

CRS Report for Congress

Financial Crisis? The Liquidity Crunch of August 2007

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Summary

Firms are said to be liquid when they are able to meet current obligations or short-term demand for funds. A firm is said to be solvent but illiquid when its assets exceed its liabilities but it is unable to liquidate assets rapidly enough to meet current obligations. Markets are said to be liquid when a large volume of financial securities can be traded without price distortions because there is a ready and willing supply of buyers and sellers. Liquid markets are a sign of normalcy.

In August 2007, liquidity abruptly dried up for many firms and securities markets. Suddenly some firms were able to borrow and investors were able to sell certain securities only at prohibitive rates and prices, if at all. The liquidity crunch was most extreme for firms and securities with links to subprime mortgages, but it also spread rapidly into seemingly unrelated areas. The stock market experienced unusual volatility and investors rushed to buy the safest of all investments, U.S. Treasury securities. On August 31, Federal Reserve Chairman Ben Bernanke noted that “[a]lthough this episode appears to have been triggered largely by heightened concerns about subprime mortgages, global financial losses have far exceeded even the most pessimistic projections of credit losses on those loans.”

The spread of disruptions from housing into other debt markets is an example of financial contagion, or systemic risk. Contagion spread among non-bank institutions: mortgage lenders, hedge funds, and issuers of various types of securities, including commercial paper, asset-backed securities, structured products, and debt supporting leveraged buyouts and takeovers. As fear of risk has increased, these institutions saw sources of credit vanish and struggled to meet existing financing commitments, to post additional collateral, and to cope with portfolio losses. Some financial institutions, primarily mortgage lenders and hedge funds, have been unable to resolve liquidity problems and have closed. In the months ahead, there may be more failures.

Central banks, including the Federal Reserve, have responded by providing liquidity — injecting cash into the banking system and lowering interest rates — in order to prevent financial disruptions from slowing real economic growth. While financial “paper losses” have no direct effect on output or employment, there are channels through which changes in financial conditions may be transmitted to the real economy: for example, tight credit and equity markets restrain business investment in plant and equipment.

In the wake of the liquidity crunch, policymakers may consider several areas for reform. Could regulation have prevented current problems in the mortgage market? Should credit rating agencies, like Moody’s and Standard & Poor’s, be subject to more oversight by the Securities and Exchange Commission? Should the non-bank institutions that have been central to this episode be subject to greater regulatory supervision or information disclosure requirements? This report analyzes the causes, progress, and broad policy issues raised by recent liquidity problems, but does not address proposals to alleviate distress in the housing sector.

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Financial Crisis? The Liquidity Crunch of August 2007

Introduction

Financial markets suffered significant disruption in August 2007. Certain financial instruments, especially mortgage-backed collateralized debt obligations (CDOs), became illiquid, that is, they became difficult to sell at any price. Liquidity problems then spread across other credit markets as investors feared that losses linked to housing securities might affect a broad range of market participants. There was a “flight to quality” as investors shifted funds into the least risky securities, such as U.S. Treasury securities. As a result, many types of corporate and financial borrowers — even some with few or no links to mortgage markets — had trouble obtaining credit, whether to fund new projects or transactions, or to refinance existing debt. The stock market experienced unusual volatility, although the Dow Jones Industrial Average actually gained 156 points during August.

The financial volatility observed in August is particularly significant because it illustrates how stress in one financial market — in this case, housing — may spread to other markets, causing losses to investors and intermediaries not directly involved in the market where the trouble originated. These events raise questions about the ability of policymakers to respond to financial crises since an increasing share of credit market activity now occurs outside the banking system, in unregulated institutions such as nonbank mortgage lenders and hedge funds.

This report describes the preceding events that instigated the August 2007 liquidity crunch, followed by the major events that occurred during the crunch. It then analyzes the structure of financial markets today to identify underlying causes for the crunch. It ends by analyzing policy issues raised by the liquidity crunch relating to macroeconomic stabilization policy and financial regulation.

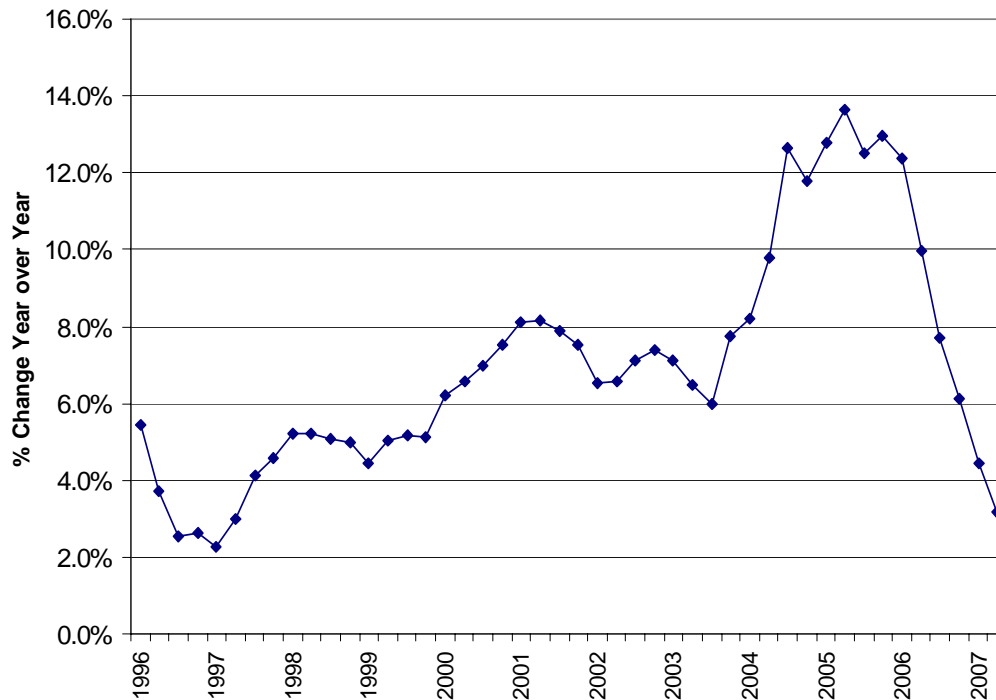
How We Got Here

The Housing Boom and Bust

House prices in some regions grew rapidly after interest rates declined in 2001. Adjusting for inflation, real U.S. house prices rose 34% during 2000-2005 (they rose 51% if not adjusted), which is more than double any five-year rate in the past 30 years. Specific regions experienced even faster appreciation; in 2004 alone, housing in Miami, Los Angeles, and West Palm Beach appreciated more than 20% and Las Vegas appreciated 35%. **Figure 1** shows that the rate of house price appreciation, year over year, reached 13% in 2006, and then plunged to 3% by mid-2007. There

are three important points to make about this figure. First, as of mid-2007, average prices of single family homes were not yet falling, according to the Office of Federal Housing Oversight's home price index (although prices were already falling according to some other data sources). Many housing analysts believe that prices in this data set may be lagging actual prices, however. Second, national averages mask regional differences. Prices in certain areas are still appreciating relatively rapidly, whereas other areas are currently declining. Third, types of housing not covered by this data series, such as condominiums, may have experienced a very different pattern of appreciation.

Figure 1. Appreciation of House Prices, 1996-2007



Source: Office of Federal Housing Enterprise Oversight.

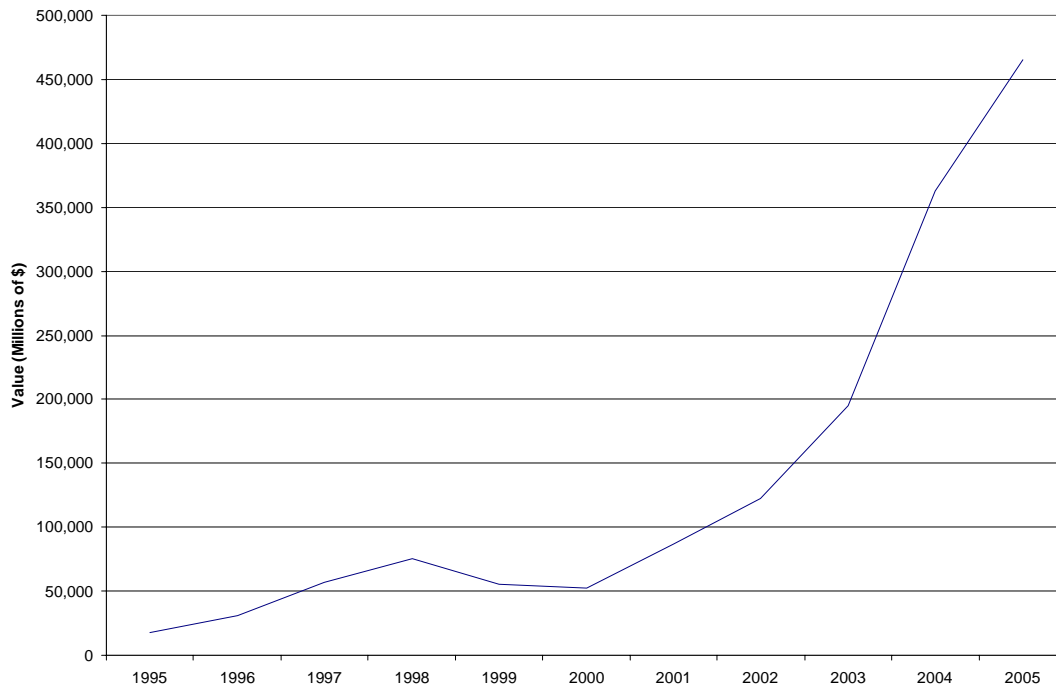
Notes: The figure is based on a repeat sales index of single family homes with conventional loans. It measures the nominal appreciation in price of a given house from the first time it was sold to the second time it was sold.

In rapidly appreciating regions, many borrowers refinanced their mortgages quickly, both because they could tap this new equity for other purposes and because the increased equity could improve their credit profile and allow them to borrow on better terms. As a result, mortgage products designed to be refinanced after a short period of time, such as so-called 2/28s, “interest only” adjustable rate mortgages (ARMs), ARMs with “teaser rates,” and option ARMs,¹ became increasingly popular in hot regional markets. Subprime borrowers (i.e., borrowers with weak credit

¹ A “2/28” is an adjustable-rate mortgage where the rate is fixed for the first two years, then adjusts for each of the next 28 years. “Interest only” ARMs have an introductory period where no principal is paid off. “Teaser rates” refer to ARMs with an introductory interest rate that is below market rates. “Option ARMs (adjustable rate mortgages)” offer homebuyers several payment options each month: interest, principal, both, or part of either.

profiles) were attracted to alternative mortgages to take advantage of growing equity's effect on their credit profile. Investors were attracted to alternative mortgages because they allowed larger purchases with less money down, often with little documentation (so-called low-doc or Alt-A mortgages).² As long as house prices continued to rise, borrowers in hot markets easily refinanced their loans or sold their homes at a profit, and delinquency rates remained low. Noting low delinquency rates, more loans with lower underwriting standards began to be made. This can be seen in the rapid growth of the subprime mortgage market, shown in **Figure 2**. In 2005, \$507.9 billion in subprime mortgage loans were pooled and sold as mortgage-backed securities (MBS), compared with \$18.5 billion in 1995.³

Figure 2. Subprime Mortgage-Backed Securities



Source: Inside Mortgage Finance, *2007 Mortgage Market Statistical Annual*, vol 1., p. 3.

When interest rates began rising and house price appreciation slowed, many borrowers in the subprime market found it impossible to refinance on favorable terms and were unable to maintain their mortgage payments when their loans reset. There is now evidence that many borrowers in the Alt-A market are having similar problems. At the same time, house sales fell rapidly, making it more difficult to quickly exit a troubled mortgage by selling. Traditionally, delinquency and default rates have been closely tied to local economic conditions, but these rates are rising today even in some areas that have relatively low unemployment and strong local economies as well. In several formerly hot markets, prices began to fall even though local unemployment remained low. For example, several Florida cities were among

² “Alt-A” most often refers to buyers who do not provide full documentation of income from traditional employment, but who would otherwise be considered prime borrowers.

³ Inside Mortgage Finance, *2007 Mortgage Market Statistical Annual*, vol. 1, p. 3.

the weakest housing markets even though Florida's unemployment rate of 3.9% remained below the U.S. average of 4.6% in July 2007.

Furthermore, surveys of mortgages originated in 2005 suggest that defaults and foreclosures will rise even higher in late 2007 and the first half of 2008. As a result, potential buyers of MBS now demand greater detail about the composition of their securities in an effort to determine their exposure to poorly underwritten loans. In the past, buyers might rely on the rating agencies to label the risk-level of a loan pool, but events have shown that the ratings agencies underestimated the risk — there have been several examples of MBS downgraded from the least-risky AAA rating to CCC (near-default) overnight.⁴ Troubles in housing markets thus caused uncertainty in financial markets and reduced the liquidity of loans and securities backed by loans.

Was the Boom a Bubble? In the aftermath of the housing boom, the question that economists are heatedly debating is how much of the increase in housing prices was due to economic fundamentals, and how much was due to a bubble — a rise in price due to “irrational exuberance” about future price appreciation, in the famous words of Alan Greenspan. A bubble would be consistent with many borrowers taking on mortgages that they could not really afford in the belief that they could borrow against the property when prices rose or “flip” the property by quickly selling it at a profit after prices rise. These borrowers may find their position untenable now that prices in local markets are instead flat or falling and sales have slowed.⁵ There were also reasons for house prices to rise based on market “fundamentals,” however, such as rising incomes and falling mortgage rates.

As discussed above, mortgage rates during the housing boom were low by historical standards, but that does not necessarily imply that they would stay low. This raises two questions about housing market behavior. First, why did borrowers increasingly use ARMs rather than locking in a relatively low fixed rate, which would have had no risk of future interest rate increases? Second, why did mortgage lenders and investors not factor in rising rates when estimating the future probability of ARM delinquencies? Default is costly to the holder of a mortgage, as well as the borrower. The answer to either question could be based on fundamentals or a bubble mentality.

- **The Yield Curve:** The first question — borrower choice — may be due to borrowers taking advantage of the difference between short and long-term interest rates, called the yield curve. The greater the difference between short and long term rates, the greater the incentive for a borrower to use an ARM, which is tied to short rates, rather than a fixed rate mortgage, which is tied to long rates — especially if the borrower plans to sell or refinance the house after a short period of time. The relatively wide spread between short and long rates from 2001 to 2004 may explain the popularity of ARMs

⁴ Mark Gilbert, “Unsafe at Any Rating,” *Bloomberg.Com*, August 30, 2007.

⁵ Just as liquidity plays a crucial role in securities markets, liquidity is important when housing is bought for investment purposes. Investors whose financial plans are based on being able to sell a house promptly may run into difficulties when sales slow.

earlier in the decade, but more recently the spread between short and long rates has become small, so that the rates available on ARMs are no longer much lower than fixed rate mortgages. The continuing popularity of ARMs in light of the fall in spreads since 2005 suggests that many borrowers might have been motivated by the prospect for short-term financial gain instead.

- **The Global Savings Glut:** The second question — lenders' and investors' willingness to finance — depends in part on expectations of future interest rates. In hindsight, we know that interest rates have been trending up in global markets. At the time, however, many analysts believed that a world surplus of savings would hold down interest rates. Among the proponents of this view was the current Chairman of the Federal Reserve, Ben Bernanke.⁶ Economic growth in countries with high savings rates, such as China, was forecast to add to this surplus of world savings and hold down interest rates. (Note that interest rates in Japan, for example, have been near zero for almost a decade.) Financial returns for investors in real estate and MBS looked favorable when compared to prevailing interest rates and compared to the risk in stocks following the bear market of 2000-2002. Investors increasingly turned to riskier types of MBS, and these investments performed well as long as house price appreciation held down mortgage defaults.

Securitization in the Mortgage Market

Changes in the structure of mortgage financing may have contributed to market volatility. Securitization allowed mortgage lenders to bypass traditional banks. Securitization pools mortgages or other debts and sells them to investors in the form of bonds rather than leaving loans on lenders' balance sheets. The MBS market developed in part because long-term fixed rate mortgages held in banks' portfolios place banks at significant risk if interest rates rise (in which case, the banks' interest costs could exceed their mortgage interest earnings).⁷ MBS were popular with investors and banks because it allowed both to better diversify their portfolios. But because the MBS market was growing rapidly in size and sophistication, accurate pricing of its risk was difficult and could have been distorted by the housing boom.

There are several forms of MBS. The simplest are called pass-throughs — interest and principal payments from homeowners are collected by the lender (or a service firm) and passed through to the owner of the MBS. More complex securities are created by pooling MBS as well as mortgages, and by giving investors a menu of

⁶ See Ben Bernanke, "The Global Saving Glut and the U.S. Current Account Deficit," the Sandridge Lecture, Virginia Association of Economics, March 10, 2005, available on the Federal Reserve Board of Governors website. For a discussion, see CRS Report RL33140, *Is the Trade Deficit Caused by a Global Saving Glut?*, by Marc Labonte.

⁷ This was the problem behind the savings and loan crisis in the 1980s: inflation and rising interest rates required lenders to pay their depositors more than they were earning on their fixed-rate mortgage assets.

risk and return options. A mortgage pool may be split into parts (called tranches) to allow cautious investors to purchase safer portions and aggressive investors to purchase the riskier, high-return tranches (e.g., tranches that bear initial losses). Finally, mortgage cash flows may be combined with derivative instruments that link payment levels to the performance of financial variables, such as interest rates or credit conditions. These securities — combinations of traditional bonds and derivatives — are called structured products.

The growth of securitization meant that more loans could be originated by non-banks,⁸ many of which are not subject to examination by federal bank examiners and not subject to the underwriting guidances issued by federal financial regulators. Studies of loans securitized in 2005 outside federal lending oversight suggest that the average subprime debt-to-income ratio rose to 40%, well above prudent levels in federal guidances. As the 2/28 or 3/27 loans with interest-only (I/O) periods and adjustable interest rates reset their monthly payments in 2007, many borrowers have been unable to meet their now higher monthly payment, while falling prices make it difficult to sell the house except at a loss. Forecasts of the coming resets suggest that the problem is likely to worsen in the second half of 2007 and the first half of 2008. The fall of 2008, however, is forecast to have far fewer reset problems because underwriting guidelines tightened significantly starting in August 2005.

Financial Problems for Lenders

One of the first signs that the slowdown in house price appreciation could have wider financial effects was the early stress on mortgage originators. As discussed above, securitization facilitated specialty non-bank mortgage lenders that operate outside the banking reserve system. Beginning in late 2006, some of these non-bank mortgage lenders suffered significant losses and their lines of credit began to dry up. For example, Ownit Mortgage reportedly could not cover its early payment defaults, which triggered a promise by Ownit to repurchase the nonperforming loans.⁹ Lenders such as Ownit depend on continuing loan sales to replenish their lines of credit and issue new mortgages. As subprime delinquency and defaults continued to rise in early 2007, the willingness of investors and securitizers to purchase mortgages from non-bank originators declined and lines of credit began to disappear. Subprime lending contracted severely and at least 90 lenders have gone out of business since the beginning of the year.¹⁰

⁸ For example, securitization meant that non-banks needed to obtain financing only until a mortgage was sold on the secondary market, so deposits were not needed to finance mortgages.

⁹ Julie Creswell and Vikas Bajaj, "A Mortgage Crisis Begins to Spiral and Casualties Mount," *New York Times*, March 5, 2007, p. C1.

¹⁰ Economist Intelligence Unit, "Heading for the Rocks," August 2007, p. 13.

Turmoil in Financial Markets

A significant downturn in the housing market would be expected to cause economic distress among mortgage lenders, homeowners who expected to refinance, sellers, and related sectors such as construction. But it is not inevitable that even a severe disruption in housing should lead to a crisis in the broad financial market. In the summer of 2007, however, the global credit markets suffered a “liquidity crunch” that went well beyond the mortgage market, and the relatively small subprime segment of the market where stresses were concentrated up to then. As Federal Reserve Chairman Ben Bernanke noted, “[a]lthough this episode appears to have been triggered largely by heightened concerns about subprime mortgages, global financial losses have far exceeded even the most pessimistic projections of credit losses on those loans.”¹¹

In retrospect, it appears that easy credit (caused by the “saving glut”) and underestimation of risk were not confined to the mortgage market. Spreads between risky corporate debt (such as junk bonds issued to finance takeovers) and safe obligations like U.S. Treasury securities were very low by historical standards — investors were willing to take risks without demanding correspondingly high interest rates in return. With both stocks and traditional fixed-income markets producing low yields after 2001, pension funds and other institutional investors were driven by their actuarial needs and competition to seek out higher-yielding investments, creating a market for hedge funds and other investment managers using exotic and complex securities and strategies. Long-term rates did not rise much even after the Federal Reserve began raising the federal funds (overnight) rate in 2004, implying that the market anticipated a plentiful supply of credit to continue into the future. This perception may have encouraged the overuse of leverage, or borrowed money, to boost returns. For example, until August, leveraged buy-outs (corporate takeovers heavily financed by debt) had soared in recent years.

A financial market adjustment need not cause widespread disruptions. Lenders could tighten their standards, debt holders could re-price their securities to reflect an updated view of risk and take the balance-sheet losses, and reckless speculators could simply go out of business, all without interrupting the mainstream of credit flows that support the global economy. But instead of such an orderly adjustment, financial markets experienced what various observers have called a rout, a panic, a crash, a bursting bubble, or a crunch. Losses have already exceeded even pessimistic expectations, as Chairman Bernanke noted, and there may be more to come. The rest of this section examines how liquidity problems spread through the financial system in August 2007.

Problems for Hedge Funds and Investment Banks

In mid-June 2007, the investment banking firm Bear Stearns announced that two of its hedge funds that invested heavily in subprime MBS were in difficulty. The

¹¹ “Housing, Housing Finance, and Monetary Policy ,” Remarks by Chairman Ben S. Bernanke at the Federal Reserve Bank of Kansas City’s Economic Symposium, Jackson Hole, Wyoming, August 31, 2007.

securities were estimated to have lost 28% of their value since the beginning of the year. Although the funds held only about \$600 million in investor capital, a negligible amount in terms of the whole U.S. mortgage market, the announcement caused alarm for several reasons.

First, the MBS held by the funds had been originally classified as very safe and low-risk by the bond rating agencies.¹² The revelation that they had lost much of their value over a very short period raised doubts about the ratings of all similar bonds, and appeared to confirm what many believed: that during the boom, many market participants had significantly underestimated the risks of lending. The announcement suggested that other holders of subprime MBS might be experiencing similar, but as yet undisclosed, losses. Thus, traders and lenders became less willing to deal with any fund or financial institution known (or suspected) to be a holder of subprime MBS. Additionally, there is a large credit derivatives market for MBS, multiplying the prospects for losses stemming from MBS volatility.¹³

Second, although (as noted above) the interest rates on subprime MBS are relatively high compared to other debt securities, they do not by themselves provide the kind of returns that hedge fund investors expect. Therefore, hedge funds commonly use leverage — borrowed funds and derivative instruments — to boost returns. This means that losses in hedge funds are not only a problem for their investors — who by law must be wealthy individuals or financial institutions presumably able to bear risk and loss — but for their creditors and counterparties as well. (The Bear Stearns funds had borrowed about \$6 billion from other firms, including Merrill Lynch, Goldman Sachs, Bank of America, and Deutsche Bank.) Since hedge funds are unregulated and do not disclose their sources of funds, this created uncertainty about which institutions were exposed to credit risk from hedge funds. Many derivatives markets are also largely unregulated, which means that the identities of a hedge fund's counterparties are not widely known. Thus, the Bear Stearns announcement led many to infer that other hedge funds were likely facing difficulties (which proved to be the case) and raised uncertainty about which associated brokers, lenders, and derivatives dealers might also face losses.

¹² Bond rating agencies, of which Moody's and Standard & Poor's are the best-known, are private firms that assign grades to debt securities, indicative of the raters' estimates of the probability that interest and principal will be paid on schedule. The ratings are important not only to investors trying to select a portfolio that matches their risk preferences, but they are also written into many federal laws and regulations. For example, the amount of regulatory capital banks are required to hold to cover the risk of loss to their bond holdings is determined by the rating assigned by the agencies, and thrift institutions are not allowed to own bonds rated below investment grade. In 2007, many blame the rating agencies for failing to downgrade subprime MBS in a timely way in response to negative information about rising defaults and imminent resets that became available early in the year.

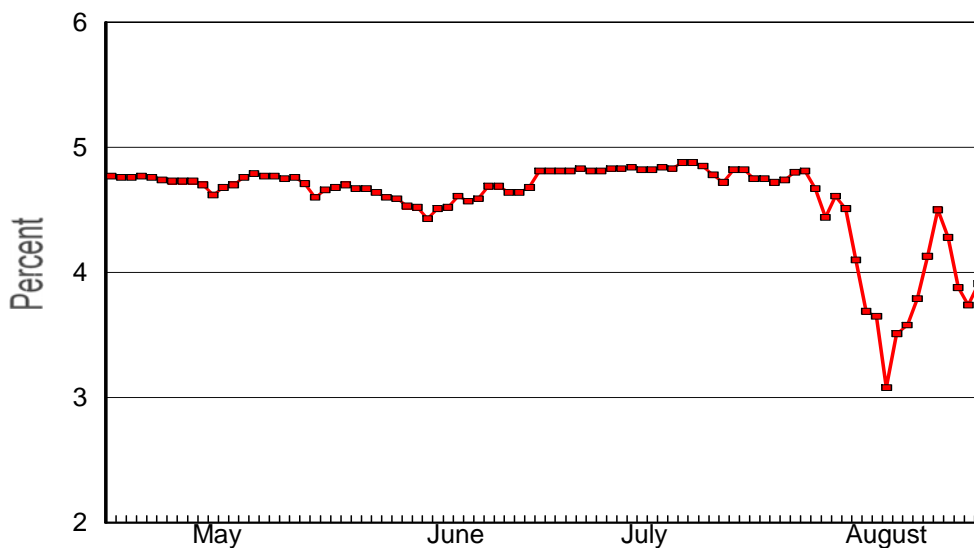
¹³ Credit derivatives are essentially bets that a debt security or firm will default, be downgraded by a rating agency, or experience another "credit event." They provide insurance for bondholders, and speculative opportunities for those who believe that the bonds' credit quality are deteriorating.

The Liquidity Crunch

Firms are said to be liquid when they are able to meet current obligations or short-term demand for funds. A firm is said to be solvent but illiquid when its assets exceed its liabilities but it is unable to liquidate assets rapidly enough to meet current obligations. Markets are said to be liquid when a large volume of financial securities can be traded without price distortions because there is a ready and willing supply of buyers and sellers. Liquid markets are a sign of normalcy — typically, investors can take liquidity for granted.

On August 9, 2007, liquidity abruptly dried up for many firms and securities markets. Suddenly some firms were able to borrow and investors were able to sell certain securities only at prohibitive rates and prices, if at all. The liquidity crunch was most extreme for firms and securities with links to subprime mortgages, but it also spread rapidly into seemingly unrelated areas. The apparent triggers for this liquidity crunch were losses related to U.S. housing at a French and a German bank, which followed on the Bear Stearns hedge fund announcement discussed above. Clearly, losses at two European banks alone would not be enough to cause a global liquidity crunch. Rather, news of these losses led to a sudden change in expectations among market participants that made them unwilling to lend to firms or buy securities at prevailing rates and prices. Beyond the sudden undesirability of firms and securities related to subprime mortgages, there was a general increase in risk aversion — investors suddenly required a much higher premium in order to be induced to hold risky assets — and a corresponding “flight to quality.” This may be seen in the sudden plunge in the yields on 3-month Treasury bills, shown in **Figure 3**. Typically, three-month Treasury yields are relatively close to the federal funds rate, since overnight bank lending is also considered to have very little risk. On August 20, three-month Treasury yields were more than two percentage points below the federal funds rate.

Figure 3. Yields on 3-Month Treasury Bills, May 1-August 31, 2007



Source: Global Financial Data.

Throughout August, there were reports of problems in other markets and financial institutions around the world, often with no apparent or previously-known connection to subprime mortgages. Although initial losses were reported in high-risk operations like hedge funds, many of the later headlines involved markets generally thought of as stable and low-risk:

- **Commercial paper**, often referred to as “corporate IOUs,” is a substitute for short-term bank borrowing. Some commercial paper is backed by assets, including mortgages. The market for mortgage-backed commercial paper dried up, causing liquidity strains for issuers and various financing vehicles and conduits, some of which are owned by banks. During the flight to quality, investors became reluctant to buy any commercial paper from issuers other than the highest-rated.
- **Money market funds** are considered safe; they invest in very short-term securities. In July, there was an influx of money (over \$1 trillion, by some accounts) into the funds. In August, however, several funds were revealed to be holding mortgage-backed commercial paper, and there was a surge in withdrawals, not limited to the named funds. Some funds froze redemptions rather than be forced to liquidate assets at prices they believed to be temporarily driven far below fundamental values.
- **Alt-A and jumbo mortgages** are non-conforming loans to borrowers normally considered less risky than subprime homebuyers.¹⁴ In August, however, aversion to risk spread into these sectors of the mortgage market, as investors became less willing to purchase any MBS not issued (and guaranteed) by Fannie Mae or Freddie Mac. This caused interest rates on mortgages that those institutions could not purchase to rise, and led to calls to remove legal and regulatory limits on Fannie and Freddie’s ability to buy mortgages.¹⁵ Doubts about the solvency of mortgage lenders grew, including Countrywide Financial, the nation’s largest.¹⁶

Another set of market participants subject to a sudden reevaluation were private equity firms. Over the past several years, private equity has had a strong track record of earning high profits by buying companies, restructuring their finances and operations, and reselling them to public investors. They attracted billions in capital from conservative investors like pension funds and nonprofits. Their deals depend

¹⁴ Jumbo loans are non-conforming because they are larger than Fannie Mae and Freddie Mac are allowed to purchase.

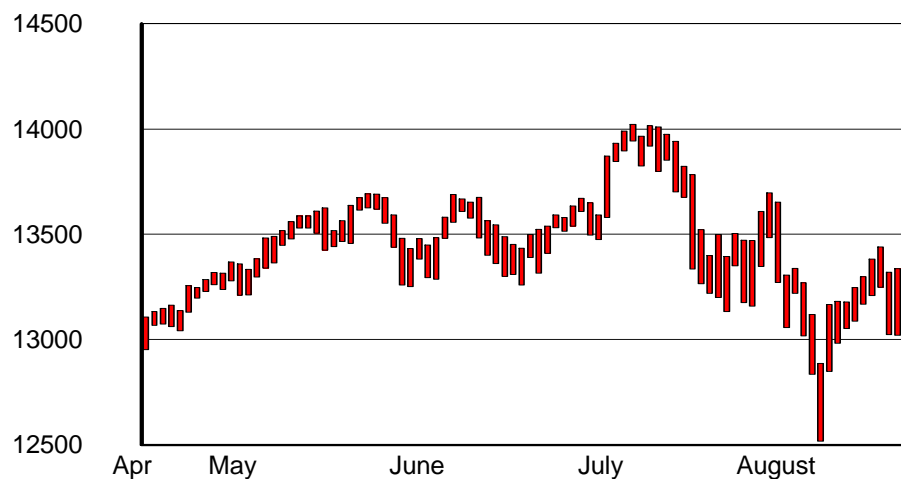
¹⁵ See, e.g., Lawrence Summers, “This Is Where Fannie and Freddie Step In,” *Financial Times*, August 27, 2007, p. 11. (Fannie and Freddie cannot buy mortgages of over \$417,000, and their underwriting standards limit their purchases of Alt-A and subprime loans.)

¹⁶ In an effort to reassure the market, Countrywide obtained a large cash infusion from Bank of America. See “Countrywide Receives \$2 Billion Strategic Equity Investment From Bank Of America,” Countrywide Financial Corporation Press Release, August 22, 2007.

heavily on borrowed funds, which suddenly became scarce, causing stress not only for the funds themselves, but for the institutions that had promised intermediate bridge financing for deals already in the pipeline. Private equity purchases of stock are widely believed to have been a strong factor in the recovery of the stock market since 2002; similarly, the retrenchment may have negative impact.

Turmoil in the debt markets was soon reflected in the stock market. **Figure 4** shows daily highs and lows for the Dow from April 25, 2007, when the index closed above 13,000 for the first time, through the end of August. As **Figure 4** illustrates, volatility increased markedly: triple-digit movements up or down in the Dow Jones Industrial Average became common, and the upward momentum seen earlier in the year, which had sent prices to record levels, was lost. Many stock markets abroad showed similar losses, although their housing markets are typically at very different cyclical positions. Price volatility produced another set of victims: hedge funds and others using computer models to trade on short-term price swings. The models could not cope with the whipsawing prices in July and August, and several “quant funds” failed.

Figure 4. Dow Jones Industrial Average, April 25-August 31, 2007



Source: Yahoo Finance.

Note: The top of each bar measures the Dow's daily high and the bottom measures the daily low.

Each of these phenomena can be plausibly explained in terms of fundamental financial conditions and factors affecting the particular markets or firms involved. What may be more important, however, is the cumulative effect they had on market psychology and, ultimately, behavior. During August, market participants did not have leisure to analyze the fundamentals behind each new headline, and the professional appraisers of risk, such as the rating agencies, appeared less trustworthy with each new revelation. Thus, to many investors and creditors, the sequence of events began to seem more and more the product of an overarching panic, or contagion. Financial contagion is said to occur when financial shocks are transmitted — from

firm to firm, market to market, or country to country — in a way that does not appear to be explained by fundamental supply or demand linkages.

Lawrence Summers, former Secretary of the Treasury, put it this way: “as investors rush for the exits, the focus of risk analysis shifts from fundamentals to investor behavior.”¹⁷ If investors believe that other investors are likely to sell, they have a strong incentive to sell even assets they believe are undervalued. As prices fall, collateral demands and margin calls force more selling, leading to cascading liquidations and a market crash.

A key issue for whether the liquidity crunch has lasting economic effects will depend on whether it becomes (or already has become) a credit crunch, which is defined as a situation where creditworthy borrowers are unable to borrow at all on terms that are consistent with economic fundamentals.¹⁸ When the panic is on, the fundamentals do not matter. When asset prices fall sharply, creditors become fearful not only about the value of their collateral, but about the solvency of their borrowers. According to a Moody’s economist, “a big problem is that lenders don’t know which of their clients is likely to default because the system is so opaque, so they stop lending to everybody.”¹⁹ From a policy perspective, higher risk premia may be a warranted market adjustment, but a true credit crunch could be problematic were it to emerge since it could reduce economic output.

The Response of Central Banks

Central banks across the world, including Europe, Japan, and the United States acted quickly to restore liquidity to the financial system following August 9. One sign of the liquidity crunch could be seen in the U.S. federal funds market, a private market where banks borrow and lend reserves to each other on an overnight basis. The Federal Reserve implements its policy decisions by targeting the federal funds rate; since the federal funds rate is determined by supply and demand in the federal funds market, the federal funds rate will only match the Fed’s target if the Fed supplies as many or few reserves to the federal funds market as are needed (a process referred to as open market operations).²⁰ To add or subtract reserves from the federal funds market, the Fed buys or sells U.S. Treasury securities.

On a normal day, the Fed might need to buy or sell a couple billion dollars of Treasury securities to keep the federal funds rate within a few one-hundredths of a percent of its target. Suddenly on August 9, the federal funds rate approached 6%, and the Fed was forced to purchase \$24 billion of Treasury securities in order to add enough liquidity to bring the federal funds rate back down to its target of 5.25%. On

¹⁷ “This Is Where Fannie and Freddie Step In,” *Financial Times*, August 27, 2007, p. 11.

¹⁸ Since economic fundamentals can be difficult to accurately measure, it is harder to identify a credit crunch with confidence than a liquidity crunch.

¹⁹ Shawn Tully, “Risk Returns With a Vengeance,” *Fortune*, vol. 156, September 3, 2007: p. 50.

²⁰ For a primer, see CRS Report RL30354, *Monetary Policy and the Federal Reserve: Current Policy and Conditions*, by Marc Labonte and Gail Makinen.

August 10, the Fed needed to purchase an additional \$38 billion to keep the rate at its target, and issued a statement that began, “The Federal Reserve is providing liquidity to facilitate the orderly functioning of financial markets.” The European Central Bank provided 156 billion euros (\$215 billion) of liquidity to markets on August 9 and 10. Normalcy soon returned to the federal funds market, although other parts of the financial system remained illiquid.

How should the Fed’s actions of August 9 and 10 be characterized? The Fed’s actions cannot be classified as a policy change since it left the federal funds target rate unchanged for over a month.²¹ Nor can it be considered unusual that the Fed bought Treasury securities to keep the federal funds rate at its target — the Fed does this on a daily basis. What was unusual about the incident was the initial sharp increase in the federal funds rate above its target, and the magnitude of liquidity the Fed needed to add to bring the rate back down to its target.

On August 17, the Fed took further actions to restore calm to financial markets when it reduced the discount rate at which banks can borrow directly from the Fed from 6.25% to 5.75%. The change in the discount rate might seem unusual since the liquidity crunch does not seem to be concentrated in the sector (depository institutions) with discount window access. It is believed, however, that banks extended lines of credit and bridge financing to many of the entities suffering from the liquidity crunch, so the extent of the banking sector’s exposure to the crunch is still unclear. In any case, discount window lending is dwarfed by open market operations.

On September 18, the Fed reduced the federal funds target rate by 0.5 percentage points to 4.75%, stating that the change was “intended to forestall some of the adverse effects on the broader economy that might otherwise arise from the disruptions in financial markets....” At the same time, the Fed lowered the discount rate to 5.25%.

Why Did It Happen?

There are two ways to think about the causes of financial market disorder. First, recent events can be seen as part of the standard narrative of cycles endemic to credit markets: during periods of relative stability, lenders become complacent and gradually overconfident, and the profit motive increasingly pushes aside the fear of loss. Then the credit boom comes to an end suddenly, triggered by some random event, and lenders and investors become more (and perhaps overly) cautious. Then the cycle begins again.

Financial markets had been unusually calm for a sustained period prior to August’s events. The prolonged period of low and smooth interest rates was probably responsible for the notable widespread drop in risk premia, as investors may have been lulled into a false sense of confidence. History suggests that this period of placidity would inevitably end at some point. Once rates rose and became more

²¹ Although no change in the targeted rate was announced, the Fed allowed the actual federal funds rate to fall below 5% on most days over the next month.

volatile, investors' tolerance for risk diminished. Changes in investor sentiment can be sudden and seemingly disproportionate to the proximate causes of the change. In such circumstances, investors may even take positions that are based more on their perceptions of herd behavior (e.g., selling an asset in anticipation of a panic) than underlying fundamentals. Investors may take liquidity for granted until the rare occasion when it unexpectedly disappears. When markets have been calm for a sustained period, liquidity premia tend to fall, and when it dries up, the price of less liquid assets may suddenly fall. In a liquidity crisis, firms may be forced to sell assets for less than their fundamental value to stave off insolvency.

Second, many observers attribute the current episode to additional factors that are byproducts of the ways that markets and institutions have evolved over the last few decades. Low interest rates made highly leveraged positions relatively more profitable, and highly leveraged market participants have grown quickly in size and importance. Hedge funds, the proprietary trading desks of investment and commercial banks, private equity firms, and others frequently magnify their positions through borrowing, the use of derivatives, repurchase agreements, or short sales. Highly leveraged positions will generate higher positive returns on average, but also have more potential for generating large losses. Large or unexpected losses by highly-leveraged institutions can have widespread consequences. As the President's Working Group on Financial Markets noted in its 1999 report on the Long-Term Capital Management hedge fund near-collapse,

When leveraged investors are overwhelmed by market or liquidity shocks, the risks they have assumed will be discharged back into the market. Thus, highly leveraged investors have the potential to exacerbate instability in the market as a whole. The outcome may be direct losses inflicted on creditors and trading counterparties, as well as an indirect impact on other market participants through price changes resulting from the disappearance of investors willing to bear higher risks. The indirect impact is potentially the more serious effect. Volatility and sharp declines in asset prices can heighten uncertainty about credit risk and disrupt the intermediation of credit. These secondary effects, if not contained, could cause a contraction of credit and liquidity, and ultimately, heighten the risk of a contraction in real economic activity.²²

Much financial intermediation has migrated from the banks — which are closely supervised and insured by federal regulators — to lightly or unregulated non-banks, and as a result the financial system has become more opaque. Similarly, the use of ever more complex financial instruments — derivatives, CDOs, structured products, etc. — both permits risks to be transferred quickly from one market or institution to another and makes it difficult to discern where the ultimate risk exposure lies. For example, MBS investors have had difficulty telling whether the mortgages underlying their securities are at risk. This opacity is not a problem when markets are functioning smoothly, and indeed the consensus view is that the ability to unbundle and transfer risk has made the financial system more robust and efficient. But the downside is that when losses do occur there is greater uncertainty about who might be affected and the extent of the damage, potentially leading to greater panic.

²² “Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management,” Report of The President's Working Group on Financial Markets, April 1999, p. 23.

Some economists have speculated that the growing complexity of and turnover in financial markets can exacerbate rare periods of extreme volatility. For example, when highly leveraged positions go sour, the process of unwinding those positions can drive asset prices even further down. Highly sophisticated hedges based on assets that are normally uncorrelated may suddenly become correlated during episodes of instability. For example, a hedge based on the assumption that two asset prices will not fall simultaneously could become costly to unwind if all prices are falling. Liquidity is crucial for many of these transactions to work — when it disappears, they fall apart. Relatively new classes of securities may have too short a history for a comprehensive knowledge of their risk profile, so that unexpected events lead to a sudden and dramatic repricing of the securities.

As discussed above, the downturn in the housing market has been unfolding for some time, and it was always likely that it would result in financial market adjustment for securities related to the housing market. Perhaps what was surprising was how sudden and extreme that adjustment turned out to be, although asset bubbles have often burst suddenly. At this point, the adjustment seems to be based more on anticipation of a future (rather than actual) rise in mortgage delinquencies, and so actual delinquencies could turn out to be higher or lower than current financial markets reflect. (The recent increase in subprime delinquencies remains a small portion of the total mortgage market.) If so, there will be further financial market adjustment, for better or worse.

What is not yet clear is whether recent events (which were much more broadly based than just the mortgage market) will lead to permanent changes in asset pricing due to a change in underlying fundamentals, or whether recent financial losses are mostly the result of panic and will eventually be reversed as calm is restored. To a large extent, this question revolves around whether permanent financial adjustment is limited to the mortgage market or whether the mortgage market represents the proverbial “tip of the iceberg.” It could prove to be the latter if the period of a “global liquidity glut” and low risk premia was an aberration that has come to a close. Data suggest that low global interest rates were always being driven more by low investment demand than high saving.²³ If so, it was always likely that investment demand would eventually recover, and, when it did, interest rates would be driven up.

Policy Issues

The liquidity crunch of August 2007 raises a number of policy issues. The fundamental question underlying them is whether the crunch and the current policy approach to its resolution has exposed the economy to an acceptable level of risk. If the liquidity crunch leaves no lasting harm, and the policy response (mainly, the Fed’s attempt to replenish the financial system’s lost liquidity) is effective and has no negative side effects, then some would argue that the natural ups and downs of financial markets are a useful and necessary way to ensure that capital is allocated

²³ See CRS Report RL33140, *Is the U.S. Trade Deficit Caused by a Global Saving Glut?*, by Marc Labonte.

efficiently. In the famous words of Joseph Schumpeter, the credit crunch may represent capitalism's "creative destruction." But the 2007 credit crunch has raised issues in a number of policy areas where economists have questioned whether policy changes could have averted the crunch, or at least tempered its more destructive side effects, without undermining market efficiency.

The first part of this section evaluates the macroeconomic response, namely the efficacy of the Fed's current approach to provide liquidity to financial markets when it dries up. The rest of the section focuses on regulatory issues that have been raised by August's events — the fear of financial contagion, finding the proper degree of regulation for modern financial markets, and potential shortcomings with rating agencies and the regulation of mortgage markets — with an eye on preventing their reoccurrence. Finally, to understand why a liquidity crunch merits policymakers' attention, the report links financial unrest to its ultimate effect on the real economy.

Monetary Policy in a Liquidity Crunch

With the potential to flood the market with virtually unlimited amounts of money, the Fed can in effect offset any loss in overall liquidity in financial markets.²⁴ But adding too much liquidity would undermine the Fed's long-term goals of maintaining low inflation and stable economic growth. So when faced with financial unrest, the Fed's options for restoring calm in the short-term are constrained by its unwillingness to undermine its long-term goals. Since monetary changes feed through to inflation only gradually, the faster excess liquidity is withdrawn after calm is restored to financial markets, the less of a threat it poses to low inflation.

If a liquidity crunch is the market outcome resulting from the decisions of private investors, why should the Fed intervene? Some have argued that when the Fed does restore liquidity, it increases *moral hazard*, the economic term for the idea that people take greater risks when they are insured against adverse outcomes. In this case, in the words of the head of Britain's central bank, "The (recent) provision of such liquidity support undermines the efficient pricing of risk by providing ex-post insurance for risky behavior. That encourages excessive risk-taking and sows the seeds of a future crisis."²⁵ These critics argue that more efficient investment decisions would be made in the long run if the Fed allowed liquidity crunches to run their course and imprudent investors took losses.²⁶

The effectiveness of the Fed's efforts to restore liquidity is limited by the fact that the Fed's actions only affect market liquidity at the broadest level. As long as

²⁴ While the Fed can increase the availability of credit, there is always the rare possibility that lenders will not use it, in which case the Fed's efforts to restore liquidity could be stymied. This scenario is referred to as a "liquidity trap."

²⁵ Carter Dougherty, "British Central Bank Critical of Cash Infusions," *New York Times*, September 13, 2007. Soon after, the British central bank appeared to reverse its stance by providing financial markets with significant liquidity.

²⁶ This argument should not be overstated. Investors will only be "bailed out" in instances when their losses correspond with steps by the Fed to restore liquidity, and plenty of investors still experienced losses during recent events despite the Fed's actions.

investors shun classes of borrowers or assets, those markets will remain illiquid and out of line with underlying fundamentals. As a result, monetary policy cannot make all markets function smoothly all the time. This reduces moral hazard, however, since it means that the Fed's actions do not interfere with market rewards and punishments for specific risk-taking behavior.

The drawback to the moral hazard critique is that allowing a liquidity crunch to run its course could run counter to the Fed's long-run goal of maintaining economic stability. If the liquidity crunch were to lead to recession, not only would overly risky investors take losses, but so would efficient firms that saw demand for their products drop solely because of the cyclical downturn. Some would argue that liquidity has characteristics of a *positive externality*, whose benefits to society exceed the benefits to private firms who provide it. If so, enough liquidity can be provided only through government intervention, in this case by the Fed.

Although the positive externality argument is generally consistent with mainstream economic thought, it and the moral hazard critique are not mutually exclusive. Traditionally, government programs that create moral hazard are complemented by government regulations to reduce risky behavior. For example, deposit insurance creates the incentive for banks to take on excessive risk, so bank regulations restrict the amount of risk that banks are allowed to take. As will be discussed below, if moral hazard really is being created by the Fed, there may not currently be corresponding regulations to offset the extra risk it generates.

The decision to lower rates is similar to the 1998 experience. Similar to today, the U.S. economy had been experiencing a sustained expansion when financial turmoil suddenly erupted in September 1998 in response to the Russian debt default, the second round of Asian crises, and financial difficulties at a hedge fund called Long-Term Capital Management.²⁷ In response, the Fed cut interest rates by 0.25 percentage points on three separate occasions over the next two months, then held rates constant until June 1999. Following these actions, calm was restored and the economic expansion and bull market continued for another two years. In hindsight, some economists have argued that cutting interest rates in 1998 was the wrong decision, because it caused the economy to overheat, inflation to rise, and a stock market bubble to grow. They argue that the economic downturn and stock market decline that began in 2001 could have been mitigated had the Fed not acted in 1998.²⁸

Systemic Risk and Contagion

The events of August are an example of financial contagion, which occurs when financial shocks are not confined to the markets where they originate, but are transmitted to other firms, markets, or countries with no fundamental link to the original problem. Trouble in the U.S. subprime mortgage market has triggered systemic risk, or repercussions throughout the global financial system. Is systemic

²⁷ See CRS Report RL30232, *Systemic Risk and the Long-Term Capital Management Rescue*, by Mark Jickling.

²⁸ See CRS Report RL33666, *Asset Bubbles: Policy Options for the Federal Reserve*, by Marc Labonte.

risk too high in today's financial system? If so, what options do policy makers have to reduce the incidence of contagion, or systemic risk?

In general, markets are self-correcting and self-stabilizing. The price mechanism ensures that when asset prices fall far enough, new buyers will be found and a new equilibrium established. In the United States, some of the largest financial markets — trading in foreign exchange and U.S. Treasury securities, for example — have functioned very well with virtually no government regulation.

True systemic risk episodes are rare events, and when they do occur, there may not be significant damage to the real economy. It is impossible to know whether instances where the Fed has successfully stepped in to quell financial turmoil, such as October 1998 and August 2007, were narrowly averted “near misses” or whether calm would have been restored anyway without government intervention. Nevertheless, financial regulators spend considerable time thinking about worst-case scenarios, because of the possible severity of the macroeconomic consequences. In the United States, modern banking and securities regulation both have their roots in and derive their basic principles from the lessons of the Great Depression, when the stock market crash of 1929 and a banking panic accompanied a decade of economic contraction and stagnation.

In economic terms, systemic risk is an externality to individual market participants. All firms have an incentive to limit their own risk taking to avoid a loss of their capital, but none has an adequate incentive to limit risk taking to reduce instability in the system at large. In the recent housing boom, decisions made by individual borrowers and lenders may have been entirely reasonable given the information available at the time, but, at the systemic level, those choices produced an unstable situation.

Should financial regulators try to reduce systemic risk by setting limits on private risk taking? There are difficulties in this approach. First, if regulators want to mandate that market participants hold more capital as a cushion to enable them to better withstand financial shocks, no one knows how much additional stability any given capital increase will yield. The problem is analogous to writing earthquake insurance policies: with a low-frequency, high-severity event, there is not enough historical data to support a robust model of the likely cost of the next unlikely occurrence. Prudential regulation imposes costs, but the systemic benefits are uncertain.

Second, financial markets are extremely dynamic, creating a moving target for regulatory attempts to reduce systemic risk. In recent years, there has been a massive movement of capital out of regulated entities like mutual funds and banks, into unregulated hedge funds and private equity. The spread of new instruments to manage, unbundle, and redistribute risk has been noted above. Furthermore, in modern financial markets, assets may be held for very brief periods of time, making regulation technically difficult. Where innovation is rapid, risk models can quickly become outdated.

Thus, there is no easy option for regulators to use to reduce the frequency of systemic crises in advance. The best available policy may be the current one, which

is to rely on the Federal Reserve to step in after the fact, to provide liquidity, and, if need be, to act as lender of last resort to bail out institutions whose failure would have unacceptable systemic consequences. As discussed in the previous section, the main drawback of this approach is the potential for moral hazard to increase.

Could Problems in the Mortgage Market Have Been Averted?

Several factors contributed to the housing boom and bust, and only time will tell which factors played the largest role. In hindsight, many borrowers took on loans that were unsustainable, especially loans with introductory rates and interest-only periods, whose use peaked in 2005. Evidence shows that loans originated by banks subject to federal safety and soundness regulators were more likely to maintain prudent underwriting.²⁹ The non-bank lenders, in contrast, appear to have been more likely to extend imprudent loans. Potential reasons on both the borrowing and lending side could include

- relative lack of financial sophistication by borrowers in the subprime market, which is disproportionately conducted by non-banks;
- deceptive or misleading loan marketing techniques by mortgage brokers and lenders with little long-term financial interests in loan performance;
- inflated appraisals during high refinance periods by appraisers seeking repeat business;
- weak underwriting criteria of lenders speculating on continued house price appreciation to hold down defaults;
- insufficient data and weak default models used by ratings agencies to estimate financial risks; and
- lack of due diligence by overconfident investors in mortgage backed securities.

Each factor suggests a different, but not mutually exclusive, response. Better financial education and improved disclosure laws, which would apply to both bank and non-bank lenders, might have improved the judgment of borrowers who took out unsustainable loans. Improved supervision of mortgage brokers and lenders could have resulted in tighter lending standards. More accurate and objective estimations by parties paid for their opinion, such as appraisers and ratings agencies, could have led to a more accurate pricing of value and risk, which would minimize the current need for a correction. More prudent underwriting standards among non-banks, either through better due diligence by securities investors or regulation by federal bank examiners, could have reduced the volume of unsustainable loans. The latter option would mark a break from current policy.

²⁹ Some critics have argued that banks would have made more prudent loans if they did not routinely securitize them, but instead held them on their balance sheet as they did in the past.

Although federal disclosure laws apply to all mortgages, not all lenders are subject to federal scrutiny for safety and soundness. Federal financial regulators concerned for the safety and soundness of the banking system issue guidances that encourage prudent lending. These guidances do not apply to many subprime and jumbo loan lenders that choose to securitize their loans. The underwriting standards of these lenders depend on the willingness of investors in MBS to purchase the loans. While house price appreciation was holding down defaults, MBS securities performed well, investment demand for them was strong, and underwriting standards loosened. Average debt-to-income ratio for subprime loans, for example, rose from 36% in 1998 to 40% in 2005. It appears at this time that problem loans originated disproportionately in the unregulated channel.

When considering whether non-bank mortgage lenders should face the same regulatory scrutiny as banks, it is useful to recall the purpose of bank regulation. Because of deposit insurance, banks face little scrutiny from depositors regarding the riskiness of their lending. “Safety and soundness” bank regulation reduces risk, and thereby the costs of deposit insurance, in the face of moral hazard. It was not meant to protect borrowers. The traditional rationale for why other financial institutions face less regulation than banks is because they face nothing analogous to the moral hazard created by deposit insurance.

Financial Market Regulation

According to Axel Weber, president of the German central bank, “the current turmoil ... has all the characteristics of a classic banking crisis, but one that is taking place outside the traditional banking sector.”³⁰ In pre-deposit insurance days, if one bank got in trouble, depositors at the bank across the street would line up to withdraw their money, not because they had new information about the condition of their own bank, but simply as a precautionary measure: the cost of withdrawing funds was minimal; the cost of waiting too long might be high. What is happening now, in Weber’s analysis, is comparable, except that instead of banks, the affected institutions are mainly conduits and investment vehicles raising funds in the corporate bond market. These institutions have borrowed short-term (e.g., using commercial paper) to finance long-term investments (MBS), and they are as vulnerable to runs as a bank (in the absence of deposit insurance) with illiquid assets (loans) financed by short-term borrowing (deposits). Most notably in the case of subprime MBS, some of the assets are now at higher risk of default, but investors are having difficulty telling which ones, so they are avoiding the entire asset class. One of the original rationales for banking regulation was to reduce the cyclicity of the credit markets, and other parts of the financial sector have shown themselves to be no less prone to cyclicity.

Hedge funds, non-bank mortgage lenders, private equity firms, issuers of commercial paper, and their ancillary credit suppliers have also faced liquidity problems as investors have sought to move into safer, more liquid assets. A policy question is whether certain non-bank financial institutions ought to be brought under

³⁰ Krishna Guha, “Credit Turmoil ‘Has Hallmarks of Bank Run’,” *FT.Com*, September 2, 2007.

the federal safety net, in exchange for accepting some form of prudential regulation. A problem with the current approach is that the Federal Reserve can only inject liquidity into the financial system through the banking sector. If banks are under stress — one estimate is that they have had to take \$1.3 trillion in risky assets back onto their balance sheets in recent months³¹ — they may not be in a position to pass liquidity to the non-bank sectors that most need it. According to one commentator, the Federal Reserve could in that situation find itself “pushing on a string.”³² The objections to widening the safety net, based on the concept of moral hazard, are discussed above. But even if the federal safety net were not extended, an argument for extending regulation could be made based on the moral hazard created by the Federal Reserve’s actions to maintain liquidity.

The SEC has sought (unsuccessfully to date) to impose disclosure requirements on large hedge funds. The word “opaque” appears often in writing about the current liquidity crunch, including this report: perhaps more disclosure by currently unregulated financial institutions would reduce uncertainty. As noted above, a key motivation for the recent “flight to quality” appears to be that investors are unable to tell whether the assets they are holding are in danger. Investors might be expected to demand greater disclosure in return for the use of their funds, but at least until August, investment was migrating to sectors with the least disclosure. The limitation to increasing disclosure is that it is most useful when financial positions are relatively simple and stable: when they are dynamic and complex, disclosed information becomes rapidly outdated.

Rating Agencies

Bond rating agencies, of which Moody’s and Standard & Poor’s are the best-known, are private firms that assign grades to debt securities, indicative of the raters’ estimates of the probability that interest and principal will be paid on schedule. The rating agencies have been of interest to Congress since the Enron collapse, when bonds of many companies were not downgraded until long after their management and accounting problems had become public knowledge. Congress passed the Credit Rating Agency Reform Act of 2006 (P.L. 109-291) to address the perceived problems created by the absence of statutory regulation of credit rating agencies.³³ The act attempts to increase competition in the rating industry, by making it easier for an agency to obtain Securities and Exchange Commission (SEC) certification. The SEC, however, does not exercise any direct regulatory supervision over the rating agencies.

³¹ Comments of Paul McCulley, managing director of Pimco, *ibid.* When the market for securitization dried up, banks were forced to hold loans and other debt assets that they had expected to sell. Banks also provide bridge financing for a variety of transactions, including private equity deals: when those deals are not completed, loans intended to be short-term may become long-term.

³² Lawrence Summers, “This Is Where Fannie and Freddie Step In,” *Financial Times*, August 27, 2007, p. 11.

³³ For a summary of this legislation, see CRS Report RS22519, *Credit Rating Agency Reform Act of 2006*, by Michael V. Seitzinger.

In 2007, the rating agencies have been widely blamed for missing looming problems in subprime MBS, causing first a false sense of security among investors, and then widespread insecurity as investors lost faith in rating designations.³⁴ What are the options for additional reforms?

One approach would be new legislation to bring the rating agencies under some form of SEC regulation. The SEC could be authorized to examine (or require disclosure of) rating methodologies, and perhaps prescribe standards for revising ratings in response to new information or changes in market conditions. The SEC could also monitor possible conflicts of interest; critics have charged that the rating agencies may sometimes adjust their ratings for competitive purposes (that is, to win business from a rival by offering a more favorable rating since issuers pay for ratings), and that issuers seeking ratings may be pressured to purchase various consulting services offered by rating agency affiliates. (There have been no public allegations that such practices underlie the problems with subprime MBS ratings.)

An opposing view is that efforts to improve the quality of the ratings are likely to produce only limited results. Markets react to new information quickly and continuously: is it realistic to think that rating agencies can have superior information about each of the thousands of rated debt securities? The rating agencies employ highly skilled analysts, but basic financial theory holds that no single individual or firm — or the SEC, for that matter — can do a better job of valuation than the market as a whole.

If rating agencies' decisions sole purpose was to guide private investment decisions, one could argue that questions concerning the quality of ratings were of no concern to public policy. The rating agencies are a concern, however, because many regulations hinge on an asset's rating. Among the legal consequences of a rating change may be higher capital requirements (for banks or securities broker/dealers) or forced divestment of certain assets (for example, by federally-insured thrifts that are forbidden to hold below investment grade (or "junk") debt). An alternate approach, then, would be for Congress to reconsider the numerous provisions in regulation and statute that refer to private rating decisions. Those doubting the usefulness of rating agencies might argue that the role of ratings in public policy should be diminished.

Financial Markets and the Real Economy

The overarching goals of the government's macroeconomic policies are not to prevent financial losses but to maintain low inflation and stable economic growth. As long as the financial system as a whole remains stable, losses for some investors are needed for capital to be allocated most efficiently and the economy to prosper. Maintaining some degree of financial stability is a policy goal not in and of itself, but because it is required for economic stability.

³⁴ In their defense, rating agencies have noted that a relatively small share of rated tranches have defaulted so far.

Although financial “paper losses” have no direct effect on economic output or employment, there are channels through which changes in financial conditions are transmitted to the real economy. Most importantly, physical capital investment is a key component of gross domestic product (GDP), and a firm’s decision to invest in physical capital (plant or equipment) is influenced by borrowing costs, access to capital markets, and its stock price. If these three determinants deteriorate, then firms are likely to reduce their physical investment, and GDP growth would eventually fall, all else equal. Given that mortgage-related asset prices have fallen most significantly in the recent episode, any decline in physical investment may turn out to be concentrated in residential investment (house building). Even if firms and individuals would still like to borrow after a financial downturn, financial firms that have suffered losses may curb their lending to improve their balance sheets.

Another channel from which financial losses can lead to lower GDP growth is through household consumption. If household wealth declines, households may eventually increase their saving — equivalently, reduce their consumption — in order to replenish it. Consumption remained relatively strong, however, during the stock market decline from 2001 to 2003, which was much larger than recent losses to date. Households with mortgage difficulties — a small fraction of the total — may be forced to reduce consumption as a result of lost access to credit. Households may also reduce their consumption as a result of declining confidence, and financial turmoil may cause confidence to decline.

If investment or consumption were to decline, it may be partly offset by an improvement in the trade deficit. Foreign capital inflows have played an important role in financing U.S. investment spending in the past few years, and if investment spending were to fall, foreign capital inflows might also fall. By accounting identity, net foreign capital inflows are equal to the current account deficit, of which the trade deficit is the largest part. Lower net capital inflows would reduce the value of the dollar, which would make exports and import-competing goods relatively less expensive. While the trade deficit would improve, foreign capital outflows could prevent interest rates from falling, however.

As the examples of the stock market decline on October 19, 1987 — the largest single day percentage decline in history — and the financial turmoil in 1998 demonstrate, financial losses need not lead to economic recessions. Nor is the direction of causation obvious in cases where stock market declines and recessions have coincided. For example, while the stock market decline preceded the 2001 recession, it might have been caused by investors’ recognition that the economy was weakening, as opposed to causing the recession itself. In general, historical experience suggests that prolonged bear markets, not transient financial unrest, are associated with recessions