

## Timothy F Geithner: Implications of growth in credit derivatives for financial stability

Remarks by Mr Timothy F Geithner, President and Chief Executive Officer of the Federal Reserve Bank of New York, at the New York University Stern School of Business Third Credit Risk Conference, New York City, 16 May 2006.

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Thank you for giving me the opportunity to speak to you today.

We're in the midst of a period of rapid growth and innovation in the market for credit derivatives, and the developments in this market have important implications for broader financial market functioning and stability. A vital and efficient financial system such as ours is defined by its ability to identify new ways to allocate capital and share risk, but often the pace of innovation in the instruments themselves outstrips the pace of improvement in the risk management and control infrastructure. The credit derivatives market is no exception to this general observation. In my remarks today, I'll focus on some of the implications of these changes in the credit derivatives market for the stability of the overall financial system. As with any attempt to explore the broader implications of rapid growth in a new market, I'll say more about what we do not know than about what we do know. I'll also highlight the need for continued progress in addressing the challenges posed by the rapid growth in this market.

Credit derivatives have contributed to dramatic changes in the process of credit intermediation, and the benefits of these changes seem compelling. They have made possible substantial improvements in the way credit risk is managed and facilitated a broad distribution of risk outside the banking system. By spreading risk more widely, by making it easier to purchase and sell protection against credit risk and to actively trade credit risk, and by facilitating the participation of a large and very diverse pool of non-bank financial institutions in the business of credit, these changes probably improve the overall efficiency and resiliency of financial markets.

With the advent of credit derivatives, concentrations of credit risk are made easier to mitigate, and diversification made easier to achieve. Credit losses, whether from specific, individual defaults or the more widespread distress that accompanies economic recessions, will be diffused more broadly across institutions with different risk appetite and tolerance, and across geographic borders. Our experience since the introduction of these new instruments - a period that includes a major asset price shock and a global recession - seems to justify the essentially positive judgment we have about the likely benefits of ongoing growth in these markets.

Despite the benefits to financial resilience, the changes in the credit markets that are the subject of your conference have also provoked some concerns and unease, even among those on the frontier of innovation and the most active participants in these markets.

These concerns are based in part on uncertainty - a candid acknowledgment that there is a lot we do not yet know about how these instruments and the increased role of nonbank institutions in these markets will affect how the financial markets are likely to function in conditions of stress. Or to put it a bit differently: this concern comes from an awareness of the formidable complexity of measuring the scale of potential exposure in many of these instruments, and it comes from an awareness of the difficulty in anticipating how changes in credit market structure are likely to affect the behavior of financial market participants and market liquidity across a wide spectrum of financial and macroeconomic conditions.

The velocity of change itself would not be particularly interesting if the scale of exposures involved were still small, but this is not the case today. Credit derivatives, although still only 7 percent of estimated total notional over-the-counter (OTC) derivatives contracts, generate a significant fraction of total counterparty credit exposure. The direct counterparty credit exposure in OTC derivatives is quite large relative to the capital cushions of the major banks and investment banks, and relative to more traditional forms of credit exposure.

Further, these exposures merit more attention because they may be harder to measure than those in the more mature interest rate and exchange rate derivatives. The underlying economic exposures involved are harder to assess in part because of the complexity of the instruments, the embedded leverage in many products and the difficulty of estimating correlations across different exposures.

For these reasons, the risk individual dealers attribute to exposures involving some types of credit derivatives exhibit a very large variance, substantially larger than one would typically find in measurements of traditional credit exposures. That variance illustrates the magnitude of the uncertainty involved in capturing the direct exposure in these markets.

But perhaps the more difficult challenge is to capture the broader risks the institution might confront in conditions of a general deterioration in confidence in credit and an erosion in liquidity in these markets. This task, which is the province of stress testing and analysis of very low probability but extreme scenarios, is, of course, fundamentally difficult. The analytical challenge is magnified by the inherent difficulty in predicting how behavior changes in crisis, that is, how investors and counterparties would react to actual losses and the fear of future losses. This challenge is substantially more difficult in markets where there have been dramatic changes in the instruments involved, in the nature of the participants and in the structure of the markets. We tend to look more closely at things we can measure than those we cannot. We are drawn to approaches that offer the comfort of precision and tend to look past the wide band of uncertainty that surrounds those estimates.

Measuring these broader risks is harder today because the classic array of historical stress events drawn from the past 25 years of financial crises are probably even less valuable than they were as an illustration of how market dynamics might unfold today in response to similar changes in asset prices and credit losses.

Those past crises would likely cause less damage today, if they were to recur, because of the many changes in the structure of our financial system - namely, the greater dispersion of credit and market risk, the improvements in risk management, the size of the capital cushions, and the improvements in many parts of the payment and settlement infrastructure. But most crises come from the unanticipated.

Assessing a firm's exposure to risk in the tail of the distribution requires, among other things, an evaluation of the impact of the failure of a major counterparty and the impact that failure might have on other counterparties and on market prices. It requires, for the largest institutions, an understanding of the constraints the firm may face in its ability to adjust positions or hedge against further losses without amplifying the shock. And it requires anticipating potentially adverse effects on market liquidity, as other market participants react to actual and anticipated losses.

In the financial system we have today, with less risk concentrated in banks, the probability of systemic financial crises may be lower than in traditional bank-centered financial systems. And the increase in the diversity of nonbank financial institutions that hold risk may also serve as a stabilizing force in credit markets. But the greater relative importance of nonbank financial institutions also means that distress among these institutions has the potential to have a substantial impact on market behavior and liquidity. Understanding these relationships is an important part of the risk management challenge for banks, even in a world where derivatives have helped spread risk more broadly.

The innovations that have taken place in the credit derivatives market were driven to a significant degree by the losses experienced in past crises, but most of the growth in this market has occurred in relatively favorable overall economic and financial conditions. This wave of innovation in credit markets has occurred in an environment in which:

- the price of insurance against credit risk has fallen substantially as realized losses have declined and perceptions about corporate credit fundamentals have improved;
- volatility has declined in many different types of asset prices, as have expectations of future volatility
- the number of bank failures in the United States have fallen to levels not seen in a generation or more, and the price of protection against default by the largest financial institutions has fallen to levels that suggest a very low probability of failure; and
- overall liquidity in markets has been high.

Against the backdrop of an apparently healthy financial system, market participants report a substantial rise in transactions leverage, erosion in the use of loan covenants, more favorable financing terms for hedge fund counterparties, and especially a pressure to reduce initial margin against OTC derivatives exposure to hedge funds. But the concern is that this sustained period of very low credit losses and low volatility works to hold down measures of the underlying economic risk in these exposures. This combined with the range of factors I just discussed, raises the odds that market participants will be faced with negative surprises in the event of a more adverse macroeconomic

environment. And this could have more negative implications for market dynamics and liquidity as market participants react to those losses and attempt to reduce their exposure to future losses.

These concerns are not particularly new, and my sense is that they are widely shared among the people and institutions that are closest to these markets. They do not, in my view, challenge the overall judgment that these changes in the credit markets on balance are likely to make the financial system more resilient rather than more fragile. But they do suggest the need for greater caution by financial institutions in several important areas.

First, it is very important that the major dealers make the investments necessary to improve the operational infrastructure that underpins the credit derivatives and broader OTC derivatives market. Operational risk and infrastructure failures have played a prominent role in past financial crises, and the infrastructure weaknesses that have characterized the credit derivatives markets since their inception are an ongoing source of concern.

The major market participants, both the dealers and the traditional and non-traditional investors, are in the process of improving the infrastructure that supports these markets. The changes underway to clean up the backlog of unconfirmed trades and to automate the entire post-trade-processing environment will help reduce operational risk in the derivatives market and reduce some sources of uncertainty that could exacerbate a market shock. The efforts underway to reach agreement on an approach for settlement in events of default are important for addressing the risks inherent in a market where the value of derivatives substantially exceeded the value of the underlying instruments. We are encouraged by the progress made to date, and will continue to encourage further improvements.

Second, we believe that the major dealers, as well as the large commercial and investment banks, should take a cold, hard look at financing conditions and margin practice, particularly with respect to hedge fund counterparties and in OTC derivatives. The reports issued by the Counterparty Risk Management Policy Groups I and II both make the important observation that the financial system is likely to be more resilient under conditions of stress when counterparties set initial margins at levels that are likely to be sustainable in less benign conditions. When margin levels are set more conservatively, firms are likely to have more flexibility in responding to stress and are less likely to take action that might amplify the market shock and exacerbate the reduction in liquidity. When competitive pressure drives margins down, markets may be less resilient.

Third, we believe the major financial institutions need to continue to improve their capacity to measure their exposure to risk in a less benign market and economic environment. The discipline of stress testing and scenario analysis that is designed to measure tail risk is at the frontier of this challenge. Senior management and boards of directors need to understand the limitations and uncertainty that pervade the tools we use to assess these risks, to try to better understand the potential scale of losses the firm may face, and to carefully examine how well risk exposures reflect the overall risk appetite of the firm, and the size of the capital and liquidity cushion maintained in relation to those exposures.

Let me conclude by reiterating the fundamental view that the wave of innovation underway in credit derivatives offers substantial benefits to both the efficiency and stability of our financial system. The extent of these benefits will depend, in part, on the degree to which market participants can keep up with the pace of change in the market through continued investment in both risk management and in the processing infrastructure. We have been through a period of relatively favorable financial conditions, and the prospect for future stability will depend in part on the degree of care and conservatism market participants bring today to judgments about opportunity and risk management.

Thank you.