

CRS Report for Congress

Averting Financial Crisis

March 10, 2008

Mark Jickling
Specialist in Financial Economics
Government and Finance Division



**Prepared for Members and
Committees of Congress**

Averting Financial Crisis

Summary

There is no precise definition of “financial crisis,” but a common view is that disruptions in financial markets rise to the level of a crisis when the flow of credit to households and businesses is constrained and the real economy of goods and services is adversely affected. Since mid-2007, central bankers — including the Federal Reserve — have labored to keep the downturn in U.S. subprime housing from developing into such a crisis.

While subprime problems were widely anticipated, the subsequent spread of turmoil into many seemingly unrelated parts of the global financial system was not. Many losses occurring in diverse firms and markets — often quite severe — have features in common: the use of complex, hard-to-value financial instruments; large speculative positions underwritten by borrowed funds, or leverage; and the use of off-the-books entities to remove risky trading activities from the balance sheets of major financial institutions.

It is not yet clear whether financial market problems will significantly slow the economy: many believe that the current episode is simply the downside of a normal credit cycle, that is, a natural corrective to several years of unusually easy credit conditions. On the other hand, some analysts identify market dynamics that may amplify the effects of financial shocks and have the potential to generate self-reinforcing, downward financial and economic spirals. The Federal Reserve is using the tools at its disposal to avert such an outcome: it has lowered short-term interest rates dramatically and injected billions of dollars into the banking system to support market liquidity and keep credit flowing. The duration of the current situation, however, is in contrast to financial shocks of recent decades — stock market crashes, bond market disruptions, the 9/11 attacks — when the central bank was able to contain market problems quickly with little or no interruption of U.S. economic growth.

Depending on how soon normal market conditions are restored, and at what cost, policy makers may consider whether regulators have access to adequate information about market conditions, and whether currently unregulated market participants should be subjected to disclosure and reporting requirements. In addition, the social costs of failed financial speculation may be judged great enough to warrant new restrictions designed to lower the incidence of losses that have system-wide impacts or to put the markets and the economy in a better position to weather such shocks.

This report supplements CRS Report RL34182, *Financial Crisis? The Liquidity Crunch of August 2007*, by Darryl Getter et al., which describes in greater detail the channels through which subprime problems cascaded through the financial system. This report focuses on the efforts of regulators to reduce stress to the markets and will be updated as developments warrant.

Contents

Introduction	1
The Underlying Financial Problems	2
SIVs	3
What Makes a Financial Crisis?	5
Government Interventions	8
Open Market Operations and Monetary Policy	8
The Discount Window	8
Term Auction Facility (TAF)	9
Treasury's "Super-SIV" Proposal	10
Provision of New Capital to Financial Institutions	11
Policy Issues: Are Regulators' Tools Adequate?	12
Information	12
Speculation	13

List of Figures

Figure 1. Figure 1. Commercial and Investment Bank Stock Indexes, January 2007 - March 2008	2
Figure 2. Structured Investment Vehicle Cash Flows	3
Figure 3. The Leverage Cycle	6

Averting Financial Crisis

Introduction

In mid-2007, mounting losses in subprime mortgage markets triggered disturbances throughout the international financial system. The scale of the turmoil has been surprising, given the small size of the U.S. subprime market in relation to global financial markets. Not only is subprime a comparatively small market, its problems were known well in advance: when the rapid rise in housing prices stopped in 2006, it was inevitable that many subprime borrowers would have difficulty making payments, particularly those whose adjustable mortgage rates were scheduled to reset in 2007 and 2008. A Swiss bank CEO has called subprime loan losses “probably the longest anticipated crisis we have ever seen.”¹

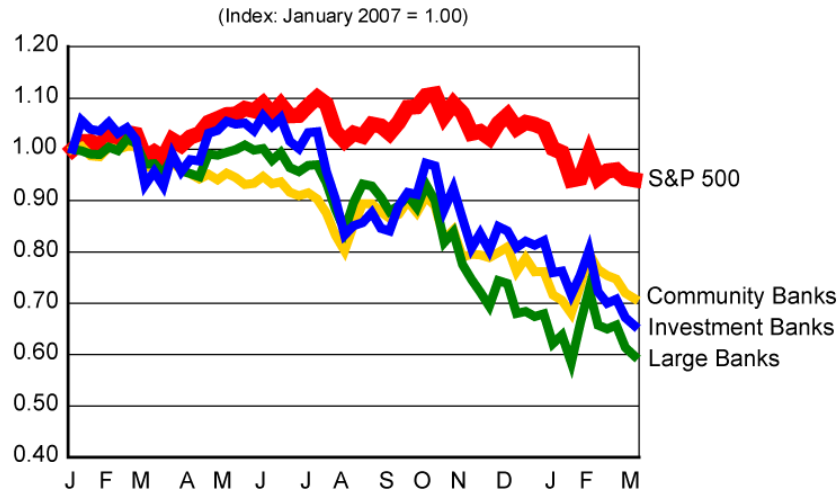
Nevertheless, a wide range of financial institutions have been affected adversely, many of which had no direct exposure to the subprime mortgage market. Almost weekly since July 2007, the financial press has highlighted a new trouble spot, such as hedge funds, small European banks, issuers of commercial paper, conduits for securitization of loans, credit swaps, jumbo mortgages, money market funds, consumer lenders, bond insurers, state and local government investment funds, and so on. The links between many of these markets and subprime mortgages are tenuous, but they are widely viewed as symptoms of a common underlying problem.

The stock market has certainly perceived systemic weakness across financial sectors. As **Figure 1** below indicates, share prices for large banks, small banks, and investment banks have all significantly underperformed the market as a whole, as represented by the Standard & Poor’s 500 index. Between July 2007 and March 2008, shares in those companies lost about a third of their value.

Financial market conditions have not stabilized, despite the efforts of regulators. The ultimate fear of the Federal Reserve is that the flow of credit to sound business and consumer borrowers will be disrupted, causing spending and investment to contract sharply throughout the economy. To date, there has been “tightness” in certain lending markets, but credit remains generally available. This report focuses on the tools that regulators — primarily but not exclusively the Federal Reserve — have employed or devised to avert a full-blown financial crisis that would be expected to worsen macroeconomic conditions.

¹ Brian Caplen, “Credit Suisse CEO: Clear View Curtails Crisis Fallout,” *The Banker*, January 1, 2008.

Figure 1. Figure 1. Commercial and Investment Bank Stock Indexes, January 2007- March 2008



Source: Global Financial Data.

The Underlying Financial Problems

CRS Report RL34182, *Financial Crisis? The Liquidity Crunch of August 2007*, by Darryl Getter et al., describes the channels through which distress in subprime mortgages spread through the broader financial system. The subprime crisis triggered a reassessment of financial risk that encompassed other markets, including leveraged loans,² takeover financing, credit derivatives and commercial paper. There was — and still remains — great uncertainty regarding the true value of certain financial instruments, especially those with complex structures or for which active trading markets do not exist.

In the changed atmosphere, many market participants became reluctant to extend credit, either because they could not judge the prospective borrower's financial condition with any confidence, or because they were unsure what the assets in their own capital base would bring, should they be forced to liquidate them to cope with unexpected losses. This reluctance translated into what the Federal Reserve calls tightness, primarily in the interbank lending market, but also in certain consumer and business credit markets.

One way to describe the root problem is to call it valuation risk — the information or transparency that facilitates the smooth flow of credit was suddenly lacking. That valuation problems should have so marked an effect is a result of several long-term trends in financial markets:

² Risky bank loans equivalent to high-yield “junk” bonds, often made in support of corporate takeovers or buyouts.

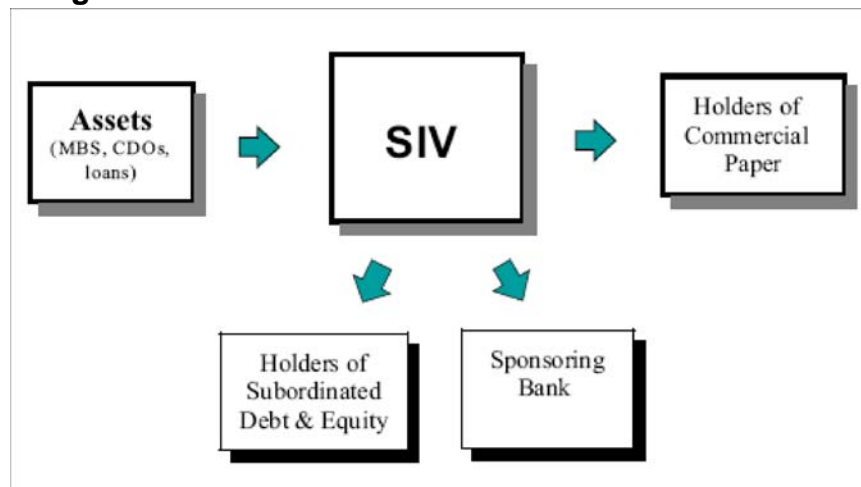
- the use of complex financial instruments, whose value is often linked by complex formulae to the value of other instruments or financial variables, and for which no active trading markets exist;
- the practice of moving risky financial speculation off the books, into nominally independent accounting entities, so that the results do not appear in the financial accounts of the parent financial institution; and
- the growing use of leverage, or borrowed funds, which permits institutions to take larger market positions with a given capital base, increasing potential profits (but also losses).

One example that embodies all three trends is the Structured Investment Vehicle, or SIV, an entity created by banks to enable speculation on the relationship between short- and long-term interest rates.

SIVs

In mid-2007, commercial banks operated several dozen SIVs, with total assets of between \$350 billion and \$400 billion. **Figure 2** illustrates the basic cash flows. The SIV bought long-term debt assets, often mortgage-backed bonds, from which it received interest income. Purchase of these assets was financed by issuing short-term debt, usually commercial paper.³ The SIV's net revenue was determined by the difference, or spread, between these two cash flows; the operation was profitable so long as the payouts from the assets exceeded interest payments to the commercial paper holders.

Figure 2. Structured Investment Vehicle Cash Flows



Source: CRS.

³ Commercial paper is used as a source of short-term borrowing by many firms, financial and nonfinancial. The maturity is generally between three months and one year.

The profits were distributed in two ways: first as fees for services to the sponsoring institution, and second, as dividends or interest to holders of subordinated debt and equity, who were the nominal owners of the SIV. (Accounting rules require outside ownership for the SIV to be carried off the books of the sponsoring bank. In general, however, the bank was responsible for investment decisions and provided all brokerage, trade processing, and other services.)

According to one estimate, 72% of the equity in mortgage conduits, of which SIVs are a subset, was held by hedge funds.⁴ Hedge funds are typically highly leveraged, which suggests that much of the equity capital in SIVs was borrowed, perhaps from the sponsoring banks themselves.

Many of the assets held by SIVs were mortgage-related, but rarely were they actual loans. Rather, they were securities backed by pools of loans, in which the interest and principal payments of homeowners are passed through to the holders of the bonds. Financial engineers also bundled mortgage-backed bonds into pools of securities called collateralized debt obligations (CDOs), and sold claims against them. CDOs were carved into various classes with different risk characteristics and yields. The portions of the pool that proved most difficult to sell might be pooled again, carved up, and resold — in a so-called CDO squared.

Despite their complexity, such securities were often able to obtain AAA ratings, despite the fact that they were offering interest rates significantly higher than AAA corporate bonds. CDOs found a ready market in institutional investors seeking higher yields than traditional debt instruments offered in the early 2000s, and they were incorporated into aggressive speculative strategies such as SIVs.

As subprime defaults climbed to historically unprecedented levels in 2007, the value of mortgage-backed instruments became hard to determine, since it depended crucially on uncertain projections of future loan performance. CDOs were particularly affected, since by the time loans had been pooled and resold two or three times, it was difficult for investors to ascertain exactly what they owned.

SIVs found that they were no longer able to sell the commercial paper that supported their assets. Sponsoring banks were required to extend credit to the SIVs (and in many cases were compelled to do so, having granted contingent lines of credit in order to secure high ratings for their SIVs' commercial paper) or to take the assets onto their own balance sheets, exacerbating their own financial difficulties. Major banks did not allow SIVs to fail because of the reputational damage that would follow, but the associated losses were considerable.

SIVs are only one part of the story of liquidity problems in 2007 and 2008, but they are instructive because they include three features that contributed disturbance elsewhere. First, they involved the use of innovative securities, which were hard to value in the best of circumstances and which had little history to indicate how they might behave in a severe market downturn. Second, risks were underestimated: the

⁴ Adrian Blundell-Wignall, *Structured Products: Implications for Financial Markets*, [OECD] *Financial Market Trends*, No. 93, 2007, p. 45.

SIVs were a form of highly-leveraged speculation, which was dependent on the assumption that the markets would always supply liquidity. Finally, they were off balance sheet entities: few in the markets (or perhaps in the regulatory agencies) had an accurate idea of the scope or nature of their activities until the trouble came.⁵ The result of the interaction of these factors with a credit market downturn — in the SIVs and elsewhere — is the most sustained period of instability in U.S. financial markets in many years.

What Makes a Financial Crisis?

Since August 2007, the Federal Reserve has recognized deteriorating financial markets as a principal threat to the economic outlook. Despite soaring commodity prices and a falling dollar, which would normally raise inflation fears, the Fed has eased monetary policy, reducing its target for the federal funds rate from 5.25% (the level that was established in June of 2006) to 3.00%. It has declared its willingness to provide liquidity to the financial system.⁶ In the process of reaching the lower interest rate target, the Fed, in its open market operations, buys securities from depository institutions, giving them new cash to lend. Lower rates themselves, of course, stimulate demand for credit, as more investment projects become potentially profitable once they can be funded at lower cost.

In recent years, such actions have appeared to be sufficient to prevent financial shocks from developing into crises. Neither the stock market crash of 1987 (where the stock market lost 23% of its value in one day), the near collapse of the Long-Term Capital Management hedge fund in 1998 (which threatened to paralyze the bond markets), the “dot.com” crash in 2000-2001 (which again erased trillions of dollars in stock value), nor the September 2001 terrorist attacks (which closed markets and disrupted payment systems) was followed by the kind of prolonged financial stress observed in late 2007 and into 2008.

Many observers believe it is premature to speak of a financial “crisis” at this point, when relatively few financial firms have actually failed and when the economy continues to grow, albeit at a slower pace. Tight credit conditions, in this view, simply reflect a normal market cycle: after a period of financial expansion driven by low interest rates, abundant credit, and a relaxed attitude towards risk, there inevitably comes a correction: losses occur, forcing lenders to raise new capital or make fewer loans to rebuild their capital and reserves. According to this line of argument, the process is self-correcting, and given that most financial institutions entered the current period of turbulence with large reserves of capital to cushion against losses, should be allowed to play out.

⁵ For example, Citigroup’s SIVs held about \$100 billion in assets at the peak, yet the firm’s quarterly report for the second quarter of 2007 contained no reference to them. (The third quarter report, of course, devoted considerable space to the associated problems and potential losses.)

⁶ Liquidity, in central banking terms, means maintaining the flow of credit. The Fed’s declarations signal market participants not to allow credit decisions to be governed by fears that the opposite party may have temporary cash flow problems.

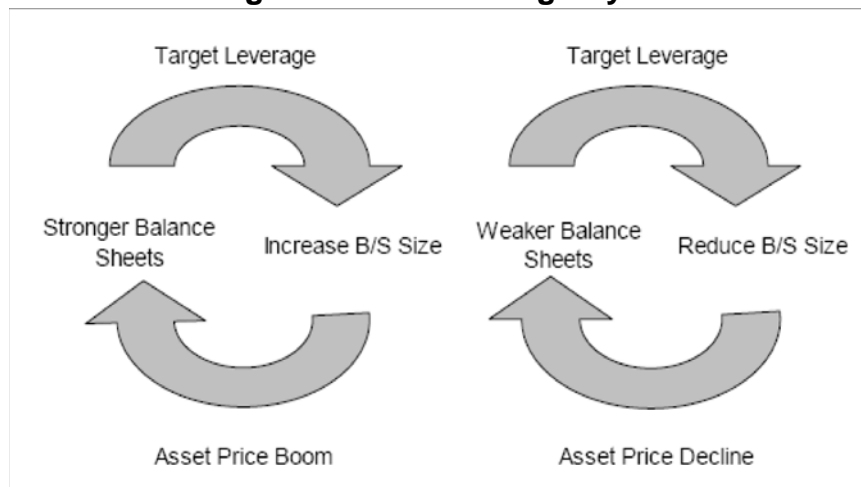
Treasury Secretary Paulson, for example, stated in January 2008 that large losses reported by several major institutions were a sign that the system is working: “As markets reassess, we should not be surprised or disappointed to see financial institutions writing down assets and strengthening balance sheets. This is market discipline in action and should enhance market confidence over time.”⁷

While the self-correcting properties of markets are generally acknowledged, several analysts identify forces that work in the other direction. In their models, shocks produce other shocks, multiplying the effects of an original loss.

In a recent paper, Greenlaw et al. focus on the pro-cyclical nature of leverage.⁸ They assume that firms prefer to maintain a more or less constant level of leverage, or ratio of total assets to capital. As the assets that make up a firm’s capital base gain in value, the firm can support more assets on the balance sheet. Balance sheet expansion, in turn, involves asset purchases, boosting asset prices further.

When prices are falling, however, the cycle works in reverse. As its capital loses value, the firm must shrink its balance sheet to maintain a given leverage ratio. As firms sell assets to reduce balance sheet exposure, asset prices are driven down. Because financial firms are typically highly leveraged, a balance sheet adjustment of any given size is multiplied. The authors assume that commercial banks have leverage ratios of about 10:1, meaning that a \$1 billion capital loss requires a \$10 billion reduction in their portfolio of assets, which consists primarily of loans. In other words, price shocks to a firm cause behavior that reinforces the movement of prices. These self-reinforcing cycles are illustrated in **Figure 3**.

Figure 3. The Leverage Cycle



Source: David Greenlaw, Jan Hatzius, Anil Kashyap, and Hyun Song Shin, “Leveraged Losses: Lessons from the Mortgage Meltdown,” U.S. Monetary Forum Conference Draft, Feb. 29, 2008, p. 30.

⁷ Martin Crutsinger, “Paulson: No Simple Solution to Housing Crisis,” *York Dispatch*, January 7, 2008.

⁸ David Greenlaw, Jan Hatzius, Anil Kashyap, and Hyun Song Shin, “Leveraged Losses: Lessons from the Mortgage Meltdown,” U.S. Monetary Forum Conference Draft, February 29, 2008, 47 p.

In a 1996 paper, Bernanke, Gertler, and Gilchrist also seek a solution to the “longstanding puzzle” that large fluctuations in aggregate economic activity sometimes arise from what appear to be relatively small impulses.”⁹ They describe a mechanism they call the “financial accelerator.” They argue that the cost of external finance to a firm — its cost of borrowing — is inversely related to its net worth. A fall in asset prices reduces the collateral value of the firm’s assets, which hinders or raises the cost of borrowing. By simultaneously increasing the need for external finance and restricting its availability, a negative shock causes the firm to reduce spending and production. “To the extent that negative shocks to the economy reduce the net worth of borrowers..., the spending and production effects of the initial shock will be amplified.”¹⁰

These two models describe similar effects, acting upon both the supply of and demand for credit. The models suggest that shocks to financial firms can have disproportionate impacts on real economic activity. When financial turbulence interacts with expectations of a contraction in real economic activity, the prospect of another negative spiral emerges. Martin Feldstein, chairman of the Council of Economic Advisers under President Reagan, describes the situation as a kind of Catch-22: “The credit flows needed for economic expansion require confidence in the values of financial assets, but market participants may not have such confidence while the risk of recession hangs over us.”¹¹

Federal Reserve Governor Frederic Mishkin elaborated on this theme in November 2007:

The second type of risk that I consider central to the understanding of financial stability is what I call *macroeconomic risk* — that is, an increase in the probability that a financial disruption will cause significant deterioration in the real economy. Because economic downturns typically result in even greater uncertainty about asset values, such episodes may involve an adverse feedback loop whereby financial disruptions cause investment and consumer spending to decline, which, in turn, causes economic activity to contract. Such contraction then increases uncertainty about the value of assets, and, as a result, the financial disruption worsens. In turn, this development causes economic activity to contract further in a perverse cycle.¹²

This scenario, according to Mishkin, explains why the Federal Reserve is unwilling to assume that markets will self-correct without serious damage to the real economy. Financial instability, “if allowed to develop fully,” could have severely

⁹ Ben Bernanke, Mark Gertler, and Simon Gilchrist, “The Financial Accelerator and the Flight to Quality,” *Review of Economics and Statistics*, vol. 78, February 1996, p. 1.

¹⁰ *Ibid.*, p. 2.

¹¹ Martin Feldstein, “Our Economic Dilemma,” *Wall Street Journal*, February 20, 2008, p. A15.

¹² Frederic S. Mishkin, “Financial Instability and Monetary Policy,” Speech at the Risk USA 2007 Conference, New York, November 5, 2007.

negative consequences in both financial markets and the global economy.¹³ To address the risk — however small — that the current situation could develop into a full-blown financial crisis, cutting off credit flows that support investment and spending, the Fed (and other central banks and regulators) have taken extraordinary steps. In one description that is perhaps not entirely hyperbolic, central bankers have decided to “tear up their rule books and established practices...to inject cash, resuscitate the interbank market, and hopefully ease the credit squeeze.”¹⁴

Government Interventions

Open Market Operations and Monetary Policy

The Fed has made aggressive use of its monetary policy tools: cutting the federal funds rate target five times, including a dramatic cut of 75 basis points (0.75%) on January 22, 2008, and using its open market operations to inject liquidity into the banking system. Early cuts appeared aimed specifically at financial markets, but more recently, as the Fed has explicitly recognized that market conditions have become a drag on real economic activity, the distinction between actions aimed at restoring financial stability and those aimed at macroeconomic stimulus has become blurred, if it exists at all.

The Discount Window

In addition to open market operations, the Fed can provide liquidity by lending to individual banks through its discount window. Eligible banks can borrow short-term (usually overnight) directly from the central bank. Whereas open market operations target the system as a whole, discount lending provides support to particular banks with a need for liquidity. Another distinction is that discount window borrowings can be collateralized using a broader range of assets than open market transactions, where the only acceptable collateral is U.S. Treasury or agency securities.¹⁵

On August 10, 2007, in its first public response to worsening financial conditions, the Fed announced a 50 basis point cut in the discount rate. (The Federal Funds rate was not cut until the next regularly-scheduled meeting of the Federal Open Market Committee in September 2007.)

A limitation of discount lending is that banks do not like to use it. Borrowing at the discount window may send a signal to the markets that a bank has liquidity problems. In an environment like that of late 2007, when interbank lending was already constrained by credit risk fears, the perceived costs of such a perception of

¹³ Ibid.

¹⁴ “Central Banks’ Action Is Welcome But Long-Term Rethink Is Needed,” *The Banker*, January 1, 2008.

¹⁵ Agency bonds are those issued by government-sponsored enterprises like Fannie Mae and Freddie Mac.

financial weakness rise. To overcome the “stigma” of the discount window, the Fed introduced a new method for providing liquidity, the Term Auction Facility.

Term Auction Facility (TAF)

Despite the Fed’s efforts to restore liquidity using its standard tools, markets continued to be tight. In December 2007, the Fed, together with the central banks of Canada, Britain, the European Union, and Switzerland, announced “measures designed to address elevated pressures in short-term funding markets.”¹⁶

The Term Auction Facility (TAF) has conducted a series of auctions of short-term loan funds to banks, accepting as collateral the same wide variety of assets that can be used to secure discount window borrowing. Auctions involve a fixed amount of funds, at a rate to be determined by competitive bidding. Since December, the TAF has held two auctions per month, and about 60 to 75 financial institutions have submitted bids at each. TAF funds are loaned for periods of 28 to 35 days. The amount of funds provided to the bidding banks was \$40 billion in December, \$60 billion in both January and February, with \$100 billion projected for March. The total — \$260 billion — thus will exceed by a considerable margin the economic stimulus package (P.L. 110-185) passed by Congress in February 2008, which will provide about \$160 billion in tax rebates and reductions.

The TAF program — and efforts to restore liquidity to the banking system generally — raise certain questions. If the current financial situation is fundamentally a reaction to a period of too-easy access to credit and of excess liquidity, is providing more liquidity the appropriate response? If market discipline operates by forcing banks to absorb losses and shrink their balance sheets, do the Fed’s actions to expand credit prolong the adjustment process? Provision of liquidity lowers interest rates, which is good for borrowers and for interest-sensitive economic sectors such as housing, but not for savers, because rates of return on conservative investments like bank CDs and money market funds are depressed. It could be argued that the Fed appears to be rescuing those who caused the problem at the expense of others who had nothing to do with it.

Others question the efficacy of the mechanism: supplying liquidity to banks does not automatically translate into more lending.¹⁷ If elevated credit risk concerns are what is causing tight credit markets, liquidity provision may be the equivalent of “pushing on a string.”

In addition, the Fed is aware that actions that appear to undercut market discipline may encourage excessive risk-taking in the future. But the risk that financial market problems may cause or exacerbate a slowdown in macroeconomic growth outweighs all other factors, even though there is as yet no indisputable evidence of such a link. The risks of waiting until there is such evidence are not

¹⁶ “Federal Reserve Actions,” Press Release, December 12, 2007.

¹⁷ See, e.g., Steven Sloan, “Fed Pushes Harder, But Sentiment Isn’t Shifting,” *American Banker*, vol. 178, March 10, 2008, p. 1.

acceptable to the Fed. Liquidity provision is the principal tool available to the Fed, and its recent actions suggest that it will continue to use it.

On February 27, 2008, in his semiannual monetary report to the Congress, Fed Chairman Bernanke testified that the TAF, in conjunction with the parallel programs of other central banks, “appear[s] to have contributed to some improvement in short-term funding markets.”¹⁸ On March 7, however, the Fed — citing “heightened liquidity pressures in term funding markets”¹⁹ — increased the amount of funds for the two TAF auctions planned for the month of March (from \$30 billion to \$50 billion each) and announced that it would conduct a series of repurchase transactions expected to provide another \$100 billion into the banking system.²⁰

Treasury’s “Super-SIV” Proposal

In the fall of 2007, when public attention focused on SIVs that were suddenly unable to find buyers for asset-backed commercial paper, a number of large banks met with Treasury officials and designed a financial structure to alleviate SIV funding problems. They proposed that a consortium of private banks create a “Master Liquidity Enhancement Conduit” (MLEC), to be capitalized entirely by the banks, which would buy assets from existing SIVs and fund these purchases in exactly the same way that the SIVs had done in the past: by issuing short-term commercial paper. The expectation was that commercial paper issued by the MLEC would be viewed as safe because of the vast financial resources of the participating banks and because the Treasury had endorsed the plan (although MLEC’s debt would not carry any formal government guarantee).

The MLEC concept was announced on October 15, 2007, in a joint press release from J.P. Morgan Chase, Bank of America, and Citigroup, which noted that the Treasury had facilitated the agreement.²¹ (The Federal Reserve had no comment on the plan, then or later.) Negotiations proceeded over the following weeks and months, but although press reports suggested that agreement was near, in the end banks were unwilling to commit capital to the project. The apparent coup-de-grace was delivered on December 20, 2007, when the three largest Japanese banks declined to participate.²² A few days later, the effort to launch the MLEC was abandoned.

¹⁸ “Semiannual Monetary Policy Report to the Congress,” before the House Committee on Financial Services, February 27, 2008. (Identical testimony was presented before the Senate Committee on Banking, Housing, and Urban Affairs on February 28.)

¹⁹ See [<http://www.federalreserve.gov/newsevents/press/monetary/20080307a.htm>].

²⁰ A repurchase agreement is a securities transaction that is equivalent to a loan. One party (the Fed, in this case) “buys” a security from another, who promises to buy it back later at a higher price. The difference between the prices is equivalent to interest; the security itself serves as collateral.

²¹ “Global Banks Announce Plans for Major Liquidity Facility to Bolster Asset-Backed Commercial Paper Markets,” *PR Newswire*, October 5, 2007.

²² Atsuko Fukase, “Japanese Banks Balk at Aiding SIV Fund,” *Wall Street Journal*, December 20, 2007, p. C9.

There are two explanations for the failure of the MLEC proposal. First, it was not clear that the concept was economically viable. The underlying problem was that the mortgage-backed assets held by SIVs had lost value and might continue to lose value unless the housing market recovered. How would transferring those assets (and losses) to a “super-SIV” help? The assumption behind the MLEC proposal was that markets were in a state of panic and that prices of mortgage-backed assets at that time were below their fundamental values. If liquidity could be restored, the super-SIV could simply hold assets until markets stabilized and rational valuations returned, and make a profit. Meanwhile, the MLEC would have given the SIVs a better price than they could have found elsewhere, allowing the sponsoring banks and other investors to cap their losses, and avoiding a “fire sale” by desperate SIVs at the brink of insolvency, which would have driven values even lower, exacerbating the general financial situation and further roiling housing markets.

In retrospect, it appears that prospective MLEC participants found this assumption and scenario less persuasive than an alternative view: that mortgage assets were not necessarily priced below fundamental values, but might still have some distance to fall. In this analysis, the SIVs’ problem was not one of liquidity, but of solvency, and the notion that they could be rescued at a profit was deemed to be unrealistic.

Second, as time went on, it became apparent that the SIVs did not in fact pose an acute threat to their sponsoring banks. By the end of 2007, over \$109 billion in SIV assets had been brought back onto the sponsoring banks’ balance sheets, without triggering a solvency crisis in those banks.²³ SIV assets became simply one of many sources of financial pain.

With hindsight, the SIV issue may have been overstated in the fall of 2007. It was a serious problem, and contributed to perceptions of elevated credit and valuation risk that fed the general financial turmoil, but it was not the key to the entire systemic disturbance. Rather, SIVs were one of several trouble spots that may be more properly characterized as symptoms of an underlying problem, or set of problems.

Provision of New Capital to Financial Institutions

As noted above, when banks and other financial institutions suffer declines in the value of their capital, to maintain constant leverage ratios they must either shrink their balance sheets or raise new capital. From a regulatory perspective, the latter method is usually preferable, since it does not require that new lending be curtailed. For the government to bail out troubled financial institutions through an injection of public funds is rare, although many assume that certain large institutions are “too big to fail” — that is, that the failure of such an institution could have adverse systemic consequences so severe that the government would have no choice but to intervene.

²³ The exact total is unknown. The \$109 billion figure represents announced transactions by five banks: Citigroup (\$49 billion), HSBC (\$45 billion), Rabobank (\$7.6 billion), Societe General (\$4.3 billion), and Standard Chartered (\$3 billion). See “Bringing It All Back Home,” *American Banker*, vol. 172, December 17, 2007, p. 1.

The Treasury and the Federal Reserve officially deny that any such policy exists, because the moral hazard issue — which (as discussed above) may be a secondary effect of the Fed’s liquidity support programs — is very clear here. If institutions believe they will be rescued from insolvency, they will take imprudent risks: the calculus becomes “Heads, I win; tails, the taxpayers lose.”

Although several major financial institutions experienced severe financial stress in 2007, there have been surprisingly few rumors that the U.S. government was preparing to step in to prevent a spectacular collapse. In fact, troubled U.S. institutions have been able to raise significant amounts of new capital. Much of this money — over \$30 billion by one estimate²⁴ — has come from government sources, but not the American government. Instead, sovereign wealth funds operated by China, Singapore, Abu Dhabi, and other countries have taken large equity stakes in Citigroup, Merrill Lynch, Morgan Stanley, and other firms, including leading European financial institutions.

While some find sovereign wealth fund investment to be problematic²⁵ and are uneasy at the prospect of foreign ownership of substantial shares of key Western financial institutions, there is little doubt that such investment has eased the adjustment process for the recipients and mitigated the systemic (and perhaps macroeconomic) impact of market turmoil. It is not known whether U.S. government officials played a role in soliciting these capital contributions.

Policy Issues: Are Regulators’ Tools Adequate?

This prolonged period of financial stress raises questions about the ability of regulators to monitor, prevent, or respond to market instability. Policy makers may consider a number of approaches.

Information

First, some observers believe that regulators lack comprehensive information about large areas of the markets. No federal agency has direct supervisory authority over hedge funds, nonbank lenders, over-the-counter derivatives trading, private equity funds, all of which demand liquidity and can become the trigger for systemic instability. When regulated firms create off-balance sheet entities, oversight becomes more difficult. According to Secretary Paulson, “regulators didn’t have clear enough visibility with what was going on in terms of these off-balance-sheet SIVs.”²⁶ Banking and securities laws could be amended to authorize regulators to require

²⁴ Gillian Tett, “Sovereign funds face growing US pressure to address market fears,” *Financial Times*, January 24, 2008, p. 1.

²⁵ See CRS Report RL34336, *Sovereign Wealth Funds: Background and Policy Issues for Congress*, by Martin A. Weiss.

²⁶ Carrick Mollenkamp, Deborah Solomon and Craig Karmin, “Call to Brave for \$100 Billion Rescue; Banks Seek Investors For Fund to Shore Up Commercial Paper,” *Wall Street Journal*, October 16, 2007, p. C1.

more disclosure and reporting from (1) currently unregulated firms and sectors and (2) about off-the-books activities of regulated firms.

U.S. financial regulation is divided among agencies specializing in single markets: futures, individual banking sectors, or securities. In today's markets, however, firms' activities regularly cross those lines. An integrated firm like Merrill Lynch or Citigroup files reports with half a dozen agencies — would a single, consolidated supervisor be better able to interpret this information and assess market conditions?

Others question whether regulators can be expected to monitor overall market conditions, when the current turmoil suggests that even market participants lack that capacity. The introduction of new and complex derivative instruments and securities has been a major profit center in the financial industry for several decades. In other words, while transparency benefits regulators and public investors, opacity can be a source of income for market intermediaries and professional traders. The problem of hard-to-value assets and unverifiable trading models is likely to persist.

Another view is that regulators had plenty of information indicating that trouble was imminent, but failed to take adequate preventive measures. According to Martin Feldstein, even though “the Fed’s examiners have complete access to all of the transactions of the banks that they supervise [and] can also examine indirectly what nonbank financial institutions are doing,” the Fed failed to provide appropriate supervisory oversight for major money center banks, making such technical errors as understating liabilities associated with off-balance sheet activities and overstating the quality of bank asset values that were the result of the housing bubble.²⁷ There is a natural tendency for regulators to share industry’s enthusiasm for the latest financial innovation or strategy, as long as it is generating profits that enable banks to meet capital requirements and maintain healthy levels of reserves. It is difficult, as Alan Greenspan put it, to be the one who takes away the punch bowl when the party is just getting started.²⁸ Federal bank agencies addressed securitization and off-balance sheet finance more than a decade ago, but characterized them as useful risk management tools.²⁹ (Which, in normal times, they are.)

Speculation

Financial speculation presents another set of policy choices. In general, speculation is a benign and useful activity: speculators provide liquidity and help markets allocate resources efficiently. The current episode, however, illustrates that speculative excesses and errors can cause liquidity to dry up and disrupt markets.

²⁷ Martin Feldstein, “Our Economic Dilemma,” *Wall Street Journal*, February 20, 2008, p. A15.

²⁸ According to some sources, he was quoting his predecessor, Chairman William McChesney Martin, Jr. The remark is attributed to every Fed chairman.

²⁹ See, e.g., Office of the Comptroller of the Currency, “Interest Rate Risk Management: Questions and Answers,” OCC 95-28, June 20, 1995, at [<http://www.occ.treas.gov/ftp/bulletin/95-28.txt>].

Successful speculation rewards risk-taking. Recent developments in finance make it possible to unbundle the risks embedded in traditional financial instruments. A mortgage, for example, carries credit risk, interest rate risk, and prepayment risk, but with derivatives and CDOs, each of these risks can be disaggregated and made the basis of a financial bet. Increasingly, speculators identify financial propositions with a high probability of making a small profit, and a very small chance of a large loss. The SIV model, for example, captured the spread between short-term and long-term rates, earning a modest return that was almost risk-free unless there were to be a major disruption in the commercial paper market, which was normally very large and liquid. The CDO market relies on the narrow spread between what homebuyers pay and what investors will pay for the identical mortgages repackaged. Using derivatives, it is possible to construct similar trades based on tiny variations in observed historical relationships among a multitude of economic variables.

Of course, a strategy that promises a small but seemingly predictable return does not appeal to most investment bankers: Treasury bills offer the same risk/reward characteristics. What the bankers do is add leverage: if they borrow a high multiple of their own capital and put those funds into the same trading position, the returns to their own capital are magnified. Of course, the potential losses are magnified to exactly the same degree. Then why is leveraged speculation attractive?

One answer, put forward by Raghuram Rajan, former chief economist of the International Monetary Fund, is that compensation structures reward short-term performance and ignore long-term risk.³⁰ That a strategy is likely to fail spectacularly every ten or twenty years is not a disincentive to the leveraged trader: he will probably receive several large annual bonuses before the bad year comes, and even then may keep his job, since many of his peers will probably have incurred similar losses. The CEO of Morgan Stanley, for example, received no bonus for 2007, but kept the \$40 million from the year before.³¹

The combination of modern financial engineering and short-term incentives may distort or weaken market discipline and lead to excessive risk-taking. The costs of failed speculation are not always borne by the speculators themselves but may be widely distributed throughout the financial system and, in extreme cases, may fall upon the economy as a whole. Is there a case for more stringent regulation to restrain speculation or limit the potential damage from speculative losses?

Financial supervisors can impose higher capital and reserve requirements on regulated firms, and can control the amount of leverage such firms extend to their unregulated customers. Such controls would smooth out the peaks and troughs of financial industry returns: this would mean, in effect, putting a brake on periods of economic and financial expansion. Rajan suggests that significant portions of bankers' pay could be held in escrow for long periods, and that losses be factored in

³⁰ Raghuram Rajan, "Bankers' Pay is Deeply Flawed," *Financial Times*, January 9, 2008, p. 11.

³¹ The firm wrote down the value of its assets by \$9.4 billion in the last quarter of 2007, but increased its year-end bonus pool by 18%.

before final disbursement.³² The degree of support for initiatives such as these among regulators and policy makers is likely to depend on how the current financial turmoil is resolved, and at what cost.

³² Ibid.