Simon M Potter: Some observations and lessons from the crisis[1]

Remarks by Mr Simon M Potter, Executive Vice President of the Research and Statistics Group of the Federal Reserve Bank of New York, at the Third Annual Connecticut Bank and Trust Company Economic Outlook Breakfast, Hartford, Connecticut, 7 June 2010.

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Introduction

Among the many important lessons coming out of the global financial crisis that started in the summer of 2007, possibly the most important revolve around how complex the global financial system is, how quickly confidence in that system can deteriorate, and how difficult it is to come up with simple and robust solutions to stabilize the system in real time. My remarks today will break the progression of this crisis into four distinct phases. In doing so, my intention is to highlight some of the actions taken by the Federal Reserve to manage the crisis, and to offer what at least in retrospect seem to be clear lessons on how to promote financial stability outside the heat of a crisis.

The four distinct phases of the recent crisis were as follows:

- The initial disruption in money markets in the summer of 2007 – I will call this the "what are these securities worth?" phase;
- The abrupt takeover of Bears Stearns by JPMorgan Chase – I will call this the "unusual and exigent" phase;
- The 30 days following the bankruptcy of Lehman Brothers – I will call this the "panic" phase; and
- The period from mid-November 2008 to early May 2009 – I will call this the "viability of large U.S. banking organizations" phase.

One consistent theme that emerges across all these phases is that central banks must have the ability to respond quickly and flexibly in a crisis situation. This ability is crucial in preventing the emergence of an adverse feedback loop between instability in the financial system and weakness in the real economy. Another theme that emerged as these phases played out, however, was that an ability to move with speed and flexibility comes with the challenge of ensuring that accountability and transparency keep pace with the actions being taken. The need for accountability and transparency is especially true when central bank actions are being used to innovatively fill holes in a regulatory and legal framework that has not kept pace with the evolution of the financial system.

Phase 1: What are these securities worth?

On August 9, 2007, the large French bank BNP Paribas announced that it had suspended activity in three of its funds so it could more precisely assess their value. The problem was stated as follows:

> *"The complete **evaporation of liquidity** in certain market segments of the U.S. securitization market has made it impossible to value certain assets fairly regardless of their quality or credit rating."*

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[1] I would like to thank my colleagues Meg McConnell, Jamie McAndrews and Brian Peters for numerous useful comments and suggestions on these remarks.

Central banks immediately responded to the evaporation of liquidity in the standard manner. For example, the Federal Reserve issued a statement on August 10 indicating it was providing liquidity for the orderly functioning of markets, and in that statement the Federal Reserve emphasized that "*As always, the discount window is available as a source of funding.*" One week later it reinforced this statement with a 50 basis point cut in the discount rate and the addition of 30-day term loan to complement the standard overnight discount window loan.

At that time, the discount windows of Federal Reserve Banks were only open to depository institutions. Standard monetary economic theory and previous experience were consistent with the notion that depository institutions could act as intermediaries to pass liquidity through to the rest of the financial system. Indeed, in many earlier episodes the mere fact that this backstop liquidity was present had been sufficient to calm financial markets.

Circumstances proved very different in this episode. For one, the rise of the shadow banking system meant that a preponderance of financial intermediation in the United States was being performed by non-depository institutions that funded themselves in wholesale rather than retail markets. Further, traditional discount window loans have always been vulnerable to stigma – that is, if a bank borrows from the central bank it runs the risk that markets and counterparties may infer that it is closer to insolvency than was previously thought.

The potential for stigma to damage the effectiveness of this crucial backstop facility explains why the identity of discount window borrowers is not disclosed by the Federal Reserve. Indeed, we saw early in this crisis that many depository institutions proved unwilling to take the risk of possible stigma, the result of which was an increasingly severe impairment to the flow of liquidity to the rest of the financial system. In late August 2007, a new facility was designed to help overcome stigma through the use of an auction mechanism. As the market calmed in September to late October, this facility was shelved but was ultimately introduced on December 12, 2007, as the Term Auction Facility in a coordinated announcement with other central banks.

This phase has some obvious lessons for financial stability.

- Financial products that are new and complex should be treated with caution. Regulators, credit rating agencies and market participants all have limited ability to evaluate the properties of such complex products at their inception. For example, the fact that the credit rating agencies bestowed their highest ratings on certain securities prior to the crisis meant that many investors assumed that the securities were "informationally insensitive." What was subsequently learned, however, was that instead of being robust to economic developments, structure of the securities had merely served to concentrate the systemic "tail risk" in the securities.
- New financial products are often associated with the extension of primary credit to previously underserved sectors of the economy. This extension of credit to the previously underserved often produces abuses or outright fraud, much of which can be masked by the newness and complexity of the products.

In many respects these are old lessons that we should have learned already from what occurred in the run-up to previous episodes of financial crisis. However, the remarkable stability of the U.S. economy from the mid-1980s to 2007 unfortunately served to produce what amounted to a collective amnesia with regard to these earlier learned lessons. For example, most macroeconomists had become convinced that the widening and deepening of the financial system over the previous twenty years driven by deregulation, and given additional impetus by the return to low and stable inflation, was an important source for this economic stability.

This is not to say that there was no one pointing out the risks of the low risk premiums and the rapid growth of structured investment products, but many economists, analysts and commentators had reached the blissful state of mind that it was different this time. In this

context, it is useful to recall an unease articulated by former Federal Reserve Board Chairman Alan Greenspan in 1996[2]:

> *"Clearly, sustained low inflation implies less uncertainty about the future, and lower risk premiums imply higher prices of stocks and other earning assets…. But how do we know when irrational exuberance has unduly escalated asset values...?"*

This uncertainty about the link between underlying fundamentals and current asset valuations is crucial to interpreting this initial phase of the crisis. For example, one relatively benign interpretation of what was playing out was that the financial system was experiencing a liquidity problem driven by a maturity mismatch in the shadow banking system. The liquidity problem was unusually severe because of the collapse of the shadow banking sector and the resulting pressures that collapse placed on the balance sheets and liquidity positions of the traditional bank sector. Nonetheless, the situation was fundamentally viewed as a liquidity problem rather than a solvency problem, meaning that any potential credit losses were likely to be small and easily absorbed.

An alternative darker view was that the global financial system was overexposed to land prices in the United States, through the home sale and mortgage refinancing boom that had taken place in the last four years. This darker view was given less credence, in part because the magnitude of the fall in U.S. nominal house prices necessary to produce a situation where the losses could not be easily absorbed was viewed by many as implausibly large. At that time, the conventional view was that by standard regulatory and accounting measures, most U.S. financial institutions had more than ample capital against the risks they faced. Furthermore, institutions were raising new capital to fill the reduction in accounting capital being produced by the write-downs associated with subprime related assets.

Phase 2: Unusual and exigent

On Tuesday March 11, 2008, the Federal Reserve announced an expansion of its standard securities lending program for primary dealers[3] to a facility that accepted a wider range of collateral and lent at a term longer than overnight. This new facility, known as the Term Securities Lending Facility (TSLF), was designed to help ease the ongoing erosion of liquidity conditions in funding markets that was occurring despite the two large cuts in the fed funds target in January 2008.

Two days later after the Federal Reserve announced the TSLF, Bear Stearns Co., the fifth largest investment bank in the U.S., ran out of cash to meet its obligations for the next day. Over the ensuing three days, the Federal Reserve, working with the Securities and Exchange Commission and U.S. Treasury, facilitated the takeover of Bear Stearns by JPMorgan Chase. The Federal Reserve used a lender-of-last-resort authority it had been granted in the 1930s under Section 13(3) of the Federal Reserve Act to facilitate the transaction. Further, on that Sunday, March 16, the Federal Reserve announced the introduction of the Primary Dealer Credit Facility (PDCF), an emergency extension of the standard discount window facilities to primary dealers.

Finally two days later on March 18, the Federal Open Market Committee (FOMC) cut the fed funds target by 75 basis points, bringing the total decrease in the target since the start of the crisis to 300 basis points. At that time, many saw this point as the peak of the crisis and assumed that the weaknesses in the financial and regulatory system would be fixed as the crisis subsided.

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[2] The Challenge of Central Banking in a Democratic Society.

[3] Primary dealers are broker-dealers who trade in government securities directly with the Federal Reserve.

At this point, it is worth spending a moment to explain in a little more detail the basic elements of Section 13(3) of the Federal Reserve Act, a provision that had only previously been used for relatively small loans in the 1930s.[4] Section 13(3) allows a Federal Reserve Bank to lend to any individual, partnership or corporation under the authority of a super-majority of the Federal Reserve Board in unusual and exigent circumstances, if adequate credit accommodations are not available from other banking institutions and if the Federal Reserve Bank is ***secured to its satisfaction***. This last condition effectively represents the dividing line between lender-of-last-resort actions on one hand and capital injections or other forms of unsecured lending on the other hand, a critically important dividing line the Federal Reserve carefully respected in all its actions over the course of the crisis.

One lesson that emerges from this and later phases of the crisis is that while the Federal Reserve's authority and accountability for the 13(3) actions taken in March 2008 and throughout the crisis were well established under the Federal Reserve Act, what was crucially lacking was a public transparency regime that would allow the public to immediately track and understand the details of the extraordinary action taken. The complexity of creating a robust, responsible and safe transparency regime in the midst of rapid change and extreme market fragility notwithstanding, the fact that the public transparency of the central bank might lag the actions being taken by the central bank creates its own set of risks. In fact, the importance of transparency keeping pace with actions was actually the main theme of Greenspan's 1996 speech, where, just as an aside, he had coined the phrase irrational exuberance. One paragraph in particular seems particularly prescient:

> *"If we are to maintain the confidence of the American people, it is vitally important that, excepting the certain areas where the premature release of information could frustrate our legislated mission, the Fed must be as transparent as any agency of government. It cannot be acceptable in a democratic society that a group of unelected individuals are vested with important responsibilities, without being open to full public scrutiny and accountability."*

As I previously noted, establishing an appropriate and responsible transparency regime for emergency lending in the midst of a severe crisis is an especially challenging task. With sufficient time to assess the maximum amount of information that could be released without frustrating its mission, the Federal Reserve now discloses extremely detailed information to the public about all of its facilities.[5] However, the fact that such information was not instantly available gave rise to public criticism.

Another lesson that emerged strongly in this phase of the crisis was the need for adding to the regulatory toolkit a robust and effective method for resolving complex financial institutions without imperiling the safety of the broader system. In the case of Bear Stearns, the presence of a willing acquirer presented the opportunity for an assisted transaction that effectively amounted to an ad hoc resolution mechanism for the failing firm. One sense in which this solution was ad hoc was that policymakers could not be sure that a willing acquirer would be found in the case of distress in the future, but another, perhaps more important sense is that the rules of the game were not clearly established in advance.

In this context, it is worth noting that the United States had led the world with its Federal Deposit Insurance Corporation (FDIC) Improvement Act in 1991 in establishing a state-of-the-art resolution regime for depository institutions to avoid the panics and runs associated with the risk of insolvency of a financial institution, while at the same time protecting the taxpayers. However, this regime did not address how to efficiently resolve holding companies

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[4] In the 1930s, Congress had passed legislation giving the Federal Reserve additional flexibility in its lender-of-last-resort powers but these were removed with the passage of the small business investment act in 1958.

[5] Most of this information can be found at the Board of Governors of the Federal Reserve System's Credit and Liquidity Programs and the Balance Sheet.

that included a depository institution, investment banks or other financial institutions that were tightly and very intricately woven into the global financial system.

Perhaps because many thought that March 2008 was the height of the crisis, the overwhelming importance of this lesson coming out of the Bear Stearns episode did not translate into this gap in our regulatory framework being addressed with sufficient urgency. As I will discuss momentarily, the gap re-emerged as a main accelerant of the crisis with the collapse of Lehman Brothers in September of that same year. Although, it is worth acknowledging in this context that Congress did approve legislation setting up a special contingent resolution process for the government-sponsored enterprises (GSEs) in the summer of 2008.

A final lesson from this phase of the crisis was the critical need for policymakers to question the validity of the assumptions that are often taken for granted in assessing the risks to financial stability. For example, most macroeconomic models do not have an explicit banking sector. Thus, in simulations of the effects of house price declines, the main channel of propagation is an indirect one through a wealth effect on consumption. As house prices continued to decline at unprecedented rates, many analysts started to reconsider the adequacy of what had previously been considered ample capital in the U.S. banking system, and thus the extent to which this capital would be a firebreak against a significantly sharper contraction. If this firebreak was insufficient or perceived to be insufficient, then these analysts correctly anticipated that a vicious adverse feedback loop might take hold: declines in economic activity would make financial institutions reluctant to lend in order to conserve capital for possible credit losses, the decline in lending would further reduce economic activity and so on. This type of nonlinearity had not been part of pre-crisis evaluation of the risks of large house price declines, but by the spring of 2008, it was becoming a central concern.

Phase 3: Panic

The bankruptcy of Lehman Brothers on September 15, 2008, precipitated a run on the global financial system of a previously unimaginable scale. The Federal Reserve was immediately confronted with a huge unanticipated call on its lender-of-last-resort power as a result of a substantial liquidity problem at one of world's largest insurance companies, American International Group (AIG). The Federal Reserve's decision on September 16 to lend to AIG was a classic lender-of-last-resort action of exactly the type envisaged by the statutory power given in 13(3). However, given the speed of developments that week, there has been considerable confusion and misperceptions over the validity of the initial decision to lend to AIG.[6]

It was unknown on September 16 just how quickly the panic would spread and how harmful it would be to the real economy. By the next evening it was already obvious that the panic had spread to prime money market mutual funds with devastating effects. These funds provided short-term financing to numerous firms and institutions through the commercial paper market. A myriad of other breakdowns were occurring as trust vanished from the global financial system. Against this backdrop, the request for the $700 billion Troubled Asset Relief Program (TARP) appropriation was made the next day.

In the short time it took Congress to pass the TARP appropriation, the panic continued to spread; on September 25, Washington Mutual, the sixth largest depository institution, was resolved by the FDIC and just days later Wachovia, the fourth largest bank holding company

[6] The recent testimony by Thomas Baxter and Sarah Dahlgren provides a detailed explanation: Joint written testimony of Thomas C. Baxter and Sarah Dahlgren: The Federal Reserve Bank of New York's Involvement with AIG.

encountered severe funding difficulties and was eventually taken over by Wells Fargo. As with the need to place the two largest GSEs into conservatorship, it became apparent that much of the supposed ample capital in the U.S. financial system was not an effective bulwark against insolvency or the perception of possible insolvency. The latter possibility, whether true or not at its inception, can ultimately become a self-fulfilling prophesy if it results in a run on the financial system.

There are three broad forms of policy responses available to arrest the self-fulfilling prophesy dynamic that can take hold during a run on the financial system:

- Lender-of-last-resort actions to assist the economy in adjusting to the severe funding strains produced by the run,
- Guarantees issued to reassure existing liability holders, and
- Capital injections to strengthen the actual, and therefore perceived, solvency of financial institutions.

By early October 2008, it was apparent that a substantial escalation on all three fronts was required to give the financial system what was essentially a time-out in order to halt the self-fulfilling prophesy dynamics. It is useful to consider the analogy of the time-outs that parents give to their children when they are misbehaving. While the analogy is not appropriate in terms of the punishment aspect of time-outs for kids, there are a number of similar problems in establishment of a robust time-out strategy.

First, how to define the boundaries associated with the time-out. In the case of arresting a run on the financial system, who does and who does not have access to the lender-of-last-resort, guarantees and capital injections? Next, can the parent/government credibly announce and then efficiently operate the time-out? Finally, as all parents are acutely aware, how does one build an appropriate exit strategy from the time-out?

In the second week of October there was no room for error on any of these strategic dimensions but instead of one unruly child and a parent playing out an enduring battle, a diverse set of policymakers were confronting a wide range of financial institutions with no experience with time-outs on either side.[7] Further, full participation by systemically important firms was crucial due to the inter-connectedness of the financial system.

The solution for the efficient operation of the time-out was "on the fly" to ***combine*** the power of the FDIC to provide guarantees to liability holders of banks under the systemic risk exemption embedded in FDIC Improvement Act with two other authorities. The first was the U.S. Treasury's new ability to provide capital from the new TARP funds, and the second was the Federal Reserve's authority in unusual and exigent circumstances to flood the financial system with as much liquidity as it needed. In the latter case the appropriate measure of the escalation is not the actual amount of liquidity that was drawn from the Federal Reserve but the commitment to supply whatever was needed.[8]

This commitment was captured succinctly in the minutes of the October 2008 FOMC meeting:

> *"...the Committee agreed that it would take whatever steps were necessary to support the recovery of the economy."*

Of course parents usually have the capacity to perform on a time-out if the initial announcement directs the child in the appropriate direction. In this case, the initial

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[7] The time-out of an extended bank holiday used by U.S. President Franklin D. Roosevelt in 1933 was not available.

[8] Around $1 trillion was drawn but the total capacity of the existing and new facilities offered by the Federal Reserve was closer to $4 trillion.

announcement had to direct thousands of institutions in the appropriate direction on equal terms, including a majority that had not been misbehaving in the run-up to the crisis. In particular, stronger institutions might view their agreement to use the guarantees and issue equity to the U.S. Treasury as stigmatizing and make them more vulnerable to runs. The solution was to obtain agreement from nine systemically important institutions to participate at the start of the time-out on the same terms available to thousands of other eligible financial institutions.

The time-out announced on October 14 was a critical success in terms of stopping the run on the global financial system, but it could not and did not address all the aspects of the crisis. The global propagation of the financial shock had already triggered an economic slowdown at least as abrupt as any during the Great Depression period. The underlying question was now how strong the adverse feedback loop would be between the rapidly deteriorating real economy and the condition of the banking sector.

One clear lesson from this phase was the need for formal coordination among the diverse authorities in the U.S. in establishing and maintaining financial stability. Another lesson that emerged was that some forms of regulatory and accounting capital were very weak defenses against the fear of insolvency. Both lessons are informing the ongoing work of regulatory reform and of enhancing the resiliency of the financial system through stronger capital and liquidity requirements.

Phase 4: Viability of large U.S. banking organizations

The next phase of the crisis started in mid-November 2008, as both the stock market and credit default swaps suggested increasing doubts on the part of market participants that large U.S. financial institutions had sufficient capital to withstand the losses that might arise from further deterioration in the real economy. For example, on the weekend before Thanksgiving, the FDIC, Federal Reserve and U.S. Treasury, in response to intense market pressures, came up with a support package for Citigroup, followed by a similar package of support for Bank of America in January 2009. From the public's perspective, these interventions were becoming harder to understand, and from a policymaker's perspective, there seemed no end in sight. In the market's eyes, many banking organizations had become "uninvestable." Thus, as part of the Financial Stability Plan of the new administration, a comprehensive and forward-looking assessment of the capital needs of 19 bank holding companies with more than $100 billion in assets was set in motion.

Meanwhile, the Federal Reserve was reacting with great speed to the deepening recession by cutting the fed funds target to its lower bound of close to zero, starting large-scale purchases of agency debt, mortgage-backed securities and treasuries, and introducing a facility to re-invigorate the securitization market.

It is important to understand that the objective of the Supervisory Capital Assessment Program (SCAP) – the so-called bank stress tests – was not to assess the solvency of the 19 companies. Instead the objective was to assess their capital needs under a deeper and longer recession than was the consensus in early 2009, and then require them to meet these capital needs in the very near term, before the adverse scenario developed. One important rationale for the program was that the presence of the additional capital would make the adverse scenario less likely. The credibility of this strategy was dependent on the availability of the U.S. Treasury's Capital Assistance Program to provide capital if the private market was unable to do so. Moreover, a brave decision was made to be transparent about the procedures the supervisors were using in their assessment and to pre-commit to disclose detailed results. In addition, the main measure of capital needs would be in terms of common equity rather than the preferred equity that was used in the U.S. Treasury's Capital Purchase Program.

The assessment process took just under three months to complete. It involved many innovations in the supervisory process that will continue to influence the approach to the supervision of large complex financial institutions in the future. The results of the assessment were striking. Under the more adverse scenario of a longer and deeper recession, the two-year loss rates on average across the 19 banks were projected to be as high as experienced during the Great Depression. Further, this average hid an incredible amount of heterogeneity across both banks and asset classes. Bank's ability to absorb such projected losses would depend on their ability to generate revenue in the future as well as on their current capital cushions. The assessment identified a net capital need of $185 billion based on the fourth quarter 2008 capital positions of the firms. After taking account of capital-raising actions already underway as well as the revenue generated in first quarter 2009, the net need for new capital was $75 billion spread across 10 of the 19 institutions. These capital needs were for the highest quality type – common equity.

Perhaps the most striking outcome of the process was that a detailed publication of the results for individual banks proved to be confidence enhancing and served to help make banks "investable" again. Thus, a key lesson from the SCAP process was that, under certain circumstances, transparency about the methods used and a willingness to commit to disclosure of the results by public authorities can be a calming force.

Finally, it is worth noting that while the financial crisis has taught us that financial institutions need high-quality common equity capital to absorb losses, that transparency and disclosure about their potential exposures are essential, it has not given any definitive indication of how much larger the capital buffers of financial institutions need to be to assuage worries about future tail events that can drive panics.

Conclusions

Looking back over the run-up to the financial crisis and its initial stages, it is obvious now with the benefit of hindsight that short-term tactical missteps and long-term strategic miscalculations were made by both the private and public sectors. Many of the long-term strategic miscalculations were related to allowing perverse incentives to build within the financial system and allowing significant gaps in the regulatory framework to persist. The financial reform proposals currently being considered by Congress are appropriately trying to ensure that such perverse incentives are removed from the financial system and exploring ways to endow regulators with an efficient resolution mechanism for systemic financial institutions. Some of the short-term tactical missteps were the failure of banking regulators to force high quality capital raises early enough in the crisis, and the failure of the private sector to engage in adequate liquidity contingency planning and the failure of regulators to recognize the vulnerability of the system to erosion in liquidity conditions.

As the crisis intensified to unparalleled heights and without an efficient resolution process in place, the ability of the Federal Reserve, and then other governmental agencies after the TARP appropriation, to act with speed and flexibility was vital to stabilizing the system.

However, hindsight is much less definitive on some of the lessons about the underlying stability of the financial system. In Alan Greenspan's thoughtful review of the crisis he summarized the issue this way:[9]

> *"The aftermath of the Lehman crisis traced out a startlingly larger negative tail than most anybody had earlier imagined. I assume, with hope more than knowledge, that this was indeed the extreme of possible financial crisis that could be experienced in a market economy."*

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[9] The Crisis, by Alan Greenspan, March 9, 2010 Draft.

This motivates a final lesson coming out of this crisis, which is that policy making, whether it is fiscal, monetary, supervisory or other, must always strive to be as forward-looking as possible, and to be robust to the possibility that we will experience situations tomorrow that are unimaginable today.