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Risk Management in Financial Institutions

Remarks by

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The financial and credit market turmoil that began last summer has raised a number of significant issues of public policy, including questions concerning the maintenance of financial stability, the supervision and regulation of financial institutions, and the protection of consumers in their financial dealings. Obviously, I cannot hope to address all the relevant issues today; moreover, events continue to unfold. Still, some of the implications of what has transpired since August are becoming clearer. My remarks today will focus on the lessons of the recent experience for risk-management practices in financial institutions as well as the supervisory oversight of those practices. My comments are based on the experiences and observations of supervisors in both the United States and other countries and thus are intended to be fairly general, applying across regulatory structures and to financial firms of varying scope and size.

Origins of the Current Turmoil

To provide some background, I will begin with a brief discussion of the origins of the financial turmoil. Although many factors played a role, to a considerable extent, the financial stress we continue to experience arose from the problematic implementation of the so-called originate-to-distribute approach to credit extension. In principle, and indeed often in practice, the originate-to-distribute model spreads risk and reduces financing costs, offering greater access to capital to a wide range of borrowers while allowing investors greater flexibility in choosing and managing credit exposures.

However, weaknesses in the application of the originate-to-distribute model became increasingly apparent last year, resulting ultimately in a broad retreat from this method of credit extension last summer. A report released just this March by the President's Working Group on Financial Markets (PWG), of which I am a member, and

an even more recent study issued in April by the international Financial Stability Forum (FSF), in which the Federal Reserve plays an active role, document the nature of these weaknesses.[1] These reports emphasize that substantial improvements in the originate-to-distribute model as practiced over the past few years are necessary if its potential benefits are to be realized.

The reports pointed out that problems occurred at each step of the credit-extension chain. First, at the point of origination, underwriting standards became increasingly compromised in recent years. The most notorious example is, of course, U.S. subprime mortgages. In this case, as in others, the incentives faced by originators were an important source of the breakdown in underwriting. The revenues of the originators of subprime mortgages were often tied to loan volume rather than to the quality of the underlying credits, which induced some originators to focus on the quantity rather than the quality of the loans being passed up the chain. However, the problems with subprime mortgage underwriting were disguised for a time by the continued appreciation in home values. As long as house prices kept rising, subprime borrowers saw their home equity increase and were often able to refinance into more-sustainable mortgages. But when house prices began to stagnate and then fall, many subprime borrowers found themselves trapped in mortgages they could not afford. Because subprime loans were frequently securitized and incorporated into complex structured products, the resulting losses spread throughout the financial system.

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[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.

Although subprime mortgages are the most well-known instance of underwriting failure and were in some sense the trigger of the turmoil, the loosening of credit standards and terms occurred more broadly, even as market risk premiums contracted. For example, investors were willing to purchase so-called leveraged loans--used to finance mergers or buyouts--with few covenants or other protections. The PWG concluded that investors often took insufficient care in evaluating the risks of credit products, in part because they relied too much on evaluations provided by the credit rating agencies. Unfortunately, the methodologies, data, and assumptions the agencies used to rate structured credit products proved deficient in many cases. When rising delinquencies and losses on mortgages forced the agencies to sharply downgrade many of these products, investors lost confidence in those ratings and became unwilling to provide new funds. As financing disappeared, the markets for structured credit products and for related investments seized up.

Another significant factor contributing to the financial turmoil was risk-management weaknesses at large global financial institutions that created and held complex credit products. I will return to this topic shortly, but for now, suffice it to say that a result of poor risk management at some financial institutions was that the spreading of risk, one of the purported benefits of the originate-to-distribute model, proved to be much less extensive than many believed. When investors were no longer willing or able to finance new structured credit products, many of the largest financial institutions had to fund instruments they could not readily sell or had to meet contingent funding obligations for which they had not adequately planned. The combination of unanticipated losses, which ate into capital cushions, and severe liquidity pressures has reduced the ability and

willingness of some large financial institutions to make markets and to extend new credit, with adverse effects for the financial system and for the economy.

Both the PWG and the FSF reports highlighted the important role played by financial regulators in overseeing and helping to strengthen risk-management practices in the firms they supervise, and the reports recommended that the regulators review their own policies, guidance, and supervisory practices to identify areas in which improvements could be made. I will discuss some regulatory and supervisory responses to the recent developments later in my remarks.

Lessons for Risk Management at Financial Institutions

With that brief diagnosis of our financial market turmoil as background, I turn now to some of the lessons learned thus far regarding the risk-management practices of financial institutions. The financial turmoil presented difficult challenges that were not fully anticipated by either financial institutions or regulators, but firms did vary in how well they were able to deal with those challenges. By comparing how some key firms fared during the recent period, we can better understand what worked well and what did not work so well.

Many of the points I will make are drawn from a report published in early March by a group of supervisory agencies from France, Germany, Switzerland, the United Kingdom, and the United States--including the Federal Reserve--known as the Senior Supervisors Group, or SSG.[2] This report employed a methodology similar to that used in the so-called horizontal reviews regularly conducted by U.S. bank supervisors. We begin

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[2] The report, "Observations on Risk Management Practices during the Recent Market Turbulence" (www.newyorkfed.org/newsevents/news/banking/2008/SSG_Risk_Mgt_doc_final.pdf), provides a summary and analysis of a joint survey and review, initiated this past autumn, of risk-management practices during the recent financial stress.

these reviews by identifying particular activities or practices that merit study. We then gather comparable information from a core set of institutions, with the objectives of identifying the principal differences in practice across firms and determining how those differences are related to subsequent performance. Finally, we provide feedback to the institutions involved and often share the insights gained with other institutions not in the study. Horizontal reviews can involve major commitments of time and resources, but they help both managers of financial institutions and supervisors by revealing the range of practice in the industry and by providing useful information about the strengths and weaknesses of alternative approaches. When focused on large, internationally active organizations, as was the case with the SSG report, these reviews can offer insights that bear not only on the safety and soundness of individual companies but also on the maintenance of overall financial stability. Although the SSG report covered a group of the largest banking and securities firms, based on our own supervisory experience at the Federal Reserve, I believe the lessons of that report have relevance for financial organizations of all sizes and scope.

In reviewing these lessons, I will concentrate on four categories of risk-management practices: risk identification and measurement, valuation practices, liquidity risk management, and senior management oversight.

Risk Identification and Measurement

For risks to be successfully managed, they must first be identified and measured. Recent events have revealed significant deficiencies in these areas. Notable examples are the underestimation by many firms of the credit risk of subprime mortgages and certain tranches of structured products. Other firms did not fully consider the linkages between

credit risk and market risk, leading to mismeasurement of their overall exposure. Firms differed in their susceptibility to these problems; however, some were more disciplined in their approaches to identifying and measuring risks and thereby gained a better understanding of the risks of some complex securities, particularly in highly stressed environments. This fuller appreciation of the risks involved led these firms to limit their purchases of such securities or to provide additional capital and liquidity backstops.

The SSG report notes that some institutions took an excessively narrow perspective on risk with insufficient appreciation of the need for a range of risk measures, including both quantitative and qualitative metrics. For example, some firms placed too much emphasis on the mechanical application of value-at-risk or similar model-based indicators. Sophisticated quantitative tools and models play an important role in good risk management, and they will continue to do so. But no model, regardless of sophistication, can capture all of the risks that an institution might face. Those institutions faring better during the recent turmoil generally placed relatively more emphasis on validation, independent review, and other controls for models and similar quantitative techniques. They also continually refined their models and applied a healthy dose of skepticism to model output.

Stress tests and related exercises are a good way to augment models and other standard quantitative techniques for risk management. They can provide a valuable perspective on risks falling outside those typically captured by statistical models, such as risks associated with extreme price movements and those associated with scenarios not reflected in what are sometimes very short data series. Stress testing forces practitioners to step back from daily concerns to think through the implications of scenarios that may

seem relatively unlikely but could pose serious risks to the firm if they materialized. For stress tests to be useful, they should be relevant to the business at hand, change with market and risk positions, and, of course, have an impact on management's decisionmaking. In an encouraging finding, the SSG report noted that the surveyed institutions already broadly recognize the need to enhance their stress-testing capabilities.

Recent events illustrate the potential usefulness of stress tests. For example, several institutions made what proved to be optimistic assumptions about the correlation of returns between tranches of collateralized debt obligations. Appropriate stress testing might have allowed a better understanding of how these instruments would perform under extreme market conditions. Applying stress tests to several business lines at the same time is operationally challenging, but for several firms, exercises of this type could have revealed previously undetected firmwide risk concentrations that cut across the banking book, the securities portfolio, and counterparty exposures. Some institutions successfully applied stress testing, with corresponding benefits for the bottom line. For example, some risk managers recognized the risk that certain off-balance-sheet exposures might present should they need to be brought back on the balance sheet and tested scenarios to evaluate the potential firmwide impact. This work allowed their firms to be better prepared when the scenarios became reality.

Valuation

Valuation practices are a second area that supervisors' comparative reviews identified as critical. The SSG report indicates that those firms that paid close attention to the problems associated with the valuation of financial instruments, particularly those for which markets were not deep, fared better. These more-successful institutions

developed in-house expertise to conduct independent valuations and refrained from relying solely on third-party assessments. They also tested their estimated valuations in various ways, for example, by selling a small portion of the asset in question to test the market or by undertaking an extensive review of the market prices of similar products. Some more-successful firms also consistently embedded market liquidity premiums in their pricing models and valuations. In contrast, less-successful firms did not develop adequate capacity to conduct independent valuations and did not take into account the greater liquidity risks posed by some classes of assets.

Liquidity Risk Management

Another crucial lesson from recent events is that financial institutions must understand their liquidity needs at an enterprise-wide level and be prepared for the possibility that market liquidity may erode quickly and unexpectedly.

Weak liquidity risk controls were a common source of the problems many firms have faced. For example, some firms' treasury functions were not given information from all business lines about either expected liquidity needs or contingency funding plans, in part because managers of individual business lines had little incentive to compile and provide this information. 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. Unexpected balance sheet expansions subsequently added to funding pressures as well as to pressures on capital ratios. In contrast, the more-successful institutions worked to develop firmwide strategies for liquidity risk management that incorporated information from all business lines. In the best cases, firmwide strategies included consideration of the liquidity risks

associated with structured investment vehicles, which led to more limited involvement in these activities.

Senior Management Oversight

Effective oversight of an organization as a whole is one of the most fundamental requirements of prudent risk management. The SSG report highlighted solid senior management oversight and engagement as a key factor that differentiated firms' performance during the recent events. Senior managers at successful firms are actively involved in risk management, which includes determining the firm's overall risk preferences and creating the incentives and controls to induce employees to abide by those preferences. To manage risk at an enterprise-wide level, successful senior managers also ensure that they have the necessary information, which in turn requires appropriate policies and information systems as well as robust methods for identifying and measuring risks.

The failure to appreciate risk exposures at a firmwide level can be costly. For example, during the recent episode, the senior managers of some firms did not fully appreciate the extent of their firms' exposure to U.S. subprime mortgages. They did not realize that, in addition to the subprime mortgages on their books, they had exposures through the mortgage holdings of off-balance-sheet vehicles, through claims on counterparties exposed to subprime, and through certain complex securities. Successful senior managers also worked to ensure that critical information was transmitted horizontally as well as vertically; the SSG report noted that, at some firms, business lines did not share vital information relevant to risk positions and business tactics, with adverse implications for profitability.

Culture and governance affect the quality of risk management. The leaders of well-managed institutions of all sizes generally seek to have strong and independent risk functions. Such functions support clear, dispassionate thinking about the entire firm's risk profile. In addition, the institution benefits when senior managers encourage risk managers to dig deep to uncover latent risks and to point out cases in which individual business lines appear to be assuming too much risk.

Supervisory Responses

Supervisors too have learned from the recent experience, including the need for careful self-assessment, and the PWG and the FSF reports offer some helpful recommendations. We are still conducting such an assessment, but I can offer some preliminary conclusions.

Given the central role of effective, firmwide risk management in maintaining strong financial institutions, it is clear that supervisors must redouble their efforts to help organizations improve their risk-management practices. Accordingly, we have increased supervisory attention to this issue. We have focused on the institutions in most need of improvement, but we will continue to remind the stronger institutions of the need to remain vigilant, particularly in light of the ongoing fragility of market conditions.

We are also considering the need for additional or revised supervisory guidance regarding various aspects of risk management, including further emphasis on the need for an enterprise-wide perspective when assessing risk. Much of our work is being conducted in close consultation with supervisors in other countries. For example, we are working through the Basel Committee on Banking Supervision to develop enhanced guidance on the management of liquidity risks. We are also seeking to promote better

disclosures by banking institutions with the goal of increasing transparency, thereby strengthening market discipline.

As you know, a major ongoing development is the implementation of the international Basel II capital accord in the United States. Basel II is intended to enhance the quality of risk management by tying regulatory capital more closely to institutions' underlying risks and by requiring strong internal systems for evaluating credit and other risks. Although Basel II will by no means eliminate future episodes of financial turbulence, it should help to make financial institutions more resilient to shocks and thus enhance overall financial stability. At the same time, we must ensure that the Basel II framework appropriately reflects the lessons of recent events. The Basel Committee has been evaluating how the framework might be strengthened in areas such as the capital treatment of off-balance-sheet vehicles and the use of credit ratings to determine capital charges. The relatively lengthy transition to Basel II will allow more opportunity to absorb the lessons of the financial turmoil and make necessary adjustments to the framework.

Conclusion

To summarize, the turmoil in credit markets underscores some important principles for bank risk management, including the value of proper risk identification and measurement, the need for robust and objective valuation methods, the importance of preparing for liquidity disruptions, and the critical role of strong oversight by senior managers. With renewed attention to these principles and the restoration of strong incentives for sound risk management, institutions should be able to overcome the difficulties we have seen in the recent application of the originate-to-distribute model and

begin to use it successfully again. Equally important, improvements in banks' risk management will provide a more-stable financial system by making firms more resilient to shocks. Supervisors must insist on effective risk management and provide as much support as possible for the implementation of needed changes.

Recent events have also demonstrated the importance of generous capital cushions for protecting against adverse conditions in financial and credit markets. I have been encouraged by the recently demonstrated ability of many financial institutions, large and small, to raise capital from diverse sources. Importantly, capital raising and balance sheet repair allow for the extension of new credit, which supports economic expansion. I strongly urge financial institutions to remain proactive in their capital-raising efforts. Doing so not only helps the broader economy but positions firms to take advantage of new profit opportunities as conditions in the financial markets and the economy improve.