranking Member Allard and Members of the Subcommittee on Securities, Insurance and Investment: I am pleased and honored to be invited to testify here today. I would like to address four questions in my allotted time: (1) how did Basel I contribute to the current crisis and would Basel II have been prevented it? (2) What weaknesses in Basel II have been highlighted by the crisis? (3) What lessons have been learned by risk managers and regulators? (4) What additional regulatory tools need to be developed to limit systemic risk without exacerbating moral hazard?

1. How did Basel I contribute to the current crisis and would Basel II have prevented it?

Basel I created strong incentives for banks to engage in regulatory capital arbitrage by shifting assets off their balance sheets and into special purpose entities (SPEs) that were often, largely outside the scrutiny of creditors, regulators and analysts. For example, subprime mortgages were subject to a 100% risk weight, which meant that banks would need to hold Tier 1 capital equal to at least 4% of the book value of the subprime mortgage so long as it was held on their balance sheet. However, if the bank created a special purpose entity, it could shift the subprime mortgage off its balance sheet, pool it with other assets and then back the pool of assets with a line of credit with a maturity of less than 1 year. So long as the line of credit was revocable and for less than one year, it would not be subject to a capital charge. Yet the line of credit was one of the features that enabled the SPE to sell slices of the pool of assets to a wide variety of institutions in capital markets worldwide. This technique enabled banks to use their regulatory capital much more efficiently and to increase their revenues from originating and securitizing assets and often from servicing the special purpose entity as well. Securitization created many benefits for banks and their customers, but overtime it became increasingly complex and less transparent with the result that it was a much less effective risk transfer mechanism than many banks apparently believed.

Optimists assert that Pillar 1 of Basel II would have reduced the incentives for securitization by requiring a modest capital charge for back-up facilities of 364 days or less. I am skeptical that this would have had much impact because the US implemented this kind of rule in 2004 and it did not restrain Citi who sponsored 7 SIVs, more than any other bank.

Optimists also argue that Pillar 2 of Basel II enhances the scope for regulators to require capital above the regulatory minimum if they believe that a bank is exposed to risks that are not well-captured by Pillar 1 capital charges. I am skeptical that this will have much practical importance because bank supervisors have very little leverage vis-à-vis profitable banks that appear to be in good condition. The British Financial Services Authority (FSA) certainly failed to make use of this power in the case of Northern Rock. Just weeks before Northern Rock's collapse the FSA authorized the bank to adopt the internal Ratings Based approach to Basel II, which reduced its capital requirements by 30% and enabled the bank to increase its dividends by a similar amount. There is no indication that the FSA sought to impose an additional Pillar 2 capital charge because they believed that the Pillar 1 charge was too low, or because they

believed the bank was imprudently exposed to a liquidity shock or because they believed the bank's business model was excessively risky, although all of these rationales would have been plausible.

Finally, optimists argue that Pillar 3 of Basel II will enhance disclosure and market discipline. But Pillar 3 does not require disclosure about SPEs or contingent commitments. And the authorities have not dealt with the crisis in a way that is likely to enhance market discipline. Around the world the supervisory authorities have taken care to protect all creditors and counterparties at faltering institutions. This is true of the way the German authorities dealt with IKB, the UK authorities dealt with Northern Rock and the US authorities dealt with Bear Stearns.

2. What defects in Basel II have been highlighted by the crisis? The crisis has revealed weaknesses all three Pillars of Basel II. With regard to Pillar 1 both the Standardized Approach and the Internal Ratings Based Approaches to establishing capital charges need to be reconsidered. The Standardized Approach relies heavily on external ratings to establish capital charges. We have seen that this can lead to unintended, regulatory-induced, pressures for institutions to press for innovations that will yield highly-rated credit with higher returns. Even though most sophisticated practitioners knew that an A-rated corporate debt was less risky than an A-rated CDO, the Standardized Approach failed to capture the distinction. Still worse, if the ratings agencies substantially underestimate the riskiness of a whole class of securities as has been the case with CDOs, it can introduce a new element of systemic risk that would not exist if each individual bank were making its own, independent credit evaluation with oversight from its regulator.

The major losses sustained by some of the most sophisticated participants in the subprime-related debt market raise troubling questions about the accuracy of internal models. Despite the fact that these institutions had billions of dollars at stake, the models were unable to deal with the complexity of many of the instruments created in the securitization process. Part of the problem was lack of appropriate data to estimate such models. But more fundamentally, the models were not designed to capture changes in the liquidity of marketable instruments.

This latter problem extended to VaR-like models widely used to establish capital charges in the trading book. Although these models have performed well in past crises, they proved inadequate to deal with credit-risk sensitive instruments which suddenly became illiquid.

With regard to Pillar 2, the largely qualitative treatment of liquidity risk is ineffectual in preparing banks to deal with asset/liability management problems under stress. Moreover, Pillar 2 fails to deal with reputational risk which motivated several firms to risk billions of dollars to salvage SPEs that they were not legally obligated to save. More fundamentally, Pillar 2 ignores business risk despite the fact that it has been responsible for 18% of the volatility in US

bank earnings – three times as much as market risk, which is included in Pillar 1 capital charges.[1]

Finally, with regard to Pillar 3, the new disclosures are inadequate to help external investors understand the exposure of individual banks to structured debt or SPEs. Moreover, the implementation of Basel II will make it increasingly difficult to compare capital adequacy across banks across countries. For example, banks within the European Union will have more than one hundred implementation choices. Moreover, differences across banks in internal models can lead to different capital charges for the same asset. This undermines transparency of risk exposures and capital adequacy and impedes the functioning of interbank markets. Finally, despite efforts to achieve convergence between US GAAP and International Financial Accounting Standards, substantial differences remain which impede comparisons across banks that compete with each other around the world. For example, Deutsche Bank was obliged by EU regulation to shift from US GAAP to International Financial Reporting Standards (IFRS) and consequently we learned in January 2006 that its trading assets, which were €448 billion under US GAAP, amounted to €1,010 under IFRS.

3. <u>What lessons have been learned by risk managers and regulators</u>?

Losses are often an important stimulus for learning and there has certainly been a considerable amount of learning by losing in the banking industry over the past year. Comparisons between banks that sustained relatively small losses and those that sustained substantial losses reveal a number of weaknesses in risk management in the latter. First with regard to risk identification and analysis, we observed wide disparities in the timing and quality of information available to senior managers with regard to how quickly the danger was assessed, how quickly the firm could evaluate its exposures across all products and how quickly could management act to limit or reduce its exposures. Although with the benefit of hindsight it is possible to identify warning signs early in 2006, the entire banking industry should have taken note of the subprime-related losses that HSBC announced in February 2007. Yet several firms continued to securitize and buy subprime-related debt until mid year. Some large, complex institutions had substantial difficulty aggregating information across the institutions. For example, one firm withdrew from subprime lending in 2004, while another unit of the same firm continued to buy sub-prime related securities.

Several firms experienced difficulty assessing liquidity risk. It appeared that the treasury function was not fully integrated in the risk management system and so there was often little contingency planning for off-balance sheet commitments or reputational commitments such as funding sponsored money market mutual funds to enable them to avoid "breaking the buck." In some cases, this also involved funding sponsored hedge funds. Finally there is little evidence

[1] See A. Kuritzkes and Til Schuermann, "What We Know, Don't Know and Can't Know About Bank Risk: A View from the Trenches," Working Paper, Wharton Financial Institutions Center, 2006.

of contingency planning for loss of access to capital markets. Moreover, the process for evaluation of new products seemed to lack rigorous risk analysis. Several firms failed to improve the risk control infrastructure to keep up with their firms' increased appetite for risk.

Firms also experienced problems within the traditional risk silos. The crisis exposed some of the limitations of VaR-like analysis, particularly for dealing with illiquid, instruments exposed to credit risks. There was also a lack of attention to basis risk in hedging and a misplaced emphasis on net exposures to the exclusion of attention to gross exposures. Moreover, stress testing and scenario analysis had failed to prepare some institutions for the conditions that actually occurred.

The crisis also exposed several weaknesses in credit risk analysis. First and foremost was a failure to comprehend the deterioration in underwriting standards that occurred. But in addition, many firms had trouble tracking a multiplicity of exposures to various borrowers and counterparties.

The crisis also exposed several weaknesses in operational risk. In many cases management information systems were simply too slow to provide timely information about exposures to a variety of products, counterparties and creditors. Moreover some firms had not established a rigorous system for pricing level three assets so that the same asset might be priced differently in the bank's own portfolio than if it were priced as collateral for counterparty.

The crisis also exposed problems across the traditional risk management silos. Many firms had failed to realign risk management to deal with the convergence of risk types in new products such as sub-prime related debt. Moreover, there was a failure to anticipate correlations across types of risk and a failure to conduct broad and deep cross-disciplinary discussion about the relevant risk facing the firm. The traditional silos got in the way of coherent and comprehensive risk management.

The Basel Committee of Bank Supervisors, the Financial Stability Forum and the President's Working Group on Financial Markets have all issued papers highlighting some of the key problems they have identified and promising future reforms that will be unveiled and implemented at a future date. The regulatory authorities have been very reluctant to implement changes quickly lest they exacerbate the current crisis. It's impractical to discuss these proposals until they are made explicit, but I would like to highlight a regulatory reform that has not been discussed – the lack of appropriate tools to resolve some systemically important institutions.

4. <u>What additional regulatory tools need to be developed to limit systemic risk without exacerbating moral hazard?</u>

In March, with the hastily improvised rescue of Bear Stearns the Fed crossed a regulatory Rubicon without the appropriate set of weapons. The traditional US view had been

the investment banks do not pose systemic risk because they are unlikely to be subject to a run since customer funds are carefully segregated from those of the firm. Moreover, it was thought that since investment banks hold mainly marketable securities, they should be able to deleverage rapidly without suffering illiquidity costs in the event of a funding shock. Moreover, access to systemically important clearing and settlement systems was through large banks. The Demise of Drexel Burnham Lambert in 1990 seemed to confirm this view. Although the Bank of England and the Fed did help facilitate unwinding some of Drexel's positions by acting as honest brokers, there was no bailout. Spillovers were so minimal that the stock market actually rose the day the Drexel declared bankruptcy.

The EU has long maintained the opposite view. This is partly because most of the largest European banks have long had the full range of securities powers and the largest US investment banks have established banking operations in Europe. The EU has insisted that the largest US investment banks be subject to consolidated prudential oversight comparable to that applied to large US banks. While rejecting the option of Fed supervision as a Financial Services Holding Company, the five leading investment banks agreed to be Consolidated Supervised Entities subject to Basel II-like capital standards at the holding company level with oversight by the SEC.

Since the demise of Drexel Burnham investment bank portfolios have shifted dramatically in favor of lower quality, less liquid assets making it much more difficult to deleverage without experiencing illiquidity costs in the event of a funding shock. Investment banks have also become much more international drawing funds from around the world. While this enhances diversification of funding, it increases coordination costs in the event of a funding shock. Investment banks have also become much more leveraged with Bear Stearns leading the way with net leverage that was more than 30 times equity. Investment had also greatly increased their reliance on third party repos to fund their balance sheets. In 1990 secured repo credit was 13% of federally insured deposits. By 2007 it had become 60% of federally insured deposits. And investment banks have had increasing involvement in over-the-counter derivatives markets, especially the Credit Default Swap market which now exceeds $60 trillion in outstanding notional contracts.

Bear was widely viewed as in precarious condition after the blow-up of two of its sub-prime related hedge funds in June of 2007. Its share price plummeted rapidly, but still regulators and Bear's management team were caught off-guard by its rapid demise in the second week of March. Its prime brokerage specialty became a liability as hedge funds withdrew. Some OTC derivatives counterparties sought to replace trades with Bear by new contracts with other dealers. Lenders would not engage in stock lending and tri-party repos with Bear and some banks refused to clear for Bear.

To avert a bankruptcy filing by Bear, the Fed hastily improvised a subsidized merger with JPMorgan Chase. The Fed was motivated by fears of the likely consequences of a bankruptcy filing by Bear. Stays are central to the bankruptcy process of resolving nonbanks, but they can generate substantial systemic spillovers if the nonbank institution is heavily engaged in financial markets. Clients and counterparties may lose access to funds and cause problems for their own clients and counterparties. Viable borrowers may lose access to collateral and undrawn credit lines. The lack of clarity regarding positions vis-à-vis the insolvent nonbank may transmit problems to counterparties who will be unable to undertake the appropriate hedges and may cause dislocations in interbank markets as traders attempt to assess the ultimate damage. The Fed's key concern was damage to the primary dealer market that facilitates the government's borrowing.

If Bear Stearns had been a bank, the Fed, working with the FDIC, would have had the appropriate tools to deal with this problem. Banks are subject to prompt corrective action measures with mandatory triggers for regulatory intervention to ensure a market solution to a faltering bank's problems. They also have the obligation to intervene quickly and decisively before a bank is insolvent and, most importantly, the FDIC has the option of establishing a bridge bank to continue systemically important services until the optimal resolution can be accomplished. The bridge bank allows time to design and implement the optimal resolution and allows all potential buyers additional time to perform due diligence. This regulatory tool was introduced in the US in 1987, but has subsequently been adopted in Korea, Taiwan and Japan.

This model, which currently focuses on insured depository institutions, would need to be redesigned for investment banks. One of the key issues that would need to be confronted is what entities should discipline investment banks? Shareholders face a very different payoff function than creditors or counterparties. They are primarily concerned with maximizing the net present value of the investment bank, not the externalities the bank may impose in the event of failure. But creditors and counterparties internalize these losses. Moreover, relative to supervisors, they have superior incentives and technical ability to monitor the investment bank. A well-constructed bridge bank would ensure that at least some of these creditors and counterparties continue to have an incentive to monitor and discipline the investment bank.

Now that the Fed has crossed the regulatory Rubicon, it must be better prepared to deal with the next failure. Better resolution policies deserve an urgent position on the policy agenda both in the United States and abroad. For market discipline to be effective, regulators should be able to safeguard the financial system from spillovers following the failure of even the largest, most complicated, most inter-connected financial system. No firm should be regarded as too-inter-connected to fail.

Testimony Before the

Senate Committee on Banking, Housing, and Urban Affairs,

Subcommittee on

Securities, Insurance, and Investment

by

Kevin M. Blakely

President and CEO

The Risk Management Association

June 19, 2008

Introduction

Chairman Reed and other members of the Subcommittee, I thank you for the opportunity to address the critical topic of risk management and its implications for systemic risk.

I come to you today with a rather unique perspective on this topic. I have worked in the financial services industry for 35 years, the first 17 of them as a regulator with the Office of the Comptroller of the Currency (OCC). Nearly all of my time with the OCC was spent working with problem banks.

In my capacity as head of Special Supervision from 1986 to 1990, I was responsible for overseeing the most deeply troubled and failing banks in the national banking system. The unprecedented number of bank failures during that time gave me a rare insight into risk and risk management.

After the OCC, I spent the next 17 years in the banking industry, first as a turnaround specialist for Ameritrust Corporation, a deeply troubled regional bank domiciled in the Midwest, and thereafter in a variety of risk management positions, including more than a decade as Chief Risk Officer of KeyCorp, a $100 billion financial institution located in Cleveland, Ohio.

In July 2007, I was named President and CEO of The Risk Management Association, a not-for-profit organization dedicated to promoting sound risk management principles in the financial services industry.

RMA has been fulfilling its role for nearly 100 years. It has approximately 3,000 corporate members, ranging from small community banks to the largest financial institutions in the world. It also has approximately 20,000 individual members who work in the risk management profession.

RMA today is an organization in close contact with its members on the issues they face and what they are trying to do about them. We routinely communicate with the risk professionals who are among our members, including senior risk officers from the largest global commercial and investment banks.

I should also mention that even though RMA is an industry association, it does not engage in the business of lobbying. We believe our efforts are better spent serving our members as a conduit of information on effective risk management practices.

State of the Financial Services Industry

The issues facing the financial services industry are widespread, complex, and scary. The capital markets have seized, billions of dollars have been written off, and the financial services industry is rapidly de-leveraging, resulting in a paucity of credit for needy

borrowers. The initial liquidity-driven problems of 2007 are now giving way to deteriorating asset quality in 2008, posing another potential round of losses for the industry.

Things are not good, and it's hard to be optimistic about the foreseeable future.

The financial services industry is a vital component of the national and world economies, and it is deeply wounded right now. It needs time to sort out what happened, why it happened, and what needs to be done to prevent it from happening again. To ensure it doesn't happen again, many industry participants will have to change the ways in which they did business.

We have to be careful of the solutions we put into place, however. Simple fixes born from knee-jerk reactions are not appropriate for complex problems. The problems are multifaceted and the solutions must reflect that fact. This crisis was a collective effort of failure. There are many culprits to point the finger at, and singling anyone out would be inappropriate. Trying to fix one issue without considering its domino effects can actually worsen the situation.

Whether solutions come from bank management, regulators, or legislators, we must be careful not to compound an already very tenuous situation.

Difficulties notwithstanding, the current environment affords an excellent opportunity to learn from mistakes and improve risk management processes going forward. As we muddle through the misery, we are all smarting from it and smarter for it. There is recognition within the industry that mistakes have been made. Major mistakes. And there is also a genuine determination that, as an industry, we need to do better.

State of Current Models and Systems for Measuring Risk Management at Large Financial Institutions

I will state up front that I am a firm proponent of models. I have personally seen their utility in many ways, be it for pricing products, predicting behavioral characteristics, or stratifying risk. Models are like nuclear energy, however. Handled appropriately, they can be very useful and very safe. Handled inappropriately, they can be a disaster.

The reputation of models has taken a tremendous hit as a result of the current market crisis. I think this is unfair. Blaming models for the financial market crisis is like blaming the car for not running after you've filled the gas tank with water.
Models are inanimate tools. They don't create themselves and they don't think for themselves. They are built *by* human beings *for* human beings. It is the humans who develop the formulas that drive them. It is the humans who develop the assumptions fed into them. And it is the humans who interpret the output from them.

The recent debacle has pointed out many ways in which models can be used inappropriately. Models, by nature, have a historical base. They use the past to try and predict the future. What are we to expect when we take historical data from one type of loan and then force-fit it into a model to predict the outcome of a completely different type of loan? I cite, for example, the modeling that supported the subprime mortgage business in the mid-2000s.

Subprime mortgage lending has been around for a long time, but never before has it produced the results we have seen play out in 2007 and 2008. Some of the models used to forecast performance were based on data from loans whose underwriting standards were diametrically opposed to those of the mid-2000s. The historical data was based on credits with conservative loan-to-value and debt-to-income ratios. Borrowers were fully vetted as to their employment and payment histories. This same historical data was used to forecast the performance of borrowers with little or no down payments, high debt-to-income ratios, low- or no-supporting documentation, and a "qualified" status achieved through teaser rates.

We shouldn't be surprised that the performance of recent vintage subprime loans was dramatically different from that of their older brethren. That's not the fault of the models. That's the fault of the humans who fed them erroneous data.

There has also been much criticism that value-at-risk (VaR) models failed during the recent turmoil. VaR models have inherent weaknesses that must be recognized and

worked around. For example, VaR models use backward-looking information to forecast the future. If the data captured in the model comes from a benign environment, it will temper forecasts for future periods, even as markets become more volatile. Stale volatility assumptions can quickly render the VaR forecasts obsolete. Further, VaR models depend on confidence intervals: A 95% interval implies the models will be wrong one out of every 20 days. These shortcomings, and others, should not render VaR models useless. Instead, they imply that management needs to pay closer attention to current market volatility and adjust assumptions accordingly. In addition, the models should be supplemented by other risk management tools, such as scenario and stress testing, to ensure a more holistic approach.

There are, of course, times when modeling can be carried too far, such as when it becomes modeling for the sake of modeling. For example, when I was a Chief Risk Officer, I was presented with the opportunity to enhance earnings through the use of a U.S. Dollar-Denominated Inverse-Floating French Franc–Deutsche Mark Indexed Amortizing Swap. This struck me as an earnings tool so difficult to understand that it was functionally useless, built by a group of "quants" trying to see how creative they could be—much like those who built today's collateralized debt obligations.

As risk management tools, models are in their relative infancy and will continue to mature as more time passes. Despite their many shortcomings, we cannot—and should not—abandon them. Instead, we should seek ways to work around their weaknesses. We

should use them not as a substitute for human judgment, but rather for making a more informed human.

Adequacy of Risk Management by Risk Officers and Executive Boards, Including the Sharing of Information and Communication Among Senior Management

Financial risk management is an art that has been around since the dawn of commerce. Until very recently, however, it was an intuitive process, honed and refined by millennia of bad decisions. It is still very much intuitive, but it is now being supplemented by sophisticated tools and processes designed to keep up with rapidly expanding companies, products, and markets.

In 1990, the largest financial institution in the United States was barely $100 billion in asset size. A mere 20 years later we have companies that boast trillions of dollars in assets. These companies span the globe in their operations and offer a broad array of products and services that meet even the most arcane financial needs.

This phenomenal expansion of size and products has occurred during a time of enormous economic growth for the United States. In such a robust economic environment, it is often difficult for many to focus on risk and risk management. Risk is dormant and, as such, it gets the "out of sight, out of mind" treatment. Consequently, we should not be surprised that risk management processes have not grown commensurately with the industry's dollar assets, products, and services.

The industry has not totally ignored risk management, however. We have seen many impressive advances across the spectrum, ranging from statistical analysis of risk through the use of technology to the creation of formal risk organizations within companies. We've seen the implementation of new-product-review processes that force us to understand what we are doing before we actually do it. We've also seen the implementation of comprehensive self-testing processes to monitor the effectiveness of accounting, internal, and compliance controls. Many companies have also designated a Chief Risk Officer to ensure that at least someone is always focused on the business of risk management.

Despite these advances, we still have a way to go. As an industry, we will never achieve perfection, and we need to acknowledge that. Banking is a business of risk: We must take risks to generate profits. In doing so, we will make mistakes. We always have and we always will. Our objective is to minimize the damage from mistakes when they inevitably occur.

The new processes we have developed over the last two decades will help. But these new tools are no substitute for other fundamental principles of risk management. There are certain risk management rules by which our industry must abide. When we don't, we get into trouble. The recent market debacle is a prime example.

A fundamental principle of risk management is that it is not one person's responsibility. It is a collective effort. Everyone in the entire organization must be a risk officer, from the board of directors down to the lowest-ranked person in the company. They must know the risks they take, mitigate them as best they can, and appropriately price for those that must be taken.

The recent turmoil offers numerous examples of where this fundamental principle was not followed. In many cases, boards of directors did not know the risks the company was taking. And it was often questionable if the directors had the expertise to understand the risk even if they had tried. Moreover, these boards failed to put in place an incentive scheme that would have induced bank management to focus on risk.

There were CEOs who were more attentive to short-term revenue than to the risks taken to produce such earnings. There were line-of-business managers who also were focused on revenue production, and that focus led them to abdicate their risk responsibilities to the Risk Management function. And finally, there were new Chief Risk Officers willing to assume all responsibility for all risk throughout the company.

It is now an accepted fact that casting a Chief Risk Officer in the role of a policeman doesn't work. The CEO and front-office management *must* take first responsibility for risk management, with the Chief Risk Officer playing a supporting role.

To reinforce that outcome, boards of directors must implement a compensation scheme that will incent management to want to understand their risks and to ensure the company is appropriately paid for those risks. We have seen countless instances where front-line managers ignored risks because they had no incentive to do otherwise. Instances of paying short-term incentives for taking long-term risks were plentiful.

The importance of incentive compensation in the management of risk cannot be overstated. It is a key component for reinforcing a risk-focused culture. But such incentive schemes should be designed not to avoid risk, but rather to induce employees to be cognizant of risks they are taking and to ensure the company is appropriately rewarded for taking the risk. A risk-based incentive system helps ensure that the interests of management, shareholders, and depositors are all aligned.

Boards of directors should ensure they have individuals within their ranks who understand financial risk. In the United States, we have laws that mandate Audit Committees to have individuals conversant in financial statements. Yet we have no such mandates for board expertise in risk management, whose absence poses a far greater threat than most accounting errors do.

As a matter of good corporate governance, it seems appropriate for financial institutions to create a committee to focus on risk management, or the *active acceptance of risk by which profits are generated.* That committee would be separate and distinct from the

Audit Committee, which largely facilitates the *prevention of losses arising through operations*.

In the recent market turmoil, we have seen many instances where communication between parts of the company was lacking. For example, lines of business may have provided liquidity facilities for special-purpose vehicles like SIVs. As contingent liabilities, these facilities do not appear on the balance sheet. Often the bank's Treasury Department, which is responsible for ensuring adequate funding, was unaware of such commitments. When market disruption occurred and the liquidity facilities were suddenly drawn, treasurers were surprised and left scrambling to find ways to fund the draws. With the capital markets in a state of disruption, the cost of buying funds to cover the unexpected demand became prohibitively expensive.

Surprises such as these could have been averted through better communication between departments. It is safe to assume that if bank management was unaware of its contingent funding demands, so too was the board of directors. This lack of communication was indicative of a breakdown in the information circulatory system and inhibited management's ability to understand the company's risk profile. Further, if the Treasury people were unaware of the contingent commitments, they were unable to properly engage in transfer pricing, a critical step in ensuring that line managers obtain sufficient reward for the risks they are taking.

What Regulators Have Likely Learned About Risk Management and What They Can Do to Improve Their Response to Future Problems

There are always opportunities to learn from misfortune, and the current circumstance is no exception.

Troubles in the markets were driven by the meltdown of the subprime mortgage industry and its attendant evaporation of liquidity. The depth and duration of the problems can be categorized as a "tail event." The probability of most tail events actually happening is normally low enough to garner little attention from either bankers or regulators. As a consequence, when tail events do happen, they come as a surprise and they tend to hurt—a lot.

Regulators, like bankers, now know that the possibility of tail events must be given greater attention. For several years, regulators have been pushing the industry hard to do more stress and scenario testing. Such testing can reveal damage that could be done by the appearance of a tail event, giving management an opportunity to take appropriate action before the event actually takes place. While some in the industry were slow to respond to the regulatory push on this type of testing, the implosion of the capital markets has given a new sense of urgency.

Regulators have taken a step back to revisit their pending Basel II regulation in order to ensure it appropriately addresses liquidity, concentrations of credit, and off-balance-sheet activities, including those that contain implicit or reputational risks. Further, they intend

to develop ways to incent companies to supplement their historical-based risk measurement with forward-looking analyses. These actions are a direct outcome of the problems discovered during the market turmoil.

Beyond Basel II, regulators are also demonstrating a keen interest in other important areas of the risk management business. These would include risk governance, valuation processes, disclosure, and the behavioral aspects of incentive compensation schemes.

With the benefit of 20/20 hindsight, one could criticize regulators (and bankers) for not foreseeing the budding calamity in the capital markets. Most would agree, however, that regulators have played a critical and beneficial role in tempering a situation that was spinning out of control. To see this, one only has to look at the support the Federal Reserve has brought to the investment banking community. Were it not for the Fed's bold actions, our industry—and the economy—might have experienced a catastrophe.

To enhance their ability to react more proactively, regulators could benefit from the medicine they are administering to their constituent banks and develop a more robust system of stress and scenario testing for the industry as a whole. For example, the Federal Reserve is currently analyzing the industry-wide implications of the credit derivatives market, which is an issue that cannot be sufficiently addressed at an individual-bank level. The Fed's effort to understand the "what ifs" of this market segment may enable contingency plans to be developed before a problem occurs. Efforts such as these should be both applauded and encouraged.

The last several decades have witnessed a dramatic shift in where financial assets are held. The commercial banking industry, once a dominant player in managing the country's financial wealth, has seen its market share continuously eroded by other market participants. Investment banks, hedge funds, and private equity investors have come to play an increasing role in meeting the needs of the nation's capital requirements.

This disintermediation from the commercial banking sector is due, in part, to an imbalance in regulatory oversight. Regulators, such as the Fed, were at one time able to claim oversight of a majority of the financial markets. With the emergence of alternative players not subject to their supervision, regulators have lost a significant amount of influence over the behavior of the markets.

Financial services providers on the periphery of regulatory supervision have had both positive and negative effects on the markets. They are less burdened by regulatory constraints, which allows them to be more creative and nimble in their operations. On the other hand, they can also spoil market stability through a lack of discipline.

There is an old adage in the lending business that says, "Underwriting standards sink to the lowest common denominator." Market participants engaging in originate-to-distribute activity sometimes were too aggressive with their underwriting standards. Other market participants were then faced with Hobson's choice of doing likewise or losing clients to the spoilers. Often they followed suit, setting up the next cycle of credit

losses. If regulators had influence over a greater breadth of market participants, they might have been able to maintain a more stable environment for all.

Financial institutions themselves could enhance overall governance by adding to their boards some directors who have risk management experience and knowledge. There appears to be a dearth of such experience at the board level right now, which may be contributing, in part, to the industry's propensity to repeat past mistakes. The presence of risk management expertise at the board level would enable directors to ask the appropriate questions of bank management in this regard. Indeed, regulators should encourage financial institutions under their jurisdiction to consider the benefits of such expertise at the board level.

Financial institutions also need to raise the profile of risk management throughout their companies. Until companies transition to a risk-focused mentality in the day-to-day conduct of their business, they will continue to expose themselves and the industry to volatile swings in profitability. Fortunately, a number of steps can be taken to foster this risk-based mentality.

- As previously mentioned, companies can add risk experience to their boards of directors. Boards can set risk appetites for their respective institutions and monitor management's compliance with such guidance. Boards can also assist by creating incentive compensation systems that encourage management to continuously seek to understand the risks they take and to ensure the company is being appropriately

compensated for them. Further, they can ensure that the risk function within their organizations has equal parity with other areas of senior management.

- CEOs should relentlessly promote management's responsibility for risk as well as revenue production. A CEO's direct participation in the understanding of risk goes a long way toward emphasizing its importance to members of senior management. (No subordinates want the boss to have a greater understanding of their businesses' risks than they do.) The CEO's personal involvement fosters an environment of open communication, information sharing, and formulation of strategies to deal with real or potential risks. Evidence to this effect was presented in the Senior Supervisors Group paper from March 2008, "Observations on Risk Management Practices During the Recent Market Turbulence."

- Regulators should continue their current focus on risk governance within financial institutions. Regulators have a unique perspective that enables them to see across the industry to determine which practices foster effective risk management and which do not. Generally speaking, they are hesitant to dictate to individual institutions on how the company should be structured and how it should be managed. That posture is appropriate. However, regulators can and should share the knowledge they glean with regard to successful risk governance at institutions under their purview.

- Regulators should increase their visibility with boards of directors and engage in a dialogue with them on risk governance. Doing so will enhance directors' knowledge of sound practices within the industry. For example, if regulators indicate that most firms are moving to establish a Risk Management Committee of the board, it won't be long before outliers move toward conformance. Those that don't will at least benefit from the conversation as to why not.

- Initiatives like the Federal Reserve's effort to get its arms around the credit derivatives market are critical in identifying systemic risks. Efforts such as these should be made a staple of regulatory responsibilities.

- By studying the mistakes made to this point, regulators have identified a number of important areas that need to be addressed quickly. They need to share their ongoing findings openly and to respond with industry guidance of *appropriate* measure. No more and no less.

Summary

The financial services industry is experiencing great difficulty today. It has been battered by a severe liquidity shortage and plunging valuations of market-based assets. Those problems are now giving way to the next stage: deteriorating asset quality, which may result in a new round of credit-related losses.

Many have faulted models for playing a major role in the collapse of the capital markets, but this charge is probably overstated. It is the human factor that played a greater role in the models' dysfunction. Humans built the models, fed them historical data, provided the assumptions to guide them, and interpreted their outcome. As an industry, we now have a greater appreciation of models' limitations and have discovered the need to supplement them with forward-looking analyses.

The discipline of risk management is an evolving one. While many improvements have been made, many more are yet to come. Greater board-level attention on matters of risk will help, especially if driven by board members who are conversant in risk management. Boards need to make certain that management focuses not just on revenue production, but also on the understanding of and pricing for risk the company takes. Key elements that will facilitate such an outcome include defining a risk appetite for the company and implementing an appropriate risk-based incentive compensation scheme.

CEOs must play an active role in advocating the importance of risk and risk management. By witnessing the CEO's interest in risk, subordinates will be compelled to follow suit. Such engagement fosters a healthy exchange of risk information, ideas, and strategies throughout the company. The CEO must ensure that risk management is the responsibility of every employee. Allowing abdication of that responsibility to the Chief Risk Officer is a recipe for failure.

Regulators have already provided many valuable insights into the causes of the market turmoil and are taking steps to respond to it. They are also beginning to focus on threats to the financial system specifically and to the economy more generally. By performing scenario analyses on financial sectors such as the credit derivatives market, they are trying to anticipate problems before they have a chance to manifest themselves.

Regulators have done a noble job of tempering a bad situation, despite having direct jurisdiction over only a fraction of the financial services industry. Changes to the scope of regulatory oversight, some of which have been offered by the current Treasury proposal, may assist in this area.

An increased level of dialogue between regulators and boards of directors on risk governance will help elevate its importance and understanding. Further, with the insights gained from their oversight role, regulators are in a great position to share sound risk management practices throughout the industry.

Although much work needs to be done to remediate deficiencies revealed by the market crisis, all concerned parties must be cautious in their approach. Overreaction can make a tenuous situation only that much worse.

And that concludes my prepared remarks. Thank you once again, Mr. Chairman, for the opportunity to present RMA's comments on this important subject.