

Timothy F Geithner: Hedge funds and derivatives and their implications for the financial system

Remarks by Mr Timothy F Geithner, President and Chief Executive Officer of the Federal Reserve Bank of New York, at the Distinguished Lecture 2006, sponsored by the Hong Kong Monetary Authority and Hong Kong Association of Banks, Hong Kong, 14 September 2006.

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I want to thank Joseph Yam for inviting me to Hong Kong for this occasion.

We are approaching the 10-year anniversary of the financial crises of 1997-99. Those crises were remarkable both in the scope of countries and markets they affected, and for their speed and severity. The circumstances leading up to the crises varied across countries and regions, as did the magnitude of the resulting damage to the real economy. But each of these events had one dynamic in common - the confluence of a sharp increase in risk perception, and the subsequent actions taken by financial institutions and investors to limit their exposure to future losses. As asset prices declined and volatility increased in response to increased concern about risk, firms moved to call margin, to reduce positions and to hedge against further losses. These individual actions had the aggregate effect of inducing even larger price declines and further heightening perceptions of risk, ultimately propagating and amplifying the effects of the initial shock.

The dynamic I just described was not unique to the crises of the late 1990s, nor was the damage to overall economic activity they left in their wakes. Systemic financial events with spillovers to the real economy have been a persistent feature of the economic environment, and both financial market participants and policymakers have grappled with the challenge of how to reduce their incidence and to minimize their severity, longevity and impact on the broader economy.

There is a lot we do not understand about these challenges, but we know more today than we once did. In the case of the crises of the late 1990s, despite the broad-based nature of the financial market turmoil, in countries where capital cushions in the financial sector were strong relative to risk, where there was a greater diversity of institutions in the financial system to absorb the losses, and where monetary authorities were in a position to provide liquidity to restore confidence, the financial and macroeconomic impact of the crises was relatively modest. Where those conditions did not exist, the damage was acute.

The U.S. economy appears to have become more resilient to financial shocks. Over the past two decades, the U.S. economy has experienced several episodes of significant financial market strain. These episodes were associated with spikes in risk perception and significant market volatility within financial markets, but none proved exceptionally damaging in terms of the overall macroeconomic impact. The mild impact of these episodes on the real economy contrasts with financial events such as the "credit crunch" that exacerbated the 1990-91 recession. That episode was characterized by a widespread reduction in the provision of credit by banks in response to loan losses and the need to raise capital.

The resiliency we have observed over the past decade or so is not just good luck. It is the consequence of efforts by regulatory, supervisory and private financial institutions to address previous sources of systemic instability. Risk management has improved significantly, and the major firms have made substantial progress toward more sophisticated measurement and control of concentration to specific risk factors. What seems to have been most critical in preventing financial market turmoil from translating into a significant reduction in credit provision by banks and other financial institutions were the steps taken by regulatory authorities and financial institutions alike to strengthen capital in the core of the financial system, and to measure and manage risk.

These efforts have most notably manifested themselves in increased levels of risk-adjusted capital in the core of the system relative to what prevailed in the early 1990s. In the United States, for example, tier-one risk-based capital ratios have stabilized near 8.5 percent, considerably higher than the estimated levels around 6.5 percent for the early 1990s. This is based on a relatively crude measure of risk, but the direction of the improvement is right and the magnitude of the change is significant.

Relative to the conditions that prevailed in the early 1990s, the higher levels of capital in the core now provide a larger buffer against shocks and enhance the ability of the banking industry to act as a critical stabilizer in times of stress by providing liquidity to the corporate sector. When financial markets

dry up, firms turn to banks and their unused loan commitments and lines of credit. Banks are in a position to fund this liquidity because transaction deposits tend to flow into the banking sector. In times of crisis, it appears that U.S. investors now run to banks, not away from them.

In view of the critical role that efficient credit provision plays in economic growth and development, the benefits to the global economy of getting the underpinnings of a stable, efficient financial system in place are substantial. At the same time, we also know that these important markets are susceptible to certain “market failures,” such as information asymmetries, incentive conflicts, moral hazard and agency problems. By at times distorting incentives to manage risk, these market imperfections can alter credit decisions and lead to a higher overall level of risk-taking than may be optimal for the economy as a whole. This provides the classic rationale for supervision and regulation. Supervision and regulation have the potential to help mitigate these sources of market failure. The recognition of a market failure does not mean, of course, that policymakers have the capacity to design solutions that can effectively mitigate those failures without raising others problems.

The fundamental challenge for policy is how to achieve the appropriate balance between efficiency and financial resilience. With too much government intervention, innovation is constrained and the system is stifled. With too little, the probability of systemic crisis may rise to levels that are unacceptably high. We judge the appropriate balance not against the standard of whether it reduces to zero the probability of a major financial crisis, the failure of a large individual financial institution or a major reduction in asset prices. That is not an appropriate objective of policy. Some vulnerability to crisis is a necessary and unavoidable feature of a dynamic and efficient financial system where asset prices need to be able to adjust to changes in fundamentals. The consequences of trying to induce regulated financial institutions to self-insure against all conceivable potential risks would do substantial damage to the level and efficiency of economic activity and cause the same risks to migrate to other institutions.

This leaves policymakers with a set of normative questions, the answers to which must be based on knowledge about how markets work, as well as a substantial degree of judgment about what policy actions are likely to be both appropriate and effective. What level of exposure to very low probability, extreme adverse events should we be comfortable living with? What fraction of that residual exposure to the potential range of adverse events can and should the official sector try to protect the system against?

The apparent success that market participants and supervisors have had so far in confronting these issues does not imply that the potential for systemic risk in financial markets no longer deserves the attention of central banks and supervisors. Although improvements in capital adequacy and risk-management tools seem to have been a key part of the increased resiliency we’ve seen in recent years, we can’t assume that the standards and risk-management practices consistent with stability in the recent past are the ones that will perform well in the future. This is partly because it is impossible to know for sure how the favorable macroeconomic conditions and the financial sector stability interacted and reinforced each other. That is, would financial sector outcomes be as favorable in a weaker macro environment?

But probably more important is the fact that even as we have pushed forward on regulatory, supervisory and risk-management efforts, financial markets, instruments and institutions have continued to evolve as well. Among the most notable of these changes has been the rapid growth and innovation in derivatives and the greater relative importance of private leveraged financial institutions, such as hedge funds.

The changes in credit markets that have accompanied the latest wave of innovation in derivatives and the large role played by leveraged financial institutions in those markets may exacerbate some of the traditional sources of challenges in financial markets. And they present new challenges for the framework of incentives and constraints that central banks and supervisors set for financial institutions.

On balance, we believe these changes in the financial environment are likely to come with substantial benefits in terms of overall market efficiency. In the remainder of my remarks today, I will highlight some of these benefits, but will also consider some of the challenges they present for central banks and governments in determining where on the spectrum of efficiency and vulnerability to crisis the financial system should operate, and in crafting the policies consistent with achieving that objective.

Changes in financial markets since the late 1990s

In the United States and the other major markets, the policies designed to mitigate the risk of financial crises rely primarily on a capital-based system of supervision of the major financial institutions, reinforced by measures to improve market discipline. These policies have evolved to reflect both the fundamentally important role credit markets play in the economy, as well as the reality that these complex markets are susceptible to a range of potential market failures.

In thinking about the potential supervisory and regulatory challenges presented by the broad evolution of the financial system over the past decade, it makes sense to first consider how some of these changes may have enhanced market functioning by mitigating at least some of the imperfections that characterize these markets. My remarks here are a mix of what we see happening in practice and how we might expect things to work in principle.

To begin with, financial institutions within the regulated core of the financial sector have become larger, and the industry considerably more concentrated. The 10 largest bank holding companies now hold roughly half of banking assets, compared to less than a third in 1990. These institutions now operate with greater geographic scope and offer a broader range of financial products, but overall volatility of earnings has not changed much relative to capital.

Hedge funds, private equity funds and other leveraged financial institutions control increasingly large shares of aggregate financial capital and play very active roles in many asset markets and in credit markets. Although assets under management in hedge funds still represent a relatively small share of total financial assets, their relative share has increased significantly and their ability to take on substantial leverage magnifies their potential impact on financial market conditions. These private leveraged funds have become an important source of protection to regulated institutions by being large sellers of credit insurance in the rapidly growing market for credit default swaps.

In terms of enhancing overall market efficiency, the growth of these private leveraged institutions can be expected to provide benefits in terms of improved liquidity, price discovery via arbitrage, diversity of opinion and diversification opportunities for investors. The increase in the share of assets managed by private pools of capital devoted to arbitrage activity should improve the overall functioning of markets. In most circumstances, increased trading and participation contributes to market liquidity and makes markets less volatile. The ultimate benefit should be lower risks for all market participants. This in turn should reduce the risk premia associated with holding financial assets, and ultimately reduce the cost of capital.

The rapid growth in the relative importance of these leveraged financial institutions has been accompanied by a number of structural changes as well. The total number of funds has grown dramatically. There are more very large hedge funds and private equity firms. Greater institutionalization, and the maturity of risk management and operational infrastructure in the largest of these private funds, has likely reduced operational risk. To the extent these changes have increased the diversity of firms and strategies in this part of the financial system, and this is hard to measure with any confidence, this heterogeneity should provide diversification opportunities, foster more efficient price discovery and could help improve stability.

These changes in market participants have occurred in conjunction with a dramatic acceleration in number and type of derivative instruments. These developments have likely had the important impact of allowing for a more efficient distribution and more effective management of risk.

All of these changes should move the market in the direction of fostering the efficient allocation of credit and capital formation, and thus enhancing the economy's real growth potential.

The available evidence is consistent with the view that the changes in the core of supervised institutions, growth of the leveraged sector and rapid financial innovation have strengthened the efficiency and resiliency of the overall financial system. As I mentioned at the start, a broad range of recent financial shocks do not seem to have adversely impacted the real economy. The international financial crisis that began in 1997 did not spillover to the nonfinancial sector in the United States. The equity price collapse and deterioration in credit in 2000 did not cause significant damage to the core institutions in the U.S. market. The relatively limited damage caused by operations failures of the 9/11 attacks reflected the strength of the capital position of major intermediaries, as well as the policy actions by the Federal Reserve to provide liquidity to the markets.

More recently, the series of smaller financial shocks experienced since 2001, including the corporate bond defaults after 2001, the corporate accounting scandals in 2002, credit downgrades in the U.S.

automobile industry in 2005, the failure of Refco, the sharp declines in mid-2006 in equity, commodity and emerging markets debt prices caused little contagion to other markets and limited strain on financial institutions.

Challenges

The favorable balance between efficiency and resilience in the financial system we have observed recently does not of course guarantee we will achieve as favorable a balance in the future. The prospects for future stability will depend in part on how effective supervisors are in adapting policies in response to the ongoing evolution in markets.

Financial institutions face strong incentives to monitor and limit their risk profile and the risk-taking of their leveraged counterparties to some efficient level where benefits balance costs at the margin. This is good for the firm and also good from society's perspective.

Private pools of capital have the capacity to use extensive leverage to amplify returns. This leverage can be acquired in a variety of ways: through repurchase agreements and reverse repos, through secured financing and securities lending and through derivatives and structured financial products.

The ability of funds to take on risk and leverage is constrained by two external sources of discipline - the returns required by their investors, and the terms on which their dealers/financers are willing to extend credit. In other words, the fund is constrained by the willingness of outsiders, collectively, to take exposure to the fund. The willingness of banks and investment banks to take on exposure to hedge funds is in turn influenced by the capital and supervisory framework that applies to those institutions and the discipline imposed on them by the market.

The effectiveness of market discipline in constraining the risk-taking behavior of financial firms, however, may be compromised by the presence of market failures of the type mentioned above. While this issue is at the heart of risk management challenges for the provision of credit more broadly, the rise in the relative size of the private leveraged fund sector and the rise in the importance of new derivative financial instruments may complicate the design of policies and risk-management practices to counteract these traditional frictions.

Virtually all types of credit markets suffer from informational problems - consider the challenge faced by a bank in assessing the risk associated with lending to a small unrated company. But the complexity of new financial products, the rapidity with which positions can change, and the lack of a long time series of historical relationships seems likely to enhance these problems for leveraged institutions operating in new markets such as credit derivatives.

Funds typically deal with several different banks and investments banks. The desire to maintain the confidentiality of their trading strategies has traditionally led firms to be quite opaque to outsiders and reluctant to give their banks sufficiently detailed information on a real time basis about the risk profile of the overall fund. Without that information, individual dealers or banks have a difficult time evaluating the probability of default of a leveraged counterparty and the potential covariance with other positions of the firm.

Individual firms may also see only a piece of the hedge fund's positions, and if their direct exposure to the individual fund is small, may perceive less need to worry about the overall risk profile of the fund. Public disclosure requirements designed to compensate for this information problem do not exist. Even if information on the overall size of the fund's positions were available periodically, it would be difficult to accurately ascertain its risk profile. This gives individual firms an incentive to free-ride on the due diligence or monitoring by others, which may render resultant collective discipline inadequate.

The foundations of modern risk measurement rest on a framework that uses past returns to measure or estimate the distribution of future returns. The stability of the recent past, even if much of it proves durable, probably understates potential risk. The parameters used to estimate value at risk can produce very large differences in predicted exposure, especially at extreme confidence intervals.

Estimating the potential interactions among these exposures in conditions of stress is even harder, due to the uncertainty about the behavior of investors and other market participants and because of the potential effects of financial distress on overall economic activity.

The relatively short history of returns for new products, the complexity of measuring exposure in many new instruments and limitations on transparency also create the potential for classic "agency" problems - internal conflicts of interest that can lead to problematic outcomes. In exposures where the

measurement of potential loss is more uncertain, more subjective, and less amenable to independent evaluation, for example, reasonable people can come to very different judgments about the potential risk in a particular position. Normal competitive pressures can push valuation methods away from the conservative extreme and generate larger exposures to risk. As a result, individual firms and the overall market are more exposed to risk in a stress scenario than would be desirable.

Another set of challenges comes with the broader damage to markets that can accompany the failure of a major financial institution. Firms have strong incentives to avoid large financial losses and to reduce the risk of failure, of course, but they do not have the incentive to internalize the potential external consequences of their distress on the financial system, and it is unrealistic for market participants to incorporate these risks into market prices. This “public good” dimension of financial stability means that while the whole economy benefits from a more stable financial system, each individual institution would prefer that others incur the costs associated with its provision. As a result, firms may collectively underinsure against the risk of failure and underinvest in the infrastructure and policies that promote financial stability.

And finally, policies designed to reduce the risk of failure in financial markets create moral hazard, dulling the incentive individual firms face to self-insure against potential loss. We apply a set of capital requirements and supervisory constraints to offset the distortion created by the safety net, but these may not fully compensate for the impact on behavior of the broader range of financial intermediaries of the perception that the authorities will act to protect the financial system from systemic risk.

While these constraints and challenges may weaken the effectiveness of counterparty discipline, they are not fatal constraints. If individual dealers to a very large hedge fund each operate with adequate knowledge of the risk profile of the fund, if they each make conservative judgments about their potential direct exposure to the fund in a stress scenario, if they limit the overall exposure of the firm as a whole to the broader market distress that might accompany that failure of a major hedge fund, if they compensate for the uncertainty in making these judgments by charging appropriate risk premia or building in a greater cushion against adversity, and if the supervisory constraints on the core institutions adequately offset the moral hazard that comes with that relationship, then the financial system as a whole will be less vulnerable to distress in the hedge fund sector. These are exacting conditions, but they are not unachievable. And we all have an interest in encouraging progress toward that objective.

Implications for policy and risk management

What are the implications of these challenges for central banks and supervisors? The changes in the financial system we’ve seen over the past decade don’t change the principal objectives of policy - to ensure that the core financial institutions maintain an adequate cushion of capital in relation to risk, and to build greater resilience into the infrastructure that supports the financial markets. We have very limited ability to predict the sources of stress to the financial system, but if the cushions at the core of the system are robust, the risk of a systemic crisis will be diminished, and central banks will have greater ability to mitigate the risk of broader damage to the economy.

The pace and extent of the changes in financial markets requires supervisors to work harder to understand the consequences of changing market practice for the incentives and constraints we impose on financial institutions. Let me give two examples of evolving market practices that may help alleviate one concern only to exacerbate another.

Collateral plays an increasingly important role in counterparty credit risk management, particularly for highly leveraged counterparties. The increased importance of variation margining plays a critical role in counterparty credit risk management. These changes help limit the exposure of the core financial institution to losses among their leveraged counterparties, but they also act to exacerbate volatility, with asset price declines forcing further margin calls, adding for further market declines. Where initial margin is thin in relation to potential exposure, counterparties are more exposed to adverse movements in asset prices, and in a situation of stress the actions they take to reduce their exposure to further losses are likely to have a greater negative impact on market dynamics.

In market conditions where initial margin may be low relative to potential future exposure, the self-preserving behavior of leveraged funds and their counterparties may be more likely to exacerbate rather than mitigate an unexpected deterioration in asset prices and market liquidity. As financial firms demand more collateral, funds are forced to liquidate positions, adding to volatility and pushing down asset prices, leading to more margin calls and efforts by the major firms to reduce their exposure to

future losses. In the context of the previous discussion of externalities, firms' incentives to minimize their own exposure can amplify the initial shock and impose on others the negative externality of a broader disruption to market liquidity.

The fact that this potential adverse dynamic exists does not mean it will occur. The deviation of prices from their fundamental values in times of stress is likely to create incentives for firms and investors with resources to step in and provide liquidity. In other words, the market may itself have the capacity to self-correct and prevent a disruptive loss of liquidity.

A second example is the recent trend to lengthen lock-ups, implement redemption gates that limit withdrawals, and create special side-pocket accounts for particularly illiquid investments by hedge funds. Each of these changes may serve to reduce the liquidity risk of the fund, which should be beneficial and potentially reduce the disruption from the forced liquidation of positions. They may also, however, reduce market discipline and increase the overall scale of leverage assumed by those funds. We don't have the capacity to assess with confidence the balance of these effects on the probability of crisis and the severity of market dynamics in conditions of stress.

What should be the focus of supervisory efforts in this new context? Clearly, capital supervision and market discipline remain the key tools for limiting systemic risk. The emergence of new market participants such as leverage institutions does not change that. I am going focus on three broad policy priorities - risk management, capital and margining practices, and the financial infrastructure.

Risk management

We should focus more attention on parts of the risk-management process where uncertainty is greatest and materiality of the risks that we can't readily quantify is highest. This means more attention on the risk factors where the measurement challenges are most complex. It means more attention on assessing potential exposure in extreme events that lie outside past experience, not just those outside of the recent past.

These challenges require using a mix of different analytical tools to help illustrate the range of possible outcomes and the dimensions of uncertainty that apply to the measurement of exposure. The focus should be not on the specific estimates produced for various types of asset price movements or stress events, but the uncertainty that surrounds those estimates and the magnitude of the potential underestimation of losses. Another way to say this is that we probably need to spend as much time discussing the limits of the quantitative outputs of the risk-management process as we do on the estimates produced by the models.

Understanding and evaluating "tail events" - low probability, high severity instances of stress - is a principal, and extraordinarily difficult, aspect of risk management. These challenges have likely increased with the complexity of financial instruments, the opacity of some counterparties, the rapidity with which large positions can change, and the potential feedback effects associated with leveraged positions.

Stress testing and scenario analysis have become central to the process of risk management, and we have seen substantial progress since 1998. The efficacy of these tools should be judged in part by the extent to which they capture, on a high frequency basis, the full exposure of the firm to a sufficiently broad range of adverse conditions, the aggregate exposure to specific types of different risk factors and types of counterparties, the potential interactions among those factors, the effects of a general loss of liquidity and confidence in markets, and the constraints on the ability of the firm to move to reduce its exposure to further losses.

And, of course, the credibility of the risk-management process should be judged not just by the quality of attempts to estimate stress exposure, but also by the impact of these results on the decisions about how much exposure the firm actually takes. In other words, effective stress testing must be viewed not only as a tool for monitoring the risks a firm has taken, but for actually influencing and changing behavior.

Supervisors should focus on concentrations of exposure to a range of different risk factors, not just on the concern of the particular moment or the most recent sources of shocks. Just as generals are often accused of preparing to fight the last war, practice tends to chase measures of direct exposure implicated in past crises, or what seem like the plausible candidates for future crises, whether to real estate, to hedge funds, to structured financial products, to emerging markets or to a particular industry.

This may be necessary and desirable, but it is not the most challenging task in risk management, and we generally don't put ourselves in the position of trying to substitute our judgment for the markets on what level of direct exposure to a particular company or industry is prudent relative to capital.

The better approach is to look at what might happen to the firm's losses in various alternative, more adverse states of the world, and then assess the direct and indirect effects of distress in different parts of the portfolio and the interactions among them. The major financial institutions, for example, typically take on very little direct current exposure to hedge funds as group. But, as you might expect, the scale of potential future exposure is more substantial. An even greater challenge is measuring the exposure of the firm not simply to the direct effects of the failure of a particular hedge fund counterparty, but to the broader distress that it might cause to other market participants or its impact on the other exposures of the firm. The management of these direct and indirect exposures needs to be an important focus of attention.

Capital and margin

Supervisors have put a considerable amount of effort over the past decade into designing a successor to the Basel capital accord. The present regime does not do a good enough job of capturing the risks a major institution typically assumes today. Because it understates the amount of capital required against some risks, overstates others, and ignores still others, we should work to put in place a replacement regime as quickly as we can be confident we have a viable alternative. The prudent, conservative approach should be to move forward to a more risk sensitive framework that creates better incentives for prudent risk management, not to try to extend the life of the present accord.

It is critical that these broader efforts to fix the capital regime be reinforced with more attention by supervisors to margin practice and limits around the counterparty risk-management process within the major financial institutions. The regulatory capital regime is designed to offset the effects on individual firms of lower margin. Where margin levels are low relative to potential exposure, the capital requirement is higher. Where margin is higher, the capital charge is lower. Both capital and margins have costs, and firms seek to limit these costs and choose their preferred combination.

The question for policymakers is whether the mix of capital and margins produced by the market is appropriate from the perspective of the financial system as a whole. As forms of financing that enable leverage and as leveraged funds grow in importance, the overall level of margin held against positions can provide an important cushion against the type of adverse market dynamics and general run on liquidity we saw in 1998. For these reasons, in the 2005 report of the Counterparty Risk Management Policy Group, chaired by Gerry Corrigan, a diverse mix of major market participants recommended that margin levels be set at a threshold that is "sustainable over the cycle." This reflects a view that, in general, the initial margin required of unregulated leverage counterparties should be set to provide some cushion against potential exposure.

Financial infrastructure

Supervisors should continue to encourage improvements in the infrastructure that supports financial markets. When we think about infrastructure in today's market, it's not enough to look just at the technology and risk-management systems that support the major exchanges and the payments and settlement systems operated by central banks and private utilities. This view is reflected in the amount of recent supervisory attention that has been focused on the systems within and among private institutions that support the bilateral over-the-counter derivatives markets. Last September, 14 major financial institutions and their principal supervisors met at the Federal Reserve Bank of New York to undertake a concerted program of improvements to the infrastructure that supports the OTC credit derivatives market. When that group reconvenes next week, we will review the extent of progress in reducing the backlog on unconfirmed trades and increasing the number of trade confirmed through automatic systems. We will also assess the progress toward agreement on a protocol for settlement events. And we will review new commitments to expand this effort to other OTC derivatives, including equity derivatives.

These priorities for policy and supervision have the potential to strengthen our financial system and make it more robust to real systemic events. To be effective, however, we must continue to explore ways for supervisors and regulators to cooperate more closely together. The changes in market structure and financial innovation during the past decade, along with the increased global integration of capital markets, have increased opportunities for regulatory arbitrage. Policy initiatives that focus

only on the U.S. market or on a specific class of institutions will push the activity to other markets or other institutions, raising costs on the regulated intermediaries without reducing overall risk in the system. Balancing the imperative of a cooperative approach across markets and institutions with the need for a more agile response to the rapid pace of evolution in markets will be a continuing challenge.

Conclusion

The changes in the financial system since 1998 confront us with a mix of benefits and challenges. The larger size and scope of the core institutions, the greater opportunities for risk transfer and hedging provided by innovation in derivatives, the improvements in risk management, the larger role played by a much expanded number and more diverse mix of private fund managers seem likely to have improved the stability and resilience of the financial system across a broader range of circumstances.

The same factors that may have reduced the probability of future systemic events, however, may amplify the damage caused by and complicate the management of very severe financial shocks. The changes that have reduced the vulnerability of the system to smaller shocks may have increased the severity of the large ones.

Supervisors need to continue to focus attention on reducing the vulnerability of the market to these low probability, but extreme events, while preserving the benefits that have come with these changes in financial markets. The limitations of the conventional risk-management tools in assessing potential losses in the adverse tail of possible outcomes in today's financial system magnify the risk that individual institutions will operate with less of a cushion than might be desirable for the market as a whole.

As the structure of markets change, we need to continue to review whether the overall framework of supervision over the core banks and investment banks provides the right balance of efficiency and resilience for the system as a whole. The capital requirements and other constraints we place on the regulated institutions have played an important role in encouraging the transfer of risk to a broader range of institutions, including the leveraged private pools of capital. As the aggregate size and importance of those funds increases, distress among those institutions can have greater effects on overall market dynamics, potentially increasing risks to the regulated core. Over time, this will force us to consider how to adapt the design and scope of the supervisory framework to achieve the protection against systemic risk that is so important to economic growth and stability.

For the present, however, our hierarchy of priorities should focus on improving supervisory incentives to make counterparty discipline more effective and to strengthen the resilience of the core institutions to more adverse economic and financial conditions.

Thank you.