

**Exploring the Macro-Prudential Aspects of Financial Sector Supervision**

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## **I. Introduction**

I am pleased to be here today to talk about a subject that is of great interest to me, as I am involved in both financial supervision and monetary policy. This subject—how our supervisory framework can contribute to a stable financial system that fully supports sustainable economic growth—is important for several reasons.

In recent years, in developing as well as developed countries, financial crises have occurred all too often, and have imposed great costs to the countries they have affected. In fact, in recent decades very few countries have escaped some form of financial distress or crisis. A 1996 survey by the IMF, for instance, found that 73 percent of their member countries had experienced significant banking problems during the preceding 15 years. Many of these problems led to substantial declines in GDP, serious disruptions in credit and capital markets, and adversity for the banking industry and its customer base. This historical record provides a clear picture of the importance of the supervisory issues we are discussing today—and of the need for careful thought regarding any effort to assure financial stability.

These recent financial crises have also coincided with and been influenced by a period of rapid and pathbreaking changes in our financial markets. While banks are still a critical part of the financial picture, they are now just one highlight on the financial landscape. Sharing the spotlight are an ever-expanding set of capital markets and the financial instruments and firms associated with them. In the United States at least, these developments are reintegrating banking and capital markets to a degree we have not seen since the Great Depression. These changes in our financial structure are, in turn, altering the nature of the financial crises we experience. Increasingly, crises originate in capital markets and are characterized by asset-price volatility and disruptions in market liquidity.

Because these developments and their effects on the supervisory framework are far from over, I would like to begin with a review of the major changes evident in the financial sector. Then I will review some of the supervisory steps already taken to address recent crises within the changing financial system. And finally, I will look at what the appropriate role might be for macro-prudential supervision and what could reasonably be accomplished under this framework, including shifting more attention to capital markets and the need to prevent costly financial crises there.

I should mention again, though, that as I am involved both with financial supervision and monetary policy, I have a natural tendency to think of supervisory issues in terms of our ultimate policy objectives of financial stability, sustainable economic growth, and customer protection, rather than in terms of micro- versus macro-prudential supervision. Thinking of it this way, I will explain why, despite all the changes we have observed in financial markets, the problems policymakers face today are the same ones we have always faced. They are perhaps more challenging today, however, because our financial system is so much more complex than it used to be.

## **II. The Changing Financial System**

Any assessment of today's financial system—both domestically and worldwide—must recognize that, in its detail, the system is much different than it was a few decades ago. Technology lies at the heart of much of this change. Technology has greatly reduced the cost of gathering, processing, and transmitting information, and thus has allowed a wide range of new financial instruments, rapidly growing competition across industry segments, and new methods

of conducting financial business and managing risk. In some ways, this change is revolutionary, a development of the information age. In other respects, however, it is just another stage in an evolution that has long been under way, driven in earlier periods by such developments as the telegraph, the telephone, and improved methods of transportation. From this longer-term perspective, what is most novel about this stage of technological change is not that changes are taking place, but that they are occurring at an ever-increasing pace.

From any perspective, the decline in transaction and information costs made possible by technology is allowing capital markets to operate more efficiently and to assume a much broader role in the economy. One notable outgrowth of this development is the disappearance of previously segmented financial systems. Today we see the emergence of a framework in which a wide variety of institutions and markets now compete directly for the same business. With this cross-industry competition and the rising importance of capital markets, we can no longer view prudential supervision and systemic risk as banking industry issues alone.

Another significant change is the variety of financial products and services available. Innovative financial instruments, electronic banking services, securitization, and the rapid growth of the derivatives market are now giving financial customers broader choices and allowing risks to be partitioned and distributed to those most willing to assume them. As a result, financial institutions and investors now have a multitude of options for controlling and diversifying their risk exposure.

Emerging along with these developments have been the institutional consolidation and globalization of financial markets. This trend is spawning increasingly large and more complex organizations with activities spread across many countries. This development, in turn, is increasing the interdependencies among major organizations and creating additional systemic

linkages.

In considering these developments, I want to emphasize two very striking but divergent patterns. First, of course, major financial institutions and other market participants have a wider range of opportunities to diversify risk through financial engineering and a broader range of activities. But at the same time, the complex web of connections across institutions, markets, and countries is likely leading to new sources of systemic risk and financial instability. We must be prepared to deal with the effects of these risks. These patterns are not unique to this recent period of financial market innovation. Rather, they have always characterized change in financial markets.

Clearly, it can be useful to look to the past to inform ourselves regarding how to better approach the future. But I would stress that we need to be careful not to presume too much or to rely on past experience in an indiscriminate way. It is always tempting to assume that if we can learn how to prevent the crises of the past, we might be able to anticipate future crises. I will argue, instead, that future crises will always differ somewhat from past crises. This is particularly so because supervision and the role of the market continue to change—in part to prevent a replay of the crises of the past. Consequently, a strict reliance on past experiences and historical models is likely to provide limited help in anticipating the answers we need in this changing financial landscape.

### **III. A Changing Supervisory System**

These many and varied developments in the financial system are influencing how we think about supervising institutions to accomplish our public policy objectives. Our objectives

remain the same as always—preventing a systemic crisis, protecting financial customers, and promoting a competitive and efficient financial system that supports economic growth. But the steps we use to accomplish these objectives are undergoing significant change. And in pursuing these objectives, we find ourselves, as always, having to consider an even broader range of institutions, activities, and markets.

To illustrate how our supervisory framework is changing, let me remind you of one of the greatest financial crises in modern history—the Great Depression of the 1930s. The public lost confidence in banks and financial markets, and many banks failed in a period of contagion. Quite naturally, a restrictive regulatory and supervisory system was put in place that focused on preventing individual banks from failing, protecting small depositors, and increasing the integrity of financial markets.

The financial revolution of the last few decades, however, has made significant parts of this regulatory framework no longer workable. Rising competition across different segments of the financial industry—both in the United States and worldwide—has forced us to remove many regulatory barriers. Bank interest rate ceilings, limits on geographic expansion, and activity constraints, which once served to protect particular segments of the industry, are rapidly becoming things of the past. Also, recent financial crises have revealed moral-hazard problems and loss exposures under public safety nets. These risks have forced many countries to take a closer look at the explicit and implicit guarantees they provide and, in some cases, to reduce or rechannel such support.

As an outgrowth of these changes, the marketplace is also playing a greater role in determining how financial resources will be used and which institutions and products will survive and prosper in a more competitive environment. In turn, the rising complexity of

financial instruments and institutions is changing the supervisory system. Large institutions are not only conducting a much wider range of activities than before, but they can now more readily shift their risk profiles. These changes, consequently, have led to greater supervisory focus on an institution's risk management practices and internal controls—that is, to a greater focus on an institution's ability to measure, manage, and control its risk exposures. Associated with this shift in focus, banking supervisors have placed less emphasis on a bank's balance sheet condition at a single point in time. Also, through "continuous supervision," as well as "risk matrix" profiles and other tools, supervisors are directing closer attention to the largest organizations, especially those that could pose systemic concerns.

Other significant changes encompass supervisory efforts to control interbank exposures, as well as exposures among banks and other financial institutions and markets. With major institutions consolidating and becoming even larger, more supervisory attention is necessarily being devoted to relationships across institutions and to the systemic risks these linkages could pose. Some steps supervisors and institutions have taken include limits on interbank deposits, Fed daylight overdraft fees and caps, and various clearinghouse standards, such as collateral requirements, loss-sharing agreements, and exposure limits. Marketplace standards and practices are further developing to control counterparty risk in the derivatives market and across many trading, clearing, and settlement activities.

Within the capital markets, a number of regulatory changes have occurred in response to market disruptions, investor demands, and other events. The 1987 stock market crash in the United States, for example, brought forth a variety of changes to help ensure that trading would henceforth occur in a controlled and orderly fashion. Several commercial paper defaults in 1989 and 1990 prompted the SEC to tighten the restrictions on the quality, maturity, and

concentrations of commercial paper and securities that money market mutual funds could hold. In the wake of Enron, WorldCom, and other recent accounting scandals in the United States, several steps have been taken to provide for better corporate governance, more accurate public disclosures, and stronger oversight of public accounting firms. These include passage of the Sarbanes-Oxley Act of 2002 and the institution of stricter stock exchange standards for listed firms.

This is only a brief summary of the changes we are seeing in financial supervision in response to the revolution in financial services and the recent financial crises that have plagued many countries. We are, by no means, through with the process of financial reform, which brings us to the issue of how macro-prudential supervision best fits in our supervisory framework.

#### **IV. The Role for Macro-Prudential Supervision**

In the context of the aforementioned framework, I want to focus the rest of my remarks on the appropriate role for macro-prudential supervision in today's financial environment. In my dual role as a financial supervisor and a monetary policymaker, I am constantly reminded of the importance of having a macro-prudential supervisory focus. As a supervisor, I have had to deal with the banking and credit problems that arose from the energy, real estate, and agricultural collapses in the United States during the 1980s. And, as a monetary policymaker, I am constantly exposed to many credit and capital market issues regarding the possible buildup of debt and investment imbalances. Addressing these types of financial stress is a key challenge for macro-prudential supervision.



Based on my experiences, I doubt we will ever predict financial crises very well. We have never predicted them well in the past. If we could have foreseen them then, we would have taken steps to prevent them, or at least greatly minimize their consequences. At our Jackson Hole Symposium last year, Federal Reserve Chairman Alan Greenspan stated that “Uncertainty is not just an important feature of the monetary policy landscape; it is the defining characteristic.” The same comment could be made about financial markets and supervisory policy.

There are many examples of this: the Asian financial crisis, the Latin American currency crises, the Scandinavian real estate collapse, the U.S. stock market crash of 1987, and the 1998 Russian debt crisis and resulting problems with LTCM. In each case, to varying degrees we were aware of potential problems and exposures, but problems failed to arise as expected—until one day they did arise. Often, an economic downturn, high interest rates, or exchange rate movements stressed markets and institutions that once appeared sound to the point of crisis or failure. Ex post the source of each crisis became obvious. Still, we were caught by surprise. Conversely, many problems predicted by financial analysts, investors, and supervisors have never materialized. That is why we inevitably come back to such basic supervisory and financial concepts as capital adequacy, risk diversification, and limits on interbank and market exposures.

With this said, let me now address three questions that I believe we should be asking ourselves when thinking about a macro-prudential supervisory framework. First, are market discipline and self-regulation sufficient to prevent systemic crises? Second, how can supervisory policy better address systemic crises and macroeconomic disturbances? And third, can monetary policy supplement macro-prudential supervision? My comments further reflect the importance I place on having a central bank active in both monetary and supervisory matters.

*Are market discipline and self-regulation sufficient to prevent systemic crises?*

A factor that is becoming more prominent in a macro-prudential supervisory framework is market discipline and the role that it could play in making financial market participants more resilient to shocks. With the removal of many regulatory barriers, the market now has greater influence in determining the operating parameters for financial institutions and markets. In fact, many recent financial market developments have occurred precisely out of a desire by market participants to better share and control risks. Examples include the growth of the derivatives market, increased equity support in U.S. real estate markets, and ongoing investor efforts to penalize financial firms with poor risk management practices and inadequate capital.

For market discipline to work effectively and efficiently, a necessary ingredient is timely, appropriate, and accurate information. Both investors and policymakers can play an important role in demanding and helping to establish information disclosure standards for financial institutions and other market participants. I have also advocated that financial supervisors play an active role in helping to ensure financial institutions adequately disclose significant information to the market, including significant supervisory findings.

Our recent past further indicates that the marketplace can impose the most effective and strongest form of discipline on financial institutions. This discipline should help reinforce macro-prudential supervision and, when markets are properly structured, contribute to the strength of the overall economy. However, I believe that financial externalities will prevent markets from providing all the discipline needed to reduce the risk of contagion to desirable levels. The complexity of linkages among market participants is making it difficult for the market to assess true risk exposures, and in spite of recent improvements in public disclosures,

market participants are unlikely to have the full set of data necessary for such assessments. In addition, institutions and investors generally will have no reason to internalize the effects that they might have on others during a crisis.

***How can supervisory policy better address systemic crises and macroeconomic disturbances?***

From a supervisory standpoint, many of the steps we have taken during the last few decades and will be taking in the near term are closely aligned with macro-prudential supervision. This macro-prudential focus is being driven by the changing financial system. With larger institutions, greater competition across market segments and the growing importance of capital markets, supervisors will have to pay increasing attention to the interrelationships among institutions and markets and to the risk that the largest institutions pose to the overall system. In terms of macro-prudential supervision, there are three basic concerns for supervisors. They are to promote good risk management practices at large institutions that might pose a systemic risk, to limit exposures between institutions and the markets they serve, and to ensure that supervisory policies do not have adverse or ill-timed effects over the economic cycle.

Risk-focused supervision is becoming a cornerstone in supervisory efforts to address risk management practices at large and small institutions. Under risk-focused supervision, supervisors channel the vast majority of their attention to the areas and activities that create the greatest risk exposure to an individual institution. For larger institutions, this implies an awareness of risk exposures that pose a potential threat to other firms and to the general economy, including any significant risk concentrations in individual markets. While risk diversification is nothing new, we should remind ourselves that it is a critical point of emphasis, helping to ensure that institutions are stable across the economic cycle. U.S. banks, in fact, have

performed remarkably well in a trying environment during the last few years, and a prime factor behind this performance is improved risk diversification and management.

Risk management is just as important for investment banking firms and other market participants. While securities firms and some other capital market participants may focus more on trading activities and less on maintaining a portfolio of assets, it is still essential that these institutions diversify their counterparty risk and thoroughly check the reputation of potential trading parties. Likewise, merchant banks and others with a portfolio of investments are wise to diversify their investment risk. So, whether you view risk-focused supervision as micro- or macro-prudential, this form of supervision, along with the related efforts of banks and other market participants, will help make the financial system less vulnerable to economic disturbances.

In addition to continuing to rely on risk-focused supervision for individual institutions, we must continue to work to limit interbank exposures and improve the overall resiliency of our financial system. In the United States, for example, major institutions and bank and securities supervisors are taking steps in the post-9/11 environment to ensure that core clearing and settlement systems and other critical financial market roles can be resumed in the event of disasters or key systems failures.

A final element in macro-prudential supervision is that our supervisory policies and rules have consistent and appropriate effects over the business cycle, including our accounting rules, capital standards, provisioning requirements, risk-management practices, and supervisory attitudes and approaches. Capital and provisioning standards, for example, should reflect a longer-term picture of risk rather than just the most recent experience or a very optimistic or pessimistic view of near-term events. While some have suggested that supervisory policy could

be used more on a countercyclical basis to deal with credit and other market imbalances, I believe our inability to accurately foresee the future and our need to maintain consistency throughout the entire supervisory process will leave supervisors playing a neutral role, at best, over the cycle.

***Can monetary policy supplement macro-prudential supervision?***

From a central bank and monetary policy standpoint, I believe the most important thing policymakers can do is pursue a stable, low-inflation environment. Unexpected inflation or deflation clearly disrupts the agreements inherent in longer-term debt contracts and the investment objectives and plans of individuals and businesses. If extreme enough, it can spark a financial crisis.

Some, including many at the BIS, have argued that financial crises often stem from financial imbalances that build up in the economy, and that there is a role for monetary policy to act preemptively to prevent or contain such imbalances. I would like to comment on that position.

First, as I have suggested, financial crises are by their nature difficult if not impossible to anticipate with any real degree of certainty. In hindsight, each crisis involves analysis and an understanding of its causes, as well as changes and corrective steps that supervisors and market participants pursue to prevent its recurrence. This means that a similar crisis is unlikely to re-occur anytime soon. However, as the financial system evolves, new vulnerabilities are uncovered for which we are not prepared. If history is any guide, there are scant reasons to believe that we will be much better prepared at spotting these emerging vulnerabilities than we have been in the past. Not that we should not try, of course. But if we grow too secure in the

belief that we can foresee and prevent crises before they occur, we risk becoming complacent precisely when we should be more vigilant. For these reasons, early warning models of financial crises based on historical data are unlikely to extrapolate well to future periods, particularly with the rapid changes we are seeing in credit markets. Indeed, the past few decades have been a unique experience with substantial deregulation in many countries and a relaxation of previous constraints on foreign capital flows, combined with slow progress in building a new supervisory framework. It is thus not surprising that financial imbalances and crises developed during this time. But going forward, in the face of further dramatic changes in the financial sector, they may be even harder to identify and address in a timely fashion.

Second, even if we have a sense that financial imbalances may be emerging, preemptive monetary policy is a very broad tool to be applying effectively to the imbalance. Most perceived financial imbalances occur in a particular financial market or segment of a market. For example, when housing price bubbles have occurred in the United States, they have appeared only in a few select cities. I am unaware of there having been a bubble in the national housing market. And even in the late 1990s, the “bubble” in equity markets was concentrated in the high-tech sector. The rest of the stock market did not appear to be overvalued. Raising interest rates to reduce liquidity is an extreme response to the possibility of an imbalance in a single segment of our financial system. It would risk slowing the economy when attempting to address a unique segment within it, which is a sizable risk. A better response would be more targeted, but such responses are beyond the scope of our monetary policy tools.

Finally, monetary policy itself is always formed with incomplete information and, given the lag effects of policy actions, could sometimes contribute to imbalances or other circumstances that aggravate a crisis. Identifying such circumstances is usually only possible

with the benefit of hindsight and with knowledge of the economy that no one, including policymakers, will have when policy actions are first taken. My point here is that the better we get at pursuing our long-term monetary policy objectives, the less likely we are to unknowingly contribute to crises. And any crises that do arise are likely to be smaller and less damaging.

Thus, I believe the best we may be able to do to prevent financial crises from a monetary policy standpoint is to aim for stable economic conditions that will make market imbalances less likely to occur or less severe should they occur. This is not to ignore the important function of monetary authorities to use open market or discount window operations to quell liquidity crises and threats to market confidence, much as occurred after the 1987 stock market crash, the 1998 Russian debt crisis, and 9/11.

## **V. Closing Comments**

I certainly concur with those who stress the need to take a systemwide or macro-prudential view of financial market supervision. This has always been important. And it remains important today as we move toward a more market-driven financial system and witness rapid growth in capital markets. The larger institutions, more extensive linkages across institutions and markets, and more complex financial instruments that inevitably follow these developments will further contribute to the need to look at supervision and financial risk on a systemwide basis.

I think we have already come far in improving the overall resiliency of our financial system and limiting the buildup of common and significant exposures both systemwide and between individual institutions and markets. In the coming years, we must continue down this

path. Monetary policy must also continue playing a significant role in ensuring a stable environment in which the expectations of debtors, creditors, and investors can be realized. Yet, I believe that monetary policymakers and bank supervisors working independently will not be enough. To accomplish our objectives, they, along with supervisory authorities from all other parts of the financial system, will have to work together to share information about risks developing in the institutions and markets under their review. More than ever before, we will need better communication and coordination to ensure the financial stability needed to fully support sustainable economic growth.