

## **1. Introduction**

- a) At the outset, I should note that the views I am expressing today are my own and are not necessarily the official views of the Federal Reserve Board.
- b) The financial crisis has underscored the importance of understanding and mitigating potential sources of systemic risk.
- c) One obvious source of systemic risk is the “interconnectedness” of financial institutions.
- d) Interconnectedness means different things to different people, but clearly one important dimension arises from the counterparty risks associated with derivatives and repos and other securities financing transactions, which grew enormously in the years leading up to the crisis.
- e) Bank supervisors, central banks, and market participants for many years have been seeking to mitigate the systemic risks associated with the counterparty exposures arising from derivatives and repos, both by fostering more effective counterparty risk management by market participants (Counterparty Risk management Policy Group I, II, and III and relevant and related supervisory guidance) and by strengthening the clearance and settlement infrastructure for such transactions.
- f) In some respects those efforts were successful. In particular, despite the collapse of many hedge funds during the crisis, banks’ counterparty losses from hedge funds have been very modest. And improvements from 2005 on in the settlement practices with respect to credit derivatives prevented the bad situation following the failure of Lehman Brothers from being far, far worse.
- g) But clearly further improvements are needed. Today I will focus on global efforts to expand central counterparty clearing of OTC derivatives and efforts in the US to strengthen the infrastructure of the tri-party repo markets.
- h) In each case the financial crisis has significantly altered our perceptions of the risks in the existing arrangements and of what needs to be done to make the market infrastructure stronger.

## **2. CCP Clearing of OTC Derivatives**

- a) The potential benefits and challenges of CCP clearing of OTC derivatives had been studied and debated for at least 10 years before the crisis. (A 1998 study by the G-10 Central Banks’ Committee on Payment and Settlement Systems (CPSS) was published by the BIS just as LTCM was collapsing and seemed to receive little attention from market participants.)
- b) Clearing was seen mainly as a way to mitigate counterparty risks between dealers. The principal benefits were seen to be multilateral netting of credit exposures on cleared contracts and centralized risk-management of the netted exposures. But there were concerns about the effects of clearing on non-cleared contracts, which no longer could be netted bilaterally against the cleared contracts. More important, it was acknowledged that clearing concentrated risks and responsibilities for risk management. To be sure, the track record of CCPs for exchange-traded derivatives was generally excellent. But it was not clear that the risk controls used by CCPs for exchange-traded derivatives would be equally effective when applied to OTC derivatives, which generally are less liquid and more difficult to value accurately than exchange-traded derivatives.

- c) When the CPSS again considered the merits of CCP clearing in 2006-07 the assessment was more positive. In large measure this reflected the fact that since 1999 LCH.Clearnet's SwapClear service had been successfully clearing an ever-growing share of global inter-dealer swaps. But concerns were expressed that SwapClear's default management procedures had not yet been tested by an actual default.
- d) Well, I guess the financial crisis was good for something. The failure of Lehman Brothers provided a robust test and SwapClear passed the test, closing out Lehman's \$9 trillion notional value of interest rate swaps without incurring any losses. I believe that in large measure SwapClear's success reflected its portfolio-based approach to neutralizing and auctioning off Lehman's positions, which avoided the death by a thousand cuts that seems unavoidable if thousands of contracts are valued at prevailing bids and offers in an environment in which bid-asked spreads are unusually wide.
- e) The crisis has also underscored a completely different way in which CCP clearing has the potential to mitigate systemic risks in the OTC derivatives markets. We learned that, absent central clearing, derivatives dealers can be quite vulnerable to runs by their non-dealer clients. OTC derivatives prime brokerage had come largely to be dominated by the US investment banks. As the financial condition of those firms weakened and the viability of the investment bank business model was called into question, those firms came under considerable liquidity pressures, as their clients novated their OTC derivatives contracts and transferred their margins to dealers that were perceived to be stronger. This placed liquidity pressures on the investment banks because they often rehypothecated their clients' margin assets to meet their own funding needs. When other dealers refused to accept novations, the reputations of the troubled dealers were damaged and the liquidity pressures were magnified.
- f) If those client positions were cleared through a CCP and (importantly) if the CCP required (and applicable law supported) segregation and portability of client positions, the dealers would no longer be nearly so susceptible to client runs. Clients would take comfort in the fact that, even if a dealer intermediary failed, ordinarily the CCP could transfer its clients' positions and margins to another dealer.
- g) What is true of derivatives is true of financial intermediation generally. Segregation of client assets is not only important for protecting the clients, it is important for protecting the intermediaries and for protecting the financial system. To be sure, stronger client asset protection will mean fewer opportunities for intermediaries to use client assets to fund their proprietary positions, but it will also mean less susceptibility to runs by clients. If anyone doubts the potential for such runs, they should talk to former employees of Bear or Lehman.

### 3. US Tri-Party Repo Markets

- a) From 2001 through 2007 I spent a great deal of time trying to strengthen the infrastructure for the US tri-party repo markets. It is fair to say that I (and the many others involved) did not accomplish a great deal. But the thorough education regarding the tri-party repo markets that I and other Federal Reserve staffers received in the course of those efforts proved very valuable when time came to develop emergency measures to stabilize the tri-party markets.
- b) Our primary focus prior to the crisis was on implementing contingency plans to address a potential loss of confidence in one of the two government securities clearing banks. We were concerned because each of the clearing banks was facilitating about half a trillion dollars of repos for their dealer clients, which included

the largest "primary dealers" in US government securities. If the highly risk-averse providers of tri-party repo financing to the dealers (notably money funds and agent banks reinvesting cash collateral for securities lenders) lost confidence in a clearing bank all of the clearing bank's dealer clients would be cut off from tri-party repo financing.

- c) While we were floundering about, the tri-party repo markets were growing rapidly and changing in character. From a little less than \$1 trillion when we started they grew to around \$2-3/4 trillion at their peak in 2008. (They have since declined by about \$1 trillion.) Also, the types of collateral financed expanded, from US Treasuries, to GSE debt, to GSE MBS, to a wide variety of less liquid types of corporate debt and ABS. Individual dealers were financing as much as \$300-400 billion of collateral, much of it on an overnight basis.
- d) While we were right to be worried about the impact of a loss of confidence in a clearing bank, we should also have been very worried about a loss of confidence in a major dealer.
- e) As Bear Stearns imploded, weaknesses in the tri-party market infrastructure exacerbated liquidity pressures on Bear and forced us to take emergency measures to protect the broad tri-party market.
- f) Bear and the other investment banks thought that providers of repo financing would not create a run by refusing to roll over their secured financing transactions. At worst, they would impose higher haircuts. But some providers did run. And when they began to run, a weakness in the US infrastructure amplified the effects. Ordinarily early each morning a dealer's clearing bank unwinds all of the previous day's repos, returning the cash to the funds providers and the securities to the dealer. But it is not obligated to do so. Once the clearing bank unwinds a dealer's repos, it runs the risk that the funds providers will not rollover their repos, which would force the clearing bank to provide the financing. If the clearing bank sees a significant risk of a failure to roll, it may refuse to unwind, or it may demand substantial additional collateral from the dealer before it agrees to do so. During the crisis, as dealers lost repo funding, the clearing banks in some instances demanded substantially more collateral from the dealers, which amplified the liquidity pressures they were experiencing.
- g) Had a clearing bank refused to unwind a dealer's repos, the providers of repo financing would have found securities in their accounts rather than cash. The providers would then have been obliged to liquidate the collateral. In many cases they were totally unprepared to do so. Even if they had been prepared, almost surely they would have suffered losses. Margins in the tri-party market were quite modest. They could well have proven adequate if a single funds provider had been liquidating only the modest amount of collateral it had financed. But if dozens of funds providers had attempted to liquidate hundreds of billions of dollars of collateral, the markets surely would have moved against them, resulting in losses. The highly risk-averse funds providers seem to have viewed the transactions as essentially riskless. The Federal Reserve feared that, if they lost money on one dealer's repos, they would pull back from financing all of Wall Street – with catastrophic results. To prevent a run on Wall Street, the Fed utilized its emergency lending authority to facilitate the acquisition of Bear by JP Morgan Chase. It then created and later expanded the Primary Dealer Credit Facility, which essentially made the Fed the tri-party repo provider of last resort and thereby gave the clearing banks the confidence they needed to unwind the repos of even severely troubled dealers.
- h) When the crisis eased the Fed wound down its liquidity facilities, as required by law. With that in prospect the Fed created a private-sector working group that recently produced a report recommending steps to strengthen the tri-party market

infrastructure. (In fact, because we are meeting at a UBS facility, I would be remiss if I didn't mention that the working group was chaired by Darryll Hendricks, a UBS employee.) In short, the report proposes to reduce and ultimately "practically eliminate" the daily unwind of repos by the clearing banks. And it proposes to make far more transparent the scale of tri-party repo activity and the size of margin requirements. Hopefully, once funds providers understand the huge amounts of securities that dealers are financing, they will reconsider and increase their margin requirements. As a complementary measure, bank supervisors will be introducing formal liquidity requirements that will force dealers to reduce their reliance on very short-term repos to finance long-term assets, especially relatively illiquid assets.

That concludes my prepared remarks. I look forward to discussing these and other issues relating to the crisis and financial regulatory reform efforts.