

Testimony of
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“Risk Management and Its Implications for Systemic Risk”

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

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

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

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

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

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

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

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

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

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

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

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

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

3. What lessons have been learned by risk managers and regulators?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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