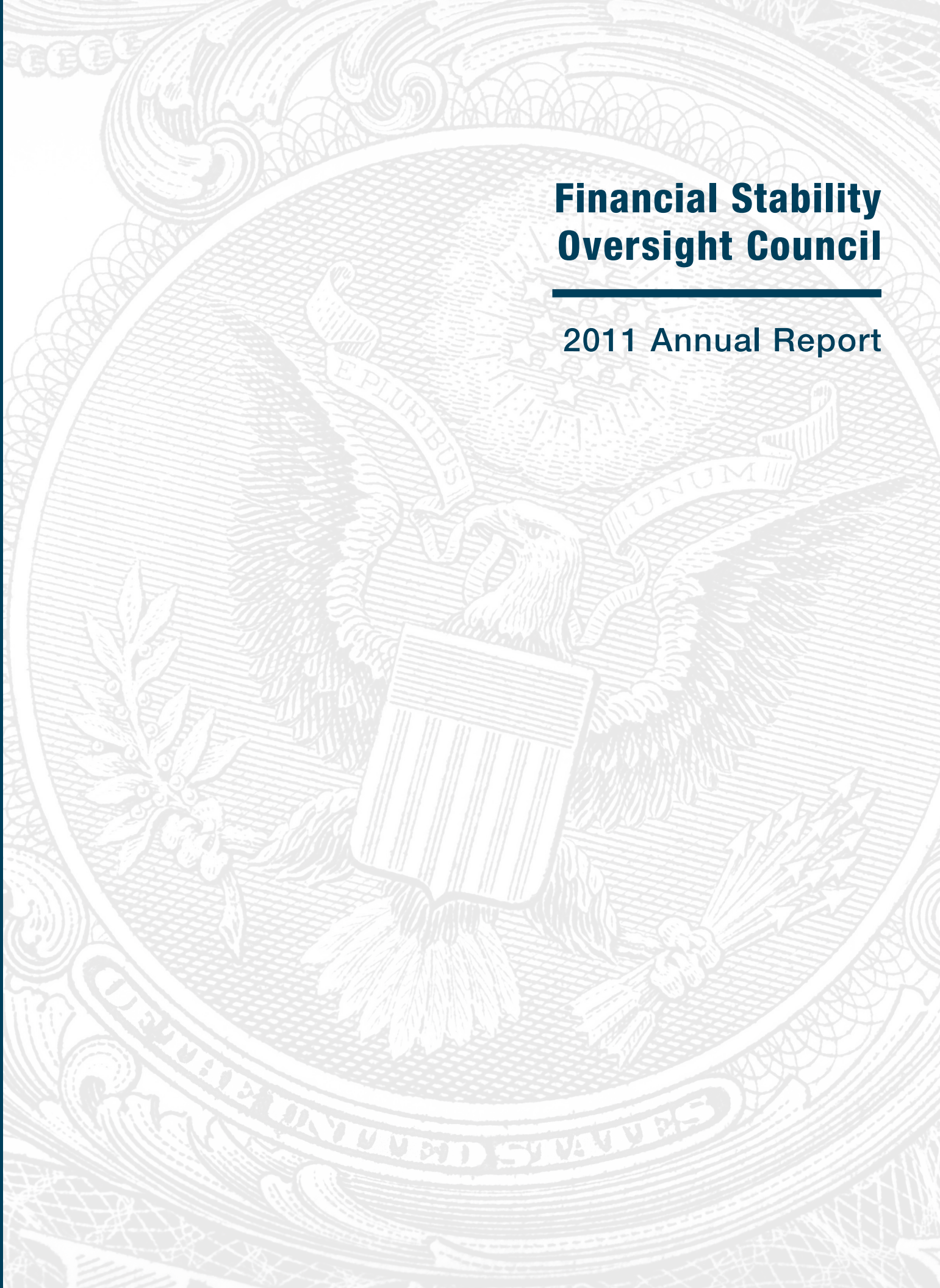
Financial Stability Oversight Council

2011 Annual Report



Financial Stability Oversight Council

The Financial Stability Oversight Council (Council) was established by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) and is charged with three primary purposes:

1. To identify risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected bank holding companies or nonbank financial companies, or that could arise outside the financial services marketplace.
2. To promote market discipline, by eliminating expectations on the part of shareholders, creditors, and counterparties of such companies that the U.S. government will shield them from losses in the event of failure.
3. To respond to emerging threats to the stability of the U.S. financial system.

Pursuant to the Dodd-Frank Act, the Council consists of 10 voting members and 5 nonvoting members and brings together the expertise of federal financial regulators, state regulators, and an insurance expert appointed by the President.

The voting members are:

- the Secretary of the Treasury, who serves as the Chairperson of the Council;
- the Chairman of the Board of Governors of the Federal Reserve System;
- the Comptroller of the Currency;
- the Director of the Bureau of Consumer Financial Protection;
- the Chairman of the Securities and Exchange Commission;
- the Chairperson of the Federal Deposit Insurance Corporation;
- the Chairperson of the Commodity Futures Trading Commission;
- the Director of the Federal Housing Finance Agency;
- the Chairman of the National Credit Union Administration Board; and
- an independent member with insurance expertise who is appointed by the President and confirmed by the Senate for a six-year term.

The nonvoting members, who serve in an advisory capacity, are:

- the Director of the Office of Financial Research;
- the Director of the Federal Insurance Office;
- a state insurance commissioner designated by the state insurance commissioners;
- a state banking supervisor designated by the state banking supervisors; and
- a state securities commissioner (or officer performing like functions) designated by the state securities commissioners.

The state insurance commissioner, state banking supervisor, and state securities commissioner serve two-year terms.

Statutory Requirements for the Annual Report

Section 112(a)(2)(N) of the Dodd-Frank Act requires that the Annual Report address the following:

(i) the activities of the Council;

(ii) significant financial market and regulatory developments, including insurance and accounting regulations and standards, along with assessment of those developments on the stability of the financial system;

(iii) potential emerging threats to the financial stability of the United States;

(iv) all determinations made under § 113 or title VIII, and the basis for such determinations;

(v) all recommendations made under § 119 and the result of such recommendations; and

(vi) recommendations—

(I) to enhance the integrity, efficiency, competitiveness, and stability of United States financial markets;

(II) to promote market discipline; and

(III) to maintain investor confidence.

Approval of the Annual Report

This Annual Report was approved unanimously by the voting members of the Council on July 22, 2011.

Abbreviations for Federal Member Agencies of the Council

- Department of the Treasury (Treasury)
- Board of Governors of the Federal Reserve System (Federal Reserve)
- Comptroller of the Currency (OCC)
- Bureau of Consumer Financial Protection (CFPB)
- Securities and Exchange Commission (SEC)
- Federal Deposit Insurance Corporation (FDIC)
- Commodity Futures Trading Commission (CFTC)
- Federal Housing Finance Agency (FHFA)
- National Credit Union Administration Board (NCUA)
- Office of Financial Research (OFR)
- Federal Insurance Office (FIO)

Letter from the Chair

The institutions, markets, and infrastructure that make up the U.S. financial system provide essential services to the U.S. and global economies—helping to allocate funds from savers to borrowers, allowing households and businesses to plan for the future and manage their risks over time, and facilitating the enormous volume of financial transactions necessary to support real economic activity and employment on a daily basis.

Three years after the worst financial crisis in generations, our financial system is now on more solid ground, less prone to excessive leverage and risk-taking, more transparent to investors, creditors, and regulators, and more resilient to unexpected adverse events. Financial institutions hold substantially more capital relative to risk than they did before the crisis and fund themselves more conservatively. We have withdrawn most of the emergency actions we took to resolve the crisis and recovered most of the investments we made to stabilize the financial system.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) made important and fundamental changes to the structure of the U.S. financial system to strengthen safeguards for consumers and investors and to provide better tools for limiting risk in the major financial institutions and the financial markets. The core elements of the law were designed to build a stronger, more resilient financial system—less vulnerable to crisis, more efficient in allocating financial resources, and less vulnerable to fraud and abuse.

- **Tougher constraints on excessive risk taking and leverage across the financial system.** To lower the risk of failure of large financial institutions and reduce the damage to the broader economy of such failures, the Dodd-Frank Act provided authority for regulators to impose more conservative limits on risk that could threaten the stability of the financial system.
- **Stronger consumer protection.** The Dodd-Frank Act created the Bureau of Consumer Financial Protection to concentrate authority and accountability for consumer protection in a single federal agency, with the ability to enforce protections on banks as well as other types of firms involved in the business of consumer finance.
- **Comprehensive oversight of derivatives.** The Dodd-Frank Act created a new regulatory framework for the over-the-counter derivatives market to increase oversight, transparency, and stability in this previously unregulated area.
- **Transparency and market integrity.** The Dodd-Frank Act included a number of measures that increase disclosure and transparency of financial markets, including new reporting rules for hedge funds, trade repositories to collect information on derivatives markets, and improved disclosures on asset-backed securities.
- **Orderly liquidation authority.** The Dodd-Frank Act created a new orderly liquidation authority to break up and wind down a failing financial firm in a manner that protects taxpayers and the economy.

- **Accountability for stability and oversight across the financial system.** The Dodd-Frank Act established the Financial Stability Oversight Council (Council) to coordinate across agencies in monitoring risks and emerging threats to U.S. financial stability, and the Office of Financial Research to improve data quality and facilitate access to and analysis of data for the Council and its member agencies.

The Council will play an important role in implementing and overseeing these reforms and mitigating current and potential future threats to financial stability.

In our regulatory framework, a significant number of independent agencies are responsible for specific aspects of the challenge of promoting financial stability, including overseeing the safety and soundness of banking organizations, safeguarding the stability of financial infrastructure, promoting disclosure and market integrity, and protecting investors and consumers against abuse. Each of these individual responsibilities is critical to a stable and well-functioning financial system, but as the crisis demonstrated, threats to financial stability are often manifested across a range of markets and institutions and may not always be effectively mitigated by any one agency alone.

The Dodd-Frank Act established the Council to create joint accountability for identifying and mitigating potential threats to the stability of the financial system. By creating the Council, Congress recognized that financial stability will require the collective engagement of the entire financial regulatory community.

This is an inherently difficult exercise. No financial crisis emerges in exactly the same way as its predecessors, and the most significant future threats will often be the ones that are hardest to diagnose and preempt. Aspects of the financial system that appear to make markets more liquid and financial institutions more prosperous in normal times may be the same ones that make the world more dangerous in crisis. Actions taken to preemptively mitigate threats may appear at the time to be more dangerous than the problems they are designed to address.

We cannot predict the precise threats that may face the financial system. The best way to prepare for this uncertainty is to continue to build the shock absorbers and safeguards that improve the resilience of the financial system. We need to recognize that policy and regulation will often be behind the curve of innovation, and we must meet assumptions of ongoing stability with a heavy dose of skepticism. Our best plan is to plan for constant change and the potential for instability, and to recognize that the threats will constantly be changing in ways we cannot predict or fully understand.

Reducing threats to financial stability will require persistence, creativity, and a willingness to adapt more quickly to changes in markets. We must work to ensure that the regulatory framework keeps pace with the evolving global financial system. We cannot wait until we have passed the point of no return to strengthen safeguards against the type of race to the bottom in credit terms or underwriting standards that often characterizes periods of financial expansion. We need to be willing to act prudently and preemptively in the face of emerging vulnerabilities or imbalances.

This task will be made easier if we are able to better marshal the power of market discipline. Financial market participants and investors should no longer operate with the expectation that government assistance will be available to save the stakeholders in financial institutions from the consequences of their own mistakes. And the regulatory community needs to continue to work hard to improve the information available to investors and the public about the nature and magnitude of the risks individual institutions are taking.

The challenge of maintaining a stable financial system is exacerbated by the difficulty of balancing the benefits of regulation against the costs of excessively restraining prudent risk-taking behavior. If we were to set the overall combination of margin, liquidity, and capital requirements too high, we could handicap the ability of the financial system to support economic growth. Further, financial activity would inevitably move more quickly to firms, markets, and countries where the intensity of regulation is weaker. So we need to continue to strive for a careful balance between the imperatives of creating a more stable system and promoting a level of innovation and dynamism.

Measures of risk in the financial system before the crisis provided little warning of the force of the storm to come. Many of the standard observable measures of risk were very low; indeed the real warning sign was that neither credit ratings nor the pricing of a range of financial products showed any expectation of the fragility of the global financial system to a fall in U.S. house prices.

This should make us all humble about our ability to make judgments about the future, even as we strive to acquire better data and quantitative metrics. Nonetheless, there is a strong case for improving the quality of information available to the public, supervisors, and regulators about risks in financial institutions and markets. With our new authorities, we are working to build a broader set of quantitative metrics to assess not just what is happening in individual institutions and markets, but throughout the whole system.

The information we collect and the analysis we undertake will allow us to measure more accurately the nature of risk in individual firms and across the system, but it must be complemented with a forward-looking perspective that analyzes evolving market practices and activities and tests the resilience of the financial system to a wide set of future events. This perspective requires careful assessments of the relative likelihood of a range of potential outcomes, including assessing the potential impact on the functioning of the financial system and understanding where reforms to markets, firms, and infrastructure may mitigate threats. And it requires an ongoing focus on incentives within the financial system that might create or exacerbate vulnerabilities.

Working through the Council, we will focus our efforts in four distinct areas:

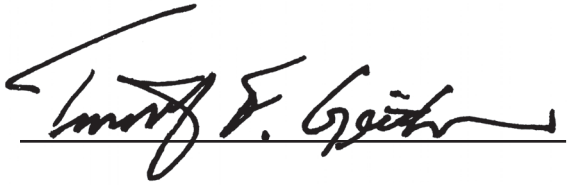
- **The ongoing interaction between the financial system and the economy.** We need to continue to strengthen our analysis of the interactions between the financial system and the economy, including the impact that financial sector decisions have on the economy. We also need to better assess how potential external shocks could be amplified by structural weaknesses and imbalances in the financial system. Stress testing is an important tool in making such assessments. It is also important to develop techniques that give us the ability to analyze the destabilizing second-round effects of shocks across financial institutions and markets. While it is impossible for stress tests to capture all potential threats, the discipline of repeatedly stressing institutions and networks against low-likelihood adverse scenarios will help temper overly optimistic assumptions that might otherwise lead to harmful behaviors and outcomes.
- **The buildup of systemwide leverage and funding mismatches.** It is crucial to complement the evaluation of the safety and soundness of individual institutions with an assessment of leverage in the financial system and imbalances between funding and assets across the financial industry. It is hard to detect vulnerabilities that can build in the interconnections between firms and markets. Thus, we need to work to ensure that the capital buffers and liquidity safeguards available to the system are sufficient.

- **The ongoing evolution of financial market activity and practices.** We will need to be attentive to the implications of very rapid growth in types of financial activity and new products. This is true in consumer product innovation, but also in the institutional markets where large institutions and firms interact. Innovation is an essential element of a healthy system, but rapid growth in products and activities untested by time and adversity necessarily entails challenges and requires more care and attention.
- **The potential opportunities for regulatory arbitrage.** Where the opportunity and incentive exist to avoid regulation and supervision, financial activity will migrate to areas of the system where there are gaps in authority or inconsistencies in regulatory standards. A substantial buildup in risk and leverage outside the regulated core of the financial system can increase threats to the system as a whole. We must also work to eliminate meaningful opportunities for arbitrage between countries, particularly in the key areas of capital and liquidity, derivatives, and resolution authority.

A stable financial system cannot be maintained by regulation and oversight alone. Those in positions of leadership in the financial sector will need to establish and maintain much higher standards for integrity and a more sophisticated understanding of the risk inherent in the business of finance than prevailed before and during this crisis.

This will require continued improvements in management structure and corporate governance practices. Compensation must be structured to create better incentives for robust risk management. Risk management officers in financial firms need to have a strong voice in decision making. Boards of directors need to actively engage with management and represent stakeholder interests by ensuring an appropriately long horizon and a broad perspective in making strategic choices. With improved disclosure and transparency, firms that take this long-term perspective should prosper in the long run, while those that do not will face higher funding costs and less indulgent investors.

In this first annual report, we describe the current state of the U.S. financial system and some of the major forces that will shape its development going forward. The Council and its members will continue to implement the Dodd-Frank Act on a coordinated basis to enhance the integrity, efficiency, transparency, competitiveness, and stability of U.S. financial markets. The report also includes recommendations for additional steps that should be taken to complement these efforts and further strengthen the financial system.



Timothy F. Geithner

Secretary of the Treasury
Chairperson, Financial Stability Oversight Council

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The Honorable John A. Boehner
Speaker of the House
United States House of Representatives

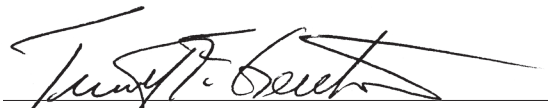
The Honorable Nancy Pelosi
Democratic Leader
United States House of Representatives

The Honorable Mitch McConnell
Republican Leader
United States Senate

The Honorable Joseph R. Biden, Jr.
President of the Senate
United States Senate

The Honorable Harry Reid
Majority Leader
United States Senate

In accordance with Section 112(b)(2) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, for the reasons outlined in the annual report, I believe that additional actions, as described below, should be taken to ensure that the Council, the Government, and the private sector are taking all reasonable steps to help ensure financial stability and to mitigate systemic risk that would negatively affect the economy: the issues and recommendations set forth in the Council's annual report should be fully addressed; the Council should continue to build its systems and processes for monitoring and responding to emerging threats to the stability of the United States financial system, including those described in the Council's annual report; the Council and its member agencies should continue to implement the laws they administer, including those established by, and as amended by, the Dodd-Frank Act through efficient and effective measures; and the Council and its member agencies should exercise their respective authorities for oversight of financial firms and markets so that the private sector employs sound financial risk management practices to mitigate potential risks to the financial stability of the United States.

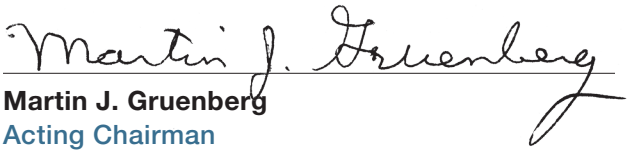


Timothy F. Geithner
Secretary of the Treasury
Chairperson, Financial Stability Oversight Council

Ben S. Bernanke
Chairman
Board of Governors of the Federal Reserve System

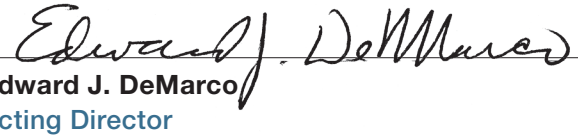
John Walsh
Acting Comptroller of the Currency
Office of the Comptroller of the Currency

Mary L. Schapiro
Chairman
Securities & Exchange Commission

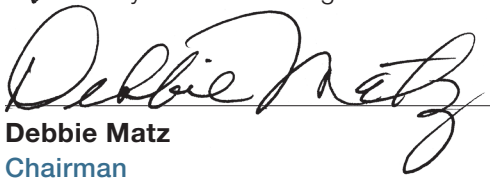


Martin J. Gruenberg
Acting Chairman
Federal Deposit Insurance Corporation

Gary Gensler
Chairman
Commodity Futures Trading Commission



Edward J. DeMarco
Acting Director
Federal Housing Finance Agency



Debbie Matz
Chairman
National Credit Union Administration

2 Executive Summary

The efficient provision of financial services is critical to the nation's economic growth and prosperity. A stable financial system can continue to provide financial services while absorbing a range of shocks. A stable financial system should not be the source of, nor amplify the impact of, shocks.

The Financial Stability Oversight Council is charged with identifying risks to the financial stability of the United States, promoting market discipline, and responding to emerging threats. Council members have many tools at their disposal to accomplish these goals, owing to their involvement in supervision and regulation, consumer and investor protection, and market and infrastructure oversight.

Macroeconomic Environment

The U.S. economy continues to heal from the 2007–09 recession (the longest since the Great Depression). Consumer spending and business investment have increased, but housing markets remain depressed and the unemployment rate is elevated. The global economy is also recovering, albeit at varying rates across advanced and emerging economies.

The financial crisis produced great upheaval in the U.S. financial sector, but the impact on the economy was even more devastating. At the height of the crisis, credit conditions tightened for households and businesses, as well as for financial firms of all sizes, reflecting severe disruptions to a range of financial markets that proved far more damaging than the disruptions from the initial credit losses themselves.

Credit conditions have improved significantly from the depths of the crisis. Recently, credit flows have shown signs of recovery, with large corporate borrowers facing favorable financing conditions and households experiencing an increase in credit. Corporate balance sheets deteriorated significantly during the crisis, primarily as a result of falling asset values, but they have recovered since mid-2009 as cash flows and profits have increased. Corporate bond markets have also recovered for both investment-grade and non investment-grade issuers. The outlook is more challenging for small businesses, which tend to borrow against real estate assets. They report weak demand for their products and services, as well as borrowing constraints, although the number of small businesses reporting difficulties obtaining credit has declined since the crisis.

Nonmortgage lending to consumers has grown recently after declining for several years. Household balance sheets are recovering, partly because of the rebound in stock prices, but they remain challenged by the weak labor market, slow income growth, and declines in real estate values. As a result of the fall in home values, a significant number of homeowners now have low or negative equity in their properties, and record numbers of homes have entered the foreclosure process. However, low interest rates have helped mitigate some of the costs of mortgage debt and, in the aggregate, households' ability to meet debt payments has improved since 2007.

Government budgets, both federal and nonfederal, have been strained by the cyclical response of revenues and expenditures to a weak economy as well as the fiscal actions taken to ease the recession and aid the recovery. The federal government deficit grew from 1.2 percent of GDP in 2007 to 8.9 percent in 2010, and net publicly held federal debt outstanding rose from $5 trillion to $9 trillion. This public borrowing largely replaced private borrowing in the credit markets, and global financial markets readily accommodated the increase in federal debt. Even after economic conditions return to normal, the federal government faces a long-run imbalance between revenues and expenditures. This need for long-run fiscal sustainability has been a focus of recent attention from credit rating agencies. Achieving long-run sustainability of the national budget is crucial to maintaining global market confidence in U.S. Treasury securities and the financial stability of the United States.

State and local government revenues were severely affected by the economic downturn. While state finances started to improve in the second half of 2010, several quarters into the economic recovery, local governments remain challenged. The municipal debt market exhibited evidence of considerable stress last year.

Sovereign and banking sector strains are evident among a number of advanced economies. Three countries in the European Monetary Union have required financial assistance as markets have priced elevated sovereign credit risk into their debt. The relatively new phenomenon of differentiated compensation for sovereign credit risk in advanced countries has added to volatility in global markets. It has also exposed tensions within the European Monetary Union and limitations in the pre-crisis set of tools available to European policymakers to respond to economic and financial stress.

In contrast, most emerging economies have recovered relatively quickly from the crisis, partly because of their lack of financial imbalances before the financial crisis. However, emerging economies face challenges from robust capital inflows and the potential for overheating. Recent instability in North Africa and the Middle East and the natural disaster in Japan have added to uncertainty in the international environment.

Financial Developments

At the peak of the financial crisis, the U.S. government introduced unprecedented support for financial markets, injecting hundreds of billions of dollars of capital and liquidity into the financial sector. As market confidence has returned, private funding has gradually replaced those support programs: many financial institutions have returned the government's capital; the Federal Reserve is no longer offering extraordinary liquidity support to financial markets; and the FDIC guarantees for bank senior debt will expire in 2012.

Funding has not returned to the private securitized mortgage market, which financed a significant portion of household borrowing in the first decade of the 2000s. In the past, the government's role encouraged housing purchases and real estate investment over other sectors and ultimately left taxpayers responsible for much of the risk incurred by a poorly supervised housing market. This led to the two large government-sponsored enterprises, Fannie Mae and Freddie Mac, being placed into federal conservatorship. These entities and the Federal Housing Administration now dominate mortgage lending, guaranteeing or insuring over 90 percent of mortgage loan originations. This is not a viable long-term solution, but, given the current fragility of the real estate market, the transition back to more private involvement will require time and care.

Profitability has returned in the banking sector and for many other financial institutions. Investors purchased large amounts of new equity in the largest bank holding companies in 2009 and 2010, partly responding to the results of the 2009 supervisory-run stress test. U.S. banking institutions now have substantially stronger capital and liquidity buffers than before the crisis. However, smaller banks, particularly those with large commercial real estate exposures, have not recovered as quickly as larger banks and have continued to fail at elevated rates. At the same time, in taking prudent measures to conserve their capital and liquidity, many banks have been slow to expand their direct lending activity since the financial crisis.

Assets have grown at insured depository institutions relative to other financial institutions since the crisis, following a long period in which financial activities moved from banks to markets. In particular, money market fund assets declined as investors transferred significant funds into insured bank deposits during the crisis. At the same time, the crisis reinforced the trend toward concentration and globalization in the banking industry, and foreign banking organizations have expanded their activities in the United States in recent years.

The financial system is less leveraged than it was before the crisis. Four of the five largest independent investment banks, all highly leveraged institutions, were acquired by or converted their charters to become bank holding companies in 2008, and the fifth failed. The specialty finance sector, which also relied heavily on market financing, is now

smaller and more stable. Several of the largest companies in the specialty finance sector also became bank holding companies during the crisis to expand their funding options. These and other companies have reduced their leverage significantly below the levels before the crisis.

Short-term wholesale funding markets provide liquidity for financial institutions to support their activities, but the financial crisis showed that these markets can be fragile and subject to runs by risk-averse investors. In response to unprecedented strains in these markets, the Federal Reserve, the FDIC, and the Treasury took extraordinary steps to support market functioning. The crisis also revealed, in particular after the freezing of Lehman Brothers' prime brokerage assets in London, that differences in international bankruptcy regimes can accelerate runs on short-term wholesale funding markets. Activity in several of these markets remains significantly below pre-crisis levels, as investors and supervisors have a new sensitivity to potential liquidity risks and other risks.

The credit risk transfer markets that contributed to the financial crisis—specifically, those for credit default swaps and collateralized debt obligations—are now significantly smaller, partly owing to new regulatory and accounting rules. Derivatives markets generally will be subject to greater supervisory oversight under the Dodd-Frank Act.

Supervisors and market participants are more aware of the potential for extreme market fluctuations in the future and the need to maintain a stronger set of shock absorbers in individual institutions and in markets to absorb the impact of such events. These issues are particularly relevant when market participants are highly leveraged or when derivatives or other complex instruments are involved.

In general, the pricing of risk in important markets appears to be in line with historical averages. For example, the price-to-earnings ratios for corporate equities are well within historical ranges, and the credit risk premium on high-yield corporate debt is in the lower part of its long-run historical range. Prices for commodities and agricultural land have risen strongly but do not appear to be associated with high debt levels.

Compensation practices that incented financial institution employees to take excessive risks are widely acknowledged to have been a contributing factor in the financial crisis. Under pressure from regulators and investors, financial institutions are reforming their compensation practices to better align the interests of managers, traders, and other employees with the long-term health of the firm, although more needs to be done.

Following the rebound in equity markets, aggregate assets in mutual funds and hedge funds have recovered to pre-crisis levels. Assets in defined contribution plans have also recovered, although many

pension plans for state and local government employees appear to face funding shortfalls over the long run. Investors have increasingly turned to exchange traded funds, which offer low fees and intraday liquidity.

Regulatory reforms and advances in technology have altered the landscape for financial infrastructure, providing financial markets with advances in efficiency and transparency. While this infrastructure and the markets that it supports have generally performed their primary functions in an orderly fashion during and since the crisis, there were exceptions. One was the so-called flash crash of May 2010, when equities and equity futures markets plunged more than 5 percent and then rebounded in a matter of minutes. This incident illustrates some of the risks associated with increasingly complex and connected financial markets interacting with ever-faster automated trading systems. Poor functioning in mortgage servicing and the tri-party repo market were also identified during the crisis, and regulators are taking steps to address them.

Progress of Regulatory Reform

In the period after the financial crisis, the legal, regulatory, and accounting framework of our financial system has changed significantly. The Dodd-Frank Act, which created the Council, closed gaps in the financial regulatory framework and strengthened supervisory, risk management, and disclosure standards in important ways. The new Basel III international standards for banks, negotiated with major input from U.S. regulators, will require banks globally to hold more capital, particularly when they take market risk, and will subject banks to a liquidity standard for the first time, and new accounting rules will serve to limit financial institutions' off-balance-sheet activities.

For the first time, information on trading in swaps will be available through trade repositories. In addition, standardized derivatives will have to be traded on regulated trading platforms and centrally cleared, improving price transparency and reducing counterparty credit risk for market participants. Once regulators complete the implementation of the Dodd-Frank Act, the mix of complex structured credit products, derivatives, and short-term wholesale funding that helped produce the financial crisis is unlikely to reappear in its previous form.

U.S. regulators continue to work out the details of several important initiatives, including those mandated by the Dodd-Frank Act and those agreed to with their international counterparts. For example, the Council has defined the characteristics under which it will designate systemically important financial market utilities for enhanced supervision. The Council is also in the process of defining the characteristics under which it will designate nonbank financial institutions for Federal Reserve supervision, and the Federal Reserve, in consultation with other Council member agencies, is establishing tougher supervisory guidelines for large financial institutions. Regulators are also developing new reporting and disclosure requirements for designated nonbank financial companies.

The Dodd-Frank Act also established a new framework for resolving large complex financial institutions, limiting the expectation that the government will bail out such institutions in a crisis. As part of the enhanced supervisory standards, designated nonbank companies and large bank holding companies will be required to maintain detailed resolution plans. Until the Dodd-Frank Act is fully implemented, the public will not receive the full set of protections provided by the improved regulatory system. In addition, to maximize all the benefits of the new regulatory framework, it is imperative that relevant regulatory agencies be funded at levels consistent with their expanded missions.

Regulators are also working with their international counterparts to promote consistency in global regulatory reform, particularly with regard to implementing the new Basel III capital and liquidity standards; strengthening the supervision of, designing capital surcharges for, and developing a framework for the resolution of large, globally active financial institutions; promoting harmonization for the oversight of derivatives markets; and regulating global financial infrastructures.

Potential Emerging Threats to U.S. Financial Stability

Assessing future threats to financial stability will require attention to the broad forces driving the evolution of the financial system, which determine the profit opportunities available to market participants and financial institutions along with the risks they take. In addition to these long-run challenges to maintaining financial stability, a number of possible shocks and vulnerabilities could produce more immediate threats to U.S. financial stability.

Globalization and technological innovation are among the most important forces that could affect future financial stability. While the rise of international banking and the important role of foreign banks in U.S. financial markets allow risks to be transferred more broadly across the global economy, they also increase the links across economies and add to the complexity of the financial system. Global interconnectedness is heightened by the role of the U.S. dollar as the international reserve currency and the funding needs of large foreign firms that hold U.S. dollar-denominated assets.

Financial product innovation and growth is crucial to support a vibrant economy, but at times it can result in dramatic changes in business models and can introduce increased complexity, thereby altering the evolution of linkages among firms. Three such products examined in the report are exchange traded funds, structured notes, and collateralized commercial paper. While the level of activity in these products in the United States is not high enough to represent a threat, the level of activity abroad and the links to derivatives have led regulators in other countries to focus special attention on them.

The functioning of the U.S. financial system has proven resilient to the impact of a number of recent shocks, such as the natural disaster in Japan and the fluctuating concerns over European sovereign debt.

Further, increases in trading volumes and enhanced market liquidity have been fostered, in part, by the increasing use of electronic trading. This liquidity can evaporate in stressed environments, as the flash crash demonstrated. New technology has helped strengthen the resilience of payment systems, data repositories, and other financial infrastructure. This has given firms the tools to handle increasingly intricate transactions, including transactions in short-term wholesale funding markets that can provide hundreds of billions of dollars overnight to cover daily funding needs. Operational risk events, along with recent high-profile cyberattacks, are important reminders that both regulators and firms need to continuously upgrade the resilience of their electronic systems and networks.

There is significant market uncertainty in Europe, notably associated with the sovereign credit risk of Greece, Ireland, and Portugal. U.S. financial institutions have very limited net direct exposure to these three countries. They have larger exposure and important ties to major financial institutions elsewhere in Europe that in turn have large exposures to Greece, Ireland, and Portugal.

Some major European banks obtain substantial short-term wholesale U.S. dollar funding from U.S. money market funds. Further, money market funds remain an important supplier of cash to the tri-party repo market. Structural vulnerabilities in money market funds and tri-party repo amplified a number of shocks in the financial crisis. Reforms undertaken since the crisis have improved resilience, and money market funds report de minimis exposure to Greece, Ireland, and Portugal; however, amplification of a shock through these channels is still possible.

The impact on the U.S. financial system of events in Europe depends on how the peripheral European sovereign debt crisis evolves and on the resilience of U.S. financial institutions and markets. If the crisis, now affecting Greece, Ireland, and Portugal, were to intensify significantly or spread more broadly across the euro area, then the impact on the U.S. financial system would be greater. Supervisors have for some time been working with U.S. financial institutions to improve their ability to withstand a variety of possible financial contagion stress scenarios emanating from Europe. The Council and its member agencies will continue to carefully monitor the potential risks that could emerge from the peripheral European sovereign debt crisis.

Real estate-related exposures remain a significant risk for many U.S. financial institutions. However, the improvement in capital across the financial system provides an important buffer against further declines in real estate prices and larger losses; this makes it less likely that U.S. financial institutions will have to reduce assets or reduce growth in lending in response to a more prolonged period of weakness in the housing market or in the U.S. economy more generally. On the other hand, the transition path back to a greater role for private capital in the housing finance system remains uncertain.

The weakness of the current recovery has delayed monetary policy normalization and exacerbated the unsustainable fiscal trajectory in the United States. Despite the sustained low interest rate environment, there is limited evidence of major U.S. market participants "reaching for yield." One possible exception has been in some of the activity in the markets for non investment-grade bonds and loans.

Both monetary policy normalization and fiscal consolidation will have important consequences for the business models of many financial firms that are currently funding large holdings of government securities and reserves at the Federal Reserve with low-cost deposits. Uncertainty over the pace of monetary policy normalization and fiscal consolidation has the potential to generate shocks; however, with appropriate planning and risk diversification, the financial market impact of such shocks should be absorbed without affecting the functions of the system.

The capital and liquidity of the largest U.S. financial institutions have improved substantially. However, many large U.S. financial institutions currently receive the highest credit rating for short-term funding partly because of a presumption of possible government support in stressed conditions. Further, the Federal Reserve, in its Comprehensive Capital Analysis and Review, found a number of weaknesses in the capital planning processes at many large banking institutions. These factors highlight some of the challenges still ahead in building a stronger financial system.

The recent financial crisis provides a stark illustration of how quickly confidence can erode and financial contagion can spread, as well as how challenging and expensive it is to repair the damage. This lesson is important to bear in mind in the current debate over the increase in the federal government's debt limit. It is vital to the stability of the U.S. financial system and the global financial system for the debt limit to be raised in a timely manner to avoid creating any risk of default on U.S. obligations.

3 Annual Report Recommendations

The Dodd-Frank Act requires the Council to make annual recommendations to (1) enhance the integrity, efficiency, competitiveness, and stability of U.S. financial markets; (2) promote market discipline; and (3) maintain investor confidence. The Council fulfills this requirement by recommending (1) heightened risk management and supervisory attention in specific areas; (2) further reforms to address structural vulnerabilities in key markets; (3) steps to address reform of the housing finance market; and (4) coordination on financial regulatory reform.

The Council recommendations work together to balance the stated requirements of integrity, efficiency, competition, market discipline, and investor confidence, while maintaining financial stability. For instance, recommendations to improve capital and liquidity planning, address vulnerabilities in the money market fund and tri-party repo markets, and coordinate implementation of the Dodd-Frank Act will improve the stability of the financial system. To promote market discipline, the Council recommends responsible credit underwriting standards; housing finance reforms, including mortgage servicing standards and servicer compensation; and effective implementation of orderly liquidation authority for the largest financial firms. To maintain investor confidence, the Council also recommends that market participants keep pace with infrastructure and technological advances and conduct heightened due diligence on emerging financial products. Collectively, the Council recommendations address the identified vulnerabilities in the system and emerging threats to financial stability. Regulatory agencies and market participants should take these steps to enhance the resilience and integrity of the system. The discussion below outlines the Council recommendations and their fulfillment of the Council's statutory mandate.

I. Heightened Risk Management and Supervisory Attention

In the following areas, market participants should employ heightened risk management, and Council member agencies should enhance ongoing supervisory attention to determine whether any of these market dynamics rises to a level that merits a regulatory response.

- **Construct robust capital, liquidity, and resolution plans.** To support stability in the financial system, financial institutions should ensure that they have in place robust capital, liquidity, and resolution planning processes. The Federal Reserve's Comprehensive Capital Analysis and Review exercise found that all of the largest banking companies need to bolster their capital planning processes. The largest financial institutions must also incorporate within their planning processes contingencies for resolution that would facilitate resolvability under bankruptcy without government assistance. In addition, the largest banks

should plan further improvement in their capital levels and liquidity risk profiles to support funding models without any assumption of government assistance and their continued smooth transition to new global standards.

- **Bolster resilience to unexpected interest rate shifts.** In light of a sustained, historically low interest rate environment, market participants should work to ensure that they have robust processes for measuring and, where necessary, mitigating their exposure to a range of interest rate scenarios. Preparedness to face unexpected rate changes or yield curve shifts will enable market participants to make a stable transition to a new rate environment, minimizing potential disruption to the system.
- **Maintain discipline in credit underwriting standards.** Although it is difficult to make definitive determinations regarding the appropriateness of risk pricing, there have been some indicators that credit underwriting standards might have overly eased in certain products, such as leveraged loans, reflecting the dynamics of competition among arranging bankers. Greater market discipline can be supported through robust due diligence practices and processes for monitoring and responding to developments in credit underwriting standards, including deal features that may allow borrowers to take on excessive risk. Sound underwriting standards, which were abandoned in the run-up to the crisis, will encourage greater investor confidence and stability in the market.
- **Employ appropriate due diligence for emerging financial products.** Council agencies are highly attentive to the emergence and growth of financial products, particularly those that may be designed to arbitrage new capital and accounting standards by moving financial activities outside the regulated core. A robust financial system should facilitate innovation. Market participants, as issuers or investors, should work to ensure that they have an adequate understanding of the risks that products such as exchange traded funds and structured notes present, including impacts under strained market conditions.
- **Keep pace with competitive, technological, and regulatory market structure developments.** Equity trading markets in the United States have experienced changes in market structure over the past several years, including an expansion of the number of trading venues and the rise of electronic trading. The flash crash of May 6, 2010 demonstrated that regulators and market participants should continue to monitor these changes and take action as necessary to help ensure that the market structure regulatory framework and operational policies keep pace with changes to trading and other market practices. Regulators and market participants should also continue to foster investor confidence by promoting market integrity, efficiency, and competition.

II. Additional Reforms to Address Structural Vulnerabilities

Financial systems are vulnerable to shocks that can be exacerbated by weaknesses in the structure of financial institutions, markets, and infrastructure.

The Council recommends reforms to address structural vulnerabilities in the tri-party repo market, for money market mutual funds, and in mortgage servicing:

- **Elimination of most intraday credit exposure and reform of collateral practices in the tri-party repo market to strengthen the market.** Given the vital importance and size of tri-party repo financing and the broad array of financial institutions active in this market, the regulatory community should exert its supervisory authority over the industry's reform efforts to ensure that the Tri-Party Repo Infrastructure Reform Task Force meets its commitments as promptly as possible. The Task Force's efforts should ultimately improve market functioning, but several important structural reform issues require coordinated supervisory and regulatory attention. Chief among these priorities are enhancing dealer liquidity risk management practices, alleviating the propensity of cash investors to withdraw funding and exit the market when risk surfaces, and implementing mechanisms to manage a potential dealer default. The fragility of broader market liquidity facilities and the constraints on the types of collateral that certain investors are prepared to take (particularly money market funds) heightens the risk of contagion in the market. Reform efforts should practically eliminate intraday credit exposures of clearing banks to borrowers and strengthen collateral management practices to improve the stability of this critical short-term funding market.
- **Implement structural reforms to mitigate run risk in money market funds.** When the SEC adopted new rules for money market funds (MMFs) in February 2010, it noted that a number of features still make MMFs susceptible to runs and should be addressed to mitigate vulnerabilities in this market. To increase stability, market discipline, and investor confidence in the MMF market by improving the market's functioning and resilience, the Council should examine, and the SEC should continue to pursue, further reform alternatives to reduce MMFs' susceptibility to runs, with a particular emphasis on (1) a mandatory floating net asset value (NAV), (2) capital buffers to absorb fund losses to sustain a stable NAV, and (3) deterrents to redemption, paired with capital buffers, to mitigate investor runs.
- **Improve the overall quality of mortgage servicing by establishing national mortgage servicing standards and servicer compensation reform.** The mortgage servicing industry was unprepared and poorly structured to address the rapid increase in defaults and foreclosures. To address this

structural vulnerability, regulators should establish national mortgage servicing standards and promote alternative servicer compensation models.

- National mortgage servicing standards should provide clarity to borrowers and investors, and servicers should be held to the same quality and responsiveness standards regardless of whether the loans being serviced are held on the originator's books, have been sold, or have been securitized. National standards would align incentives and provide clarity and consistency to borrowers and investors, especially in the case of delinquency. These standards will enhance the integrity and efficiency of mortgage servicing and help reestablish investor confidence in the housing finance market.
- Today, the structure of servicing compensation generally does not adjust to reflect the amount of servicing effort and expense required. This flat-fee structure does not appropriately incent servicers to invest the time and effort to work with borrowers to avoid default or foreclosure. The FHFA and the Department of Housing and Urban Development should continue to coordinate a review of the structural flaws in the current mortgage servicing compensation model and should consider alternatives.

III. Housing Finance

The U.S. housing finance system required extraordinary federal government support during the crisis. Over 90 percent of the market continues to function on the basis of this government support and without sufficient return of private capital. This dynamic is not sustainable over the long term. The Council member agencies and the Department of Housing and Urban Development should continue their work to strengthen the housing finance system, which includes developing a framework for the return of private capital to the system. The framework should include regulatory activities that set forth standards and guidelines for participants in the housing finance system, and other actions that strengthen mortgage underwriting. To give further confidence to the market and provide long-term stability to the U.S. financial system, the Council believes Congress must pass responsible legislation to reform the housing finance system. The reform efforts should not further destabilize the fragile housing market.

IV. Financial Regulatory Reform

Council member agencies are committed to implementation of financial regulatory reform. While important steps have been taken, both domestically and in the international policy arena, much work remains to be done. The agencies are approaching reform carefully, mindful of the need for sufficient public comment and the risks of unintended consequences.

Coordinated implementation of regulatory reform will enhance the integrity, efficiency, competitiveness, and stability of U.S. financial markets; promote market discipline; and maintain investor confidence by closing regulatory gaps that contributed to the crisis and previous market dislocations.

Dodd-Frank Act

The Dodd-Frank Act provides comprehensive reforms and protections across the financial regulatory system. These reforms include the creation of a regulatory framework for the over-the-counter derivatives market; investor protection measures that increase disclosure, transparency, and confidence; reporting for managers of hedge funds and other private funds; and the establishment of a single agency dedicated to ensuring consumer financial protection and the integrity of the market for consumer financial products and services. The Dodd-Frank Act also requires regulators to impose heightened prudential standards on certain large financial firms to help foster market discipline and stability, and to make clear that no firm will be considered too big to fail, by creating a new authority to break up and wind down a failing financial firm in a manner that protects taxpayers and the economy. In addition, the Dodd-Frank Act created the Council to monitor risks that could build across the system in a way that threatens the stability of the financial markets in the United States, and the OFR to collect data on the Council's behalf, working closely with supervisors.

The Council member agencies have made significant progress in implementing the many reforms that the Dodd-Frank Act requires. The Council and its member agencies recognize that successful implementation of reform across complex areas of the financial system requires independent agencies to coordinate their efforts, even if such consultation is not statutorily required. Coordination is critical to implementing reforms that not only work together in a sensible, coherent way, but also appropriately balance market efficiencies, competitiveness, and stability while providing for innovation. To meet the challenges of designing and enforcing these new rules, the quality and scale of resources dedicated to financial oversight must increase. Agencies must have sufficient resources to attract and retain talented individuals and invest in systems to monitor market activity and enforce the new rules.

International Coordination

At the September 2009 summit in Pittsburgh, the G-20 heads of state agreed that reforms were needed to build high-quality capital and mitigate pro-cyclicality in the financial system; improve compensation practices to support financial stability; reform the over-the-counter derivatives markets for greater transparency and risk management; and address cross-border resolutions and systemically important financial institutions. The implementation of the Dodd-Frank Act will accomplish many of these goals within the United States, but international coordination is required to ensure that similar reforms are applied consistently across the global financial system to mitigate regulatory gaps

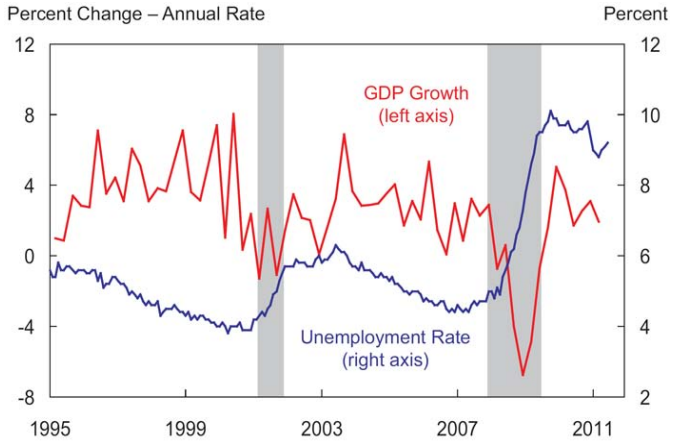
and level the playing field. Council member agencies are committed to working with their international counterparts to implement these reforms in a timely manner. Key reforms include the following:

- **Capital and liquidity standards.** In 2010, central banks and supervisors reached agreement on the core elements of new global capital and liquidity standards, Basel III. As a result of this agreement, internationally active banks will have to hold substantially more capital in the form of common equity against the risks they take. This agreement was the foundation of a comprehensive new capital framework to further stabilize global markets, but it left open several areas for further analysis, including the size and composition of additional capital requirements to impose on the largest global institutions, how to implement the new liquidity standards, and how to bring more consistency to the risk weighting of assets across countries.
- **Globally active systemically important banks.** The Financial Stability Board, a global body of finance ministers, central bankers, and supervisors, has been working to develop guidelines for cooperation in the supervision of large, globally active financial institutions, and to develop a consistent international framework for the orderly resolution of such companies. These initiatives complement Dodd-Frank Act requirements, and Council members are actively supporting efforts to promote international consistency on resolution frameworks.
- **Derivatives markets.** A core element of the international framework for reform of the over-the-counter derivatives market is a requirement for standardized derivatives to be centrally cleared. While there will continue to be bilaterally executed derivatives transactions that are not cleared, there is international agreement that non-centrally cleared derivatives should be subject to higher capital requirements. In addition, Council member agencies are committed to working with international counterparts to develop global standards for central counterparties and margin requirements for swaps and security-based swaps that are not centrally cleared. Other key elements of reform are the reporting of over-the-counter derivatives to trade data repositories and the trading of standardized over-the-counter derivatives on exchanges or electronic trading platforms. In each of these areas, Council member agencies are committed to working with international counterparts to harmonize requirements.
- **Infrastructure.** International authorities have released revised standards for financial market infrastructures that provide a single set of principles (CPSS-IOSCO Principles for financial market infrastructures) for greater consistency in the oversight and regulation of financial infrastructures worldwide, including enhanced requirements for governance and risk management practices, and new standards on transparency and general business practices. These principles should provide greater consistency in the oversight and regulation of financial infrastructures worldwide and thus enhance the integrity of markets and global investor confidence.

4 Macroeconomic Environment

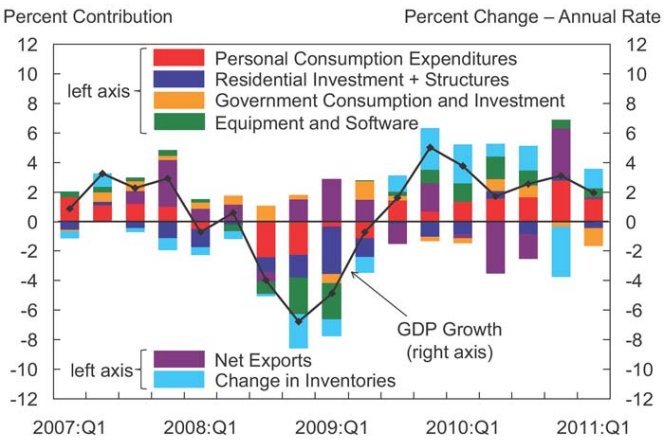
The U.S. economy expanded at a moderate pace in 2010 and early 2011. The economy is healing slowly from the lingering effects of the extraordinary financial market dislocations in 2008–09 and the severe declines in employment and output *(Chart 4.0.1)*. Businesses have increased investment, and consumers have increased spending *(Chart 4.0.2)*. However, construction and housing demand remain depressed, the unemployment rate is elevated, and the gains in total employment have been insufficient to raise the employment-population ratio.

Chart 4.0.1 Real GDP Growth and the Unemployment Rate



Source: BLS and BEA

Chart 4.0.2 Real GDP Growth and Its Components

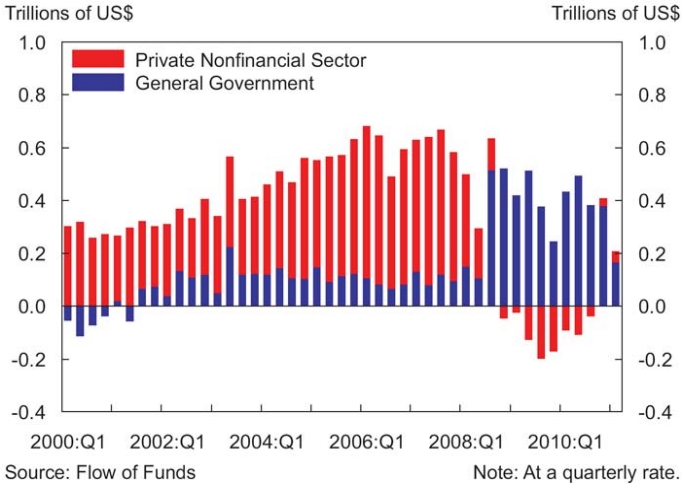


Source: BEA

Most foreign economies also continue to recover from the most severe global downturn since the Great Depression, albeit at differing paces. Emerging economies, which suffered fewer financial disruptions from the crisis, have been able to recover more quickly, and many of those economies have returned to or exceeded their previous trend growth rate. Recovery in the advanced economies has been slowed by the weakness of the financial sector, and many have not yet reached their pre-crisis level of economic activity. With interest rates in advanced economies at historically low levels to support economic growth, funds have flowed to emerging markets, where returns are relatively higher. Political tensions in North Africa and the Middle East, and the natural disaster in Japan added to uncertainty in the first half of 2011.

The recession depressed tax revenues and required additional public sector spending, leading to substantial increases in government debt in many advanced economies ***(Charts 4.0.3*** and ***4.0.4)***. For the most part, financial markets have been able to smoothly accommodate elevated government borrowing, as private savers have increased their demand for government debt. However, certain governments and financial institutions in peripheral Europe have encountered severe difficulties in maintaining access to private financial market funding. As the global economy continues to recover, governments

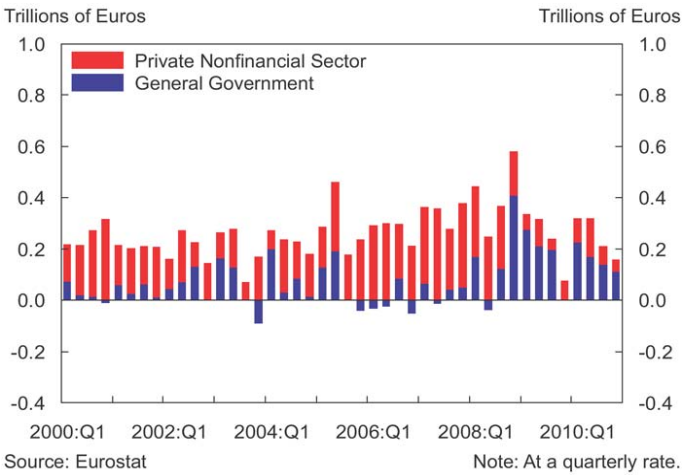
Chart 4.0.3 United States Nonfinancial Net Debt Flows



Source: Flow of Funds

Note: At a quarterly rate.

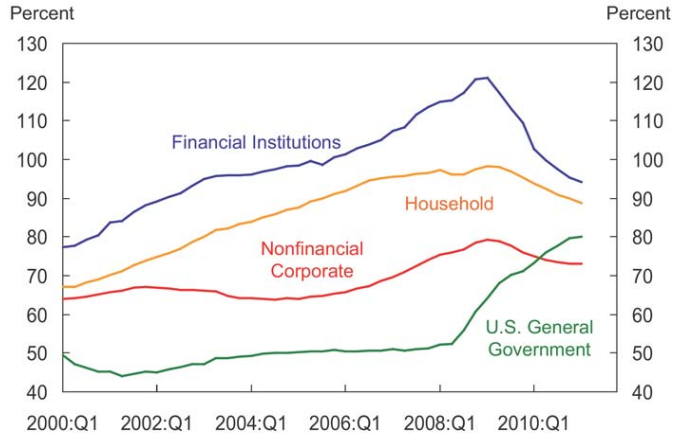
Chart 4.0.4 Euro Area Nonfinancial Net Debt Flows



Source: Eurostat

Note: At a quarterly rate.

Chart 4.1.1 Net Debt Outstanding as a Percent of GDP



Source: Flow of Funds, BEA

face the challenge of rebalancing revenue and expenditures.

4.1 Provision of Financial Services to the Real Economy

Functions of the Financial System

The financial system has three primary functions: (1) credit flow facilitation, (2) risk transfer, and (3) transaction and payment services.

Credit flows: A primary function of the financial system is to facilitate the flow of funds from savers to borrowers at prices that appropriately compensate all parties for the inherent riskiness of lending; hence, financial markets and their participants play a key role in price discovery.

Risk transfer: Another key function of the financial system is to facilitate the efficient allocation of risk across households and businesses.

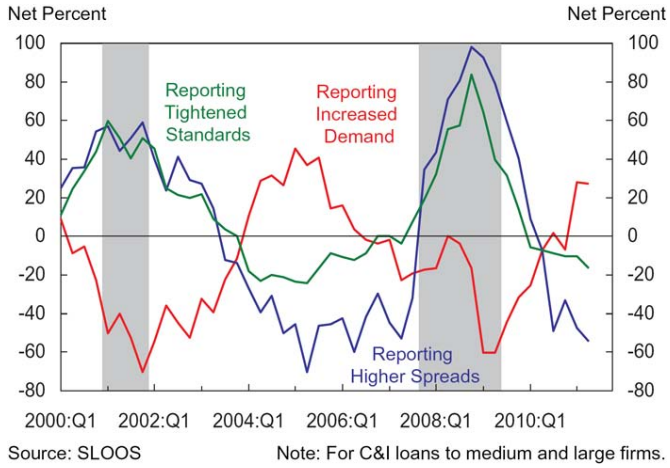
Transaction and payment services: The financial system is also responsible for providing reliable and robust transaction and payment services to the real economy.

4.1.1 Credit Flows

The reduction in credit flows to households and businesses during the crisis reflected both a decline in demand for credit and a reduction in the supply of available credit. Combined credit flows to businesses and households have started to increase. However, persistent weakness in real estate markets continues to restrain demand for and supply of mortgage credit.

Before the financial crisis, many households and financial market participants increased their debt loads. Some of this credit flowed to borrowers with limited ability, and at times limited incentives, to repay their loans. Further, some companies that originated mortgages and sold them for securitization were compensated on the basis of volume and did not always retain a stake in the mortgages. This meant that they had less incentive than traditional

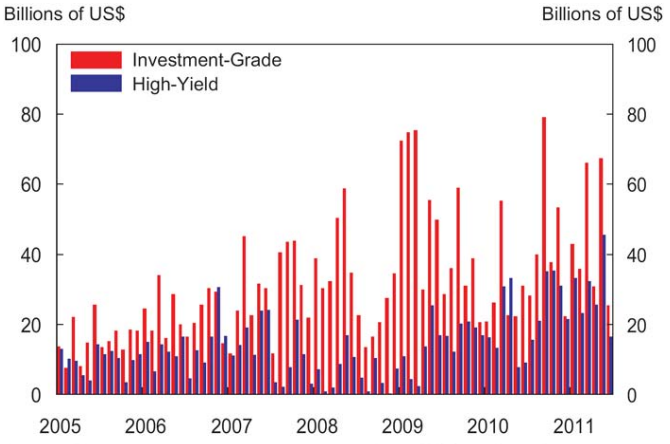
Chart 4.1.2 Bank Business Lending Standards and Demand



Source: SLOOS

Note: For C&I loans to medium and large firms.

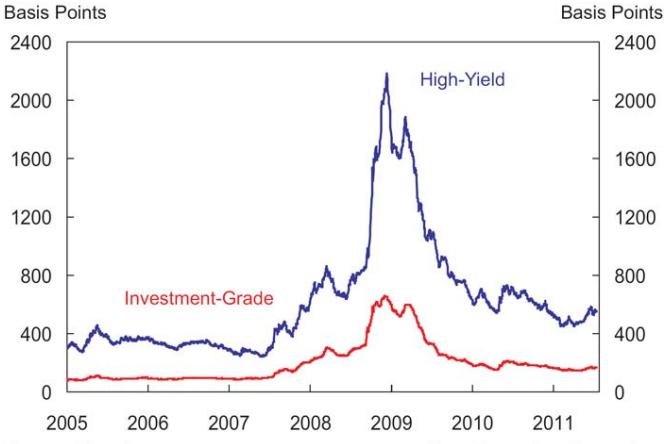
Chart 4.1.3 Corporate Bond Market Issuance



Source: Dealogic

Note: U.S. marketed issuance only.

Chart 4.1.4 Corporate Bond Spreads



Source: Bloomberg

Note: Spreads to Treasuries.

originate-to-hold lenders to underwrite loans to high standards.

The crisis triggered significant reductions in the flow of credit and an unprecedented deleveraging by consumers, businesses, and, most dramatically, the financial sector itself. Even as the recession stressed government budgets, public borrowing largely replaced private borrowing in the credit markets ***(Chart 4.1.1)***. These trends have begun to moderate, and net flows of credit to the private nonfinancial sector have turned marginally positive owing to increases in both demand for and supply of credit.

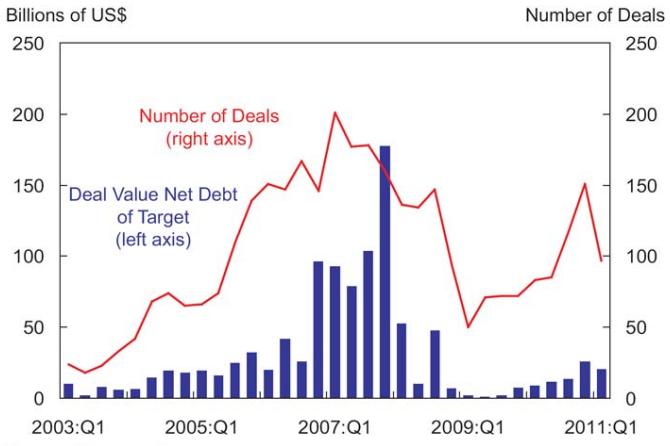
Credit Flows to the Corporate Sector

The nonfinancial corporate sector continues to recover as increased demand and low labor costs contribute to profitability. In the aggregate, corporate borrowers are experiencing more favorable financing conditions from banks, bond markets, and syndicated loan markets, which allow large corporate firms to finance their activities on better terms. For instance, bank underwriting standards have eased from the extremely tight conditions at the peak of the crisis ***(Chart 4.1.2)***.

Credit intermediation for large corporations in the United States is characterized by a high degree of funding through debt capital markets rather than through banks. Debt capital markets, somewhat impaired during the crisis, are again functioning well. Corporate bond markets have recovered, and issuance of investment-grade and speculative-grade bonds has been robust in recent months ***(Chart 4.1.3)***. Spreads between yields on corporate bonds and comparable-maturity U.S. Treasury securities have narrowed, although they remain above the very low pre-crisis levels ***(Chart 4.1.4)***. In addition, new equity issuance has been robust lately and M&A activity has picked up, indicating that credit has become more available.

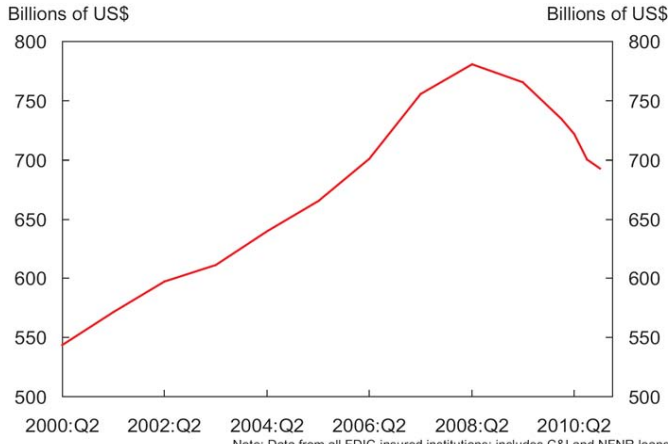
Corporate leveraged buyouts (LBOs) remain well below the elevated levels seen during the last credit cycle, although they have increased somewhat as credit conditions have improved

Chart 4.1.5 North American Completed LBOs



Source: Thomson Reuters

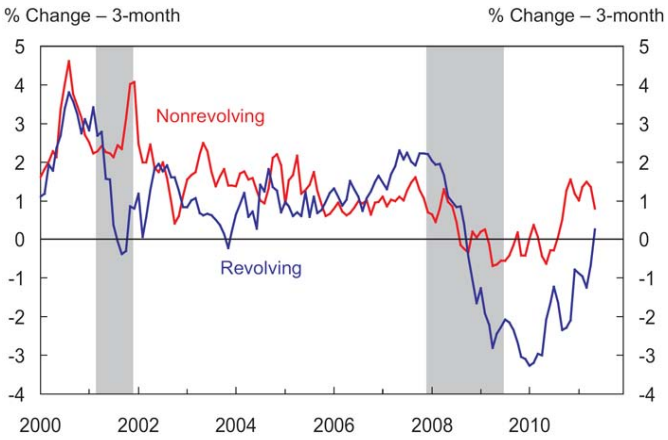
Chart 4.1.6 Proxy for Small Business Lending



Source: FDIC

Note: Data from all FDIC-insured institutions; includes C&I and NFNR loans less than 1MM, agriculture and farm loans less than 500k

Chart 4.1.7 Nonmortgage Consumer Credit Flows



Source: FR G-19

(Chart 4.1.5). Private equity firms continue to hold high levels of committed but uninvested capital available for LBO activity.

Credit Flows to the Small Business Sector

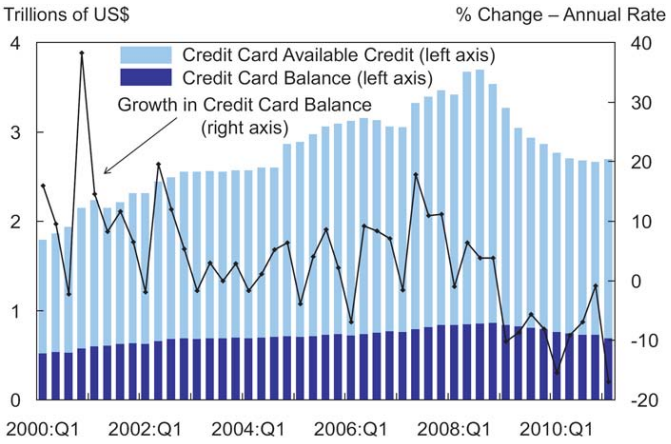
Banks are a large source of credit for small businesses: banks provide these businesses with term loans, credit cards, credit lines, commercial mortgages, and capital leases. Regulatory data on business loans less than $1 million and agricultural loans less than $500,000 suggest that small business lending had increased solidly in the years leading up to 2008, before declining by more than 10 percent through 2010 ***(Chart 4.1.6)***. A number of related factors explain the decline, including the general dislocation of credit during the crisis, the adverse effect of the crisis on borrowers' balance sheets and on the value of their available collateral, and the reduced demand for credit in light of lower inventory investment and cuts in investment and payrolls as these businesses have experienced weak demand and stagnant prospective sales.

In the National Federation of Independent Business (NFIB) June 2011 Small Business Survey, the number of small businesses reporting that credit is "harder to obtain" has declined to mid-2008 levels. Small businesses continue to cite weak demand for their products or services as the main factor limiting growth. Additionally, with more than half of credit to small businesses secured by some form of real estate, borrowing capacity is limited by the ongoing stress in real estate.

Credit Flows to the Household Sector

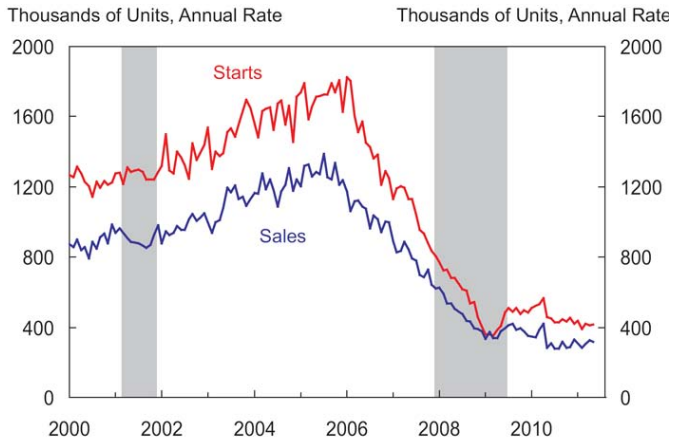
Consumer spending has risen at a moderate pace since mid-2009, contributing to overall economic growth. However, consumer credit flows, which fell sharply during the crisis, have only recently begun to recover. The modest recovery of these flows reflects restraints on the availability of consumer credit as well as subdued demand as households face weaker income prospects. Nonmortgage lending to consumers, which declined for several years, began growing in 2010, driven by nonrevolving credit ***(Chart 4.1.7)***. The amount of revolving credit available to consumers has been

Chart 4.1.8 Credit Card Limit and Outstanding Balance



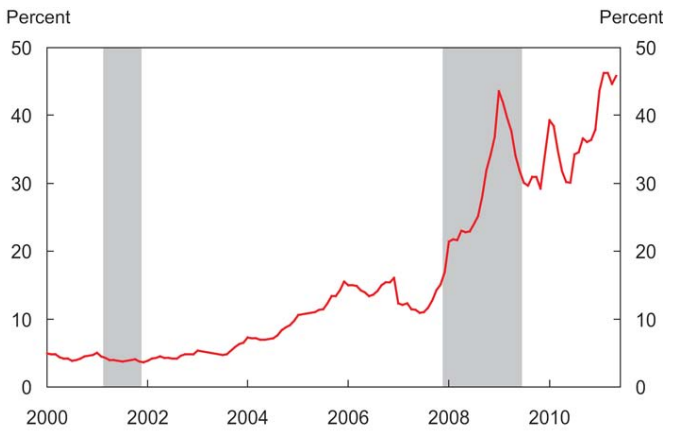
Source: FRBNY Consumer Credit Panel

Chart 4.1.9 Single-Family New Home Starts and Sales



Source: Census Bureau

Chart 4.1.10 Distressed Sales Share of Total Home Sales



Source: CoreLogic

substantially reduced, although aggregate borrowing capacity remains considerable ***(Chart 4.1.8)***. Demand for auto financing has risen along with the increase in vehicle purchases from the lows of the crisis. Student loan volumes increased during the downturn in part because of rising enrollments and increased tuition costs; these volumes have been increasingly supported by government-guaranteed loan programs.

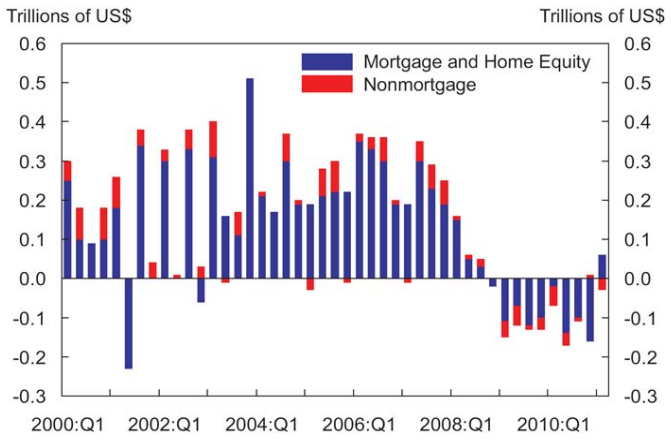
Real Estate and Mortgage Markets

The housing sector remains depressed. To date, real residential investment has fallen nearly 60 percent since its peak in early 2006. Housing starts and sales of new homes have remained near record low levels, and distressed sales have increased, recently comprising 46 percent of all sales ***(Charts 4.1.9*** and ***4.1.10)***. As a result of the pullback in mortgage lending and an elevated level of charge-offs, overall mortgage debt outstanding contracted for two years ***(Chart 4.1.11)***.

Home prices face continued downward pressure from excess inventory, lackluster demand, and distressed sales, in part coming from foreclosures. After stabilizing in late 2009 and early 2010, home prices have fallen further since the summer of 2010. The CoreLogic repeat sales home price index, which is representative of conforming and non-conforming mortgages, is back down to its mid-2003 levels, about one-third below its 2006 peak ***(Chart 4.1.12)***. The Federal Reserve Board's Senior Loan Officer Opinion Survey for April 2011 showed that demand for residential mortgages at banks continued to decrease.

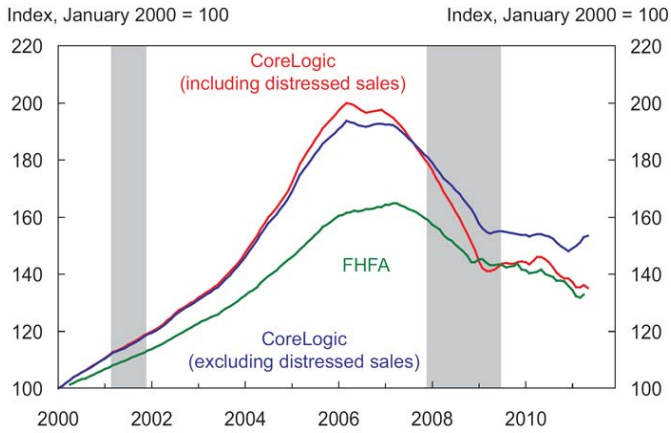
Some of the housing market fundamentals have shown signs of improvement. Indexes of affordability based on current interest rates, median incomes, and median home prices have risen to historic highs ***(Chart 4.1.13)***. The very low levels of new home construction in recent years have helped trim the backlog of excess new homes for sale. In addition, the unusually low levels of household formation over the past several years could reverse once the labor market improves sufficiently, suggesting the possibility of pent-up demand for housing.

Chart 4.1.11 Net Consumer Sector Credit Flows



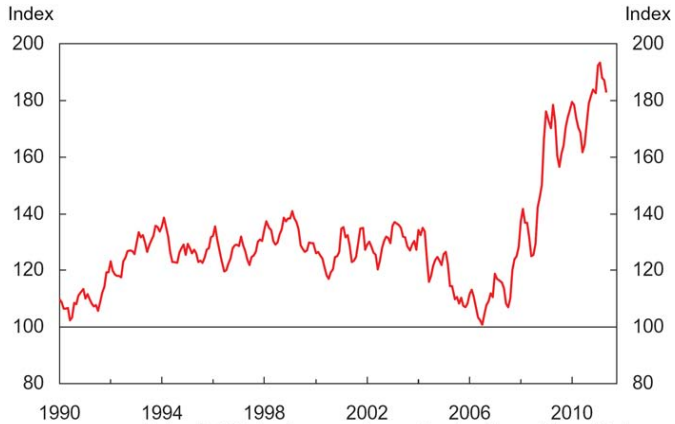
Source: FRBNY Consumer Credit Panel

Chart 4.1.12 National Repeat Sales Home Price Indexes



Source: FHFA and CoreLogic

Chart 4.1.13 Housing Affordability Index



Source: NAR

Note: At 100 the income of a median family would qualify for an 80% LTV mortgage on a median priced single-family home.

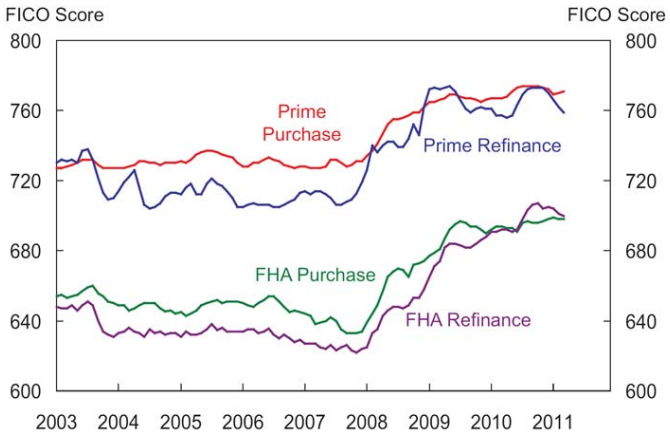
More than offsetting the developments in these fundamentals, ongoing operational deficiencies and legal challenges in the processing of foreclosure filings have significantly slowed the foreclosure process, adding to a growing inventory of distressed properties. Moreover, the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, as well as the Federal Housing Administration (FHA) and the Department of Veterans Affairs (VA)—which together account for the guarantee and insurance of more than 90 percent of originations—have tightened their underwriting standards. Standards have been tightened across product, credit score, and loan-to-value (LTV) spectrums, and fewer loans with low down payments are being guaranteed. FICO scores on mortgage originations have risen sharply, reflecting the tighter underwriting standards as well as the characteristics of borrowers who are applying for credit ***(Chart 4.1.14)***.

On the other hand, FHA/VA loans, which typically have higher LTVs and hence greater risk compared with GSE loans, have gained a larger share of the market, rising from 3 percent of total market originations in 2005 to more than 30 percent in mid-2010.

National commercial real estate (CRE) markets also weakened dramatically during the credit crisis and recession. Moody's/REAL commercial property price index fell by about 45 percent from its 2007 peak ***(Chart 4.1.15)***. Sales activity also decreased sharply: commercial property transactions fell 89 percent to $66 billion in 2009 from a peak of $579 billion in 2007. A combination of weaker cash flows, lower collateral values, and tightened underwriting standards since 2008 has made it more difficult for CRE owners to refinance their debt, putting further stress on the market. Since mid-2008, bank lending to finance commercial property has fallen by 50 percent. One-quarter of recent CRE activity has involved distressed properties.

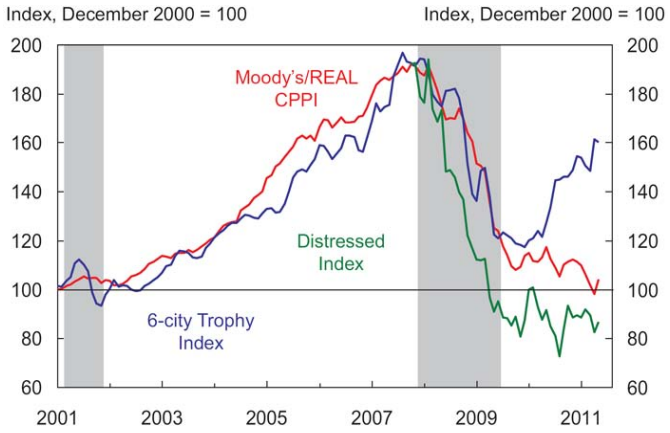
Commercial mortgage-backed security (CMBS) issuers account for nearly 25 percent of the total CRE debt. Reflecting the credit crisis

Chart 4.1.14 Median Credit Score at Mortgage Origination



Source: LPS Applied Analytics

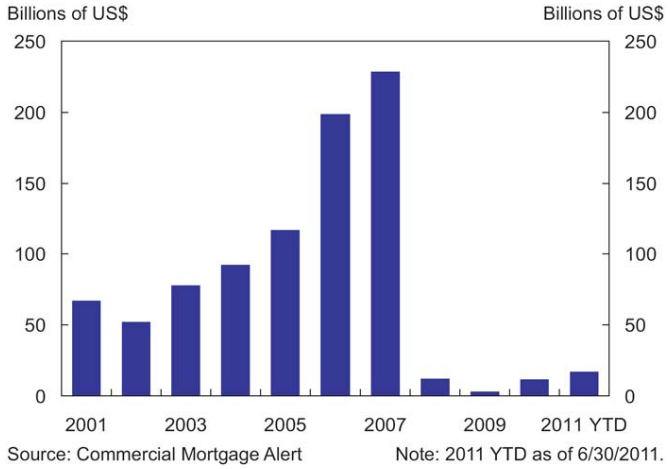
Chart 4.1.15 Commercial Property Price Indexes



Source: Real Capital Analytics, Geltner & Associates

Note: Trophy Index for sales >$10MM.

Chart 4.1.16 CMBS New Issuance



Source: Commercial Mortgage Alert

Note: 2011 YTD as of 6/30/2011.

and economic stress, issuance of CMBS in the United States was only $2.7 billion in 2009 and $11.6 billion in 2010, well below the approximately $200 billion issued in both 2006 and 2007 ***(Chart 4.1.16)***.

Recently, the commercial property market has shown tentative signs of recovery, with more sales activity among higher quality, well-leased properties in major metropolitan markets, as well as signs of increased demand for and supply of commercial property loan financing. The Senior Loan Officer Opinion Survey for April 2011 showed that about 35 percent of domestic banks on net had seen increased demand for CRE loans, and a few large banks and foreign banks had eased their lending standards somewhat, although outstanding bank commercial property loans have continued to fall.

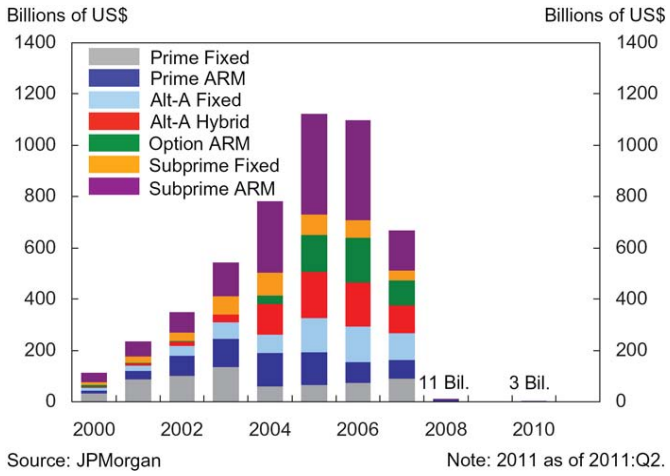
Securitization Markets

Much of the large increase in credit leading up to the financial crisis was driven by an expansion of securitized credit, particularly in the mortgage market. During this time, financial market participants and regulators tended to view securitization favorably: it allowed banks to reduce their exposure to certain types of loans, redistributing those risks to investors who were more willing to handle them and lowering the borrowing costs for households and businesses.

However, the crisis revealed deep flaws in the implementation of securitization. For example, banks and other firms that originated mortgages and packaged them into residential mortgage-backed securities (RMBS) for sale to investors often did not retain an interest in those mortgages and, thus, had no incentive to adequately monitor the performance of the originated mortgages. In the years before the crisis, underwriting standards deteriorated and nontraditional mortgage products proliferated ***(Chart 4.1.17)***.

The private-label (non-GSE) RMBS market collapsed in 2007 after house prices began to fall, which led to greater and more correlated

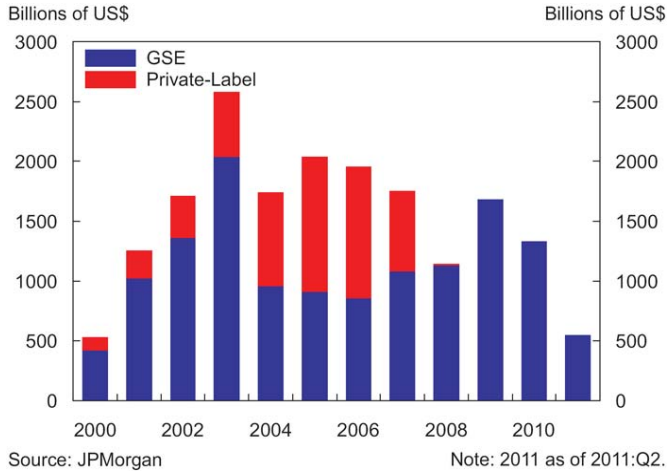
Chart 4.1.17 Private-Label RMBS Gross Issuance



Source: JPMorgan

Note: 2011 as of 2011:Q2.

Chart 4.1.18 GSE and Private-Label RMBS Gross Issuance



Source: JPMorgan

Note: 2011 as of 2011:Q2.

delinquencies of nontraditional mortgages and thus reduced the value of these securities considerably. This market remains severely impaired and has affected other asset-backed securities markets. In the absence of strong offsetting developments, the lack of a meaningful rebound to overall private sector securitization activity is likely to have implications for the types of lending or fee-based activities that banks will choose to engage in and, in turn, for the future cost and level of credit intermediation ***(Chart 4.1.18)***. For nearly all asset classes, securitization activity remains at levels well below those that prevailed before the crisis. Recent issuance has been concentrated in securitizations of consumer auto loan and lease receivables, as well as resecuritizations of real estate mortgage investment conduits, which are repackaged CMBS and RMBS.

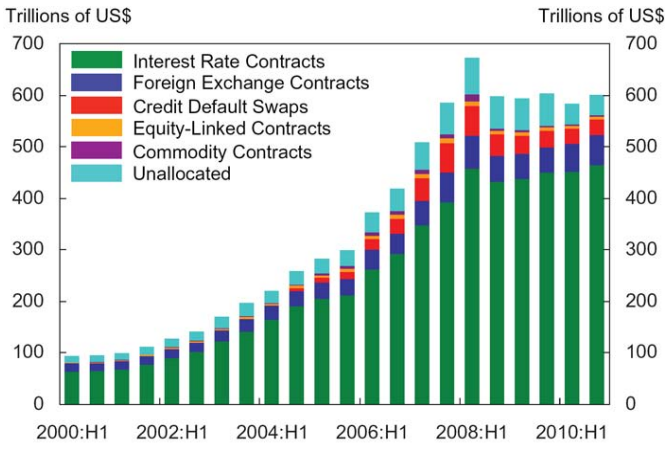
4.1.2 Risk Transfer

The financial system provides risk transfer services to the economy through a wide range of insurance and derivatives products. Certain credit risk transfer products played an important role in exacerbating the financial crisis and have not returned to their pre-crisis form.

A key role of financial markets and institutions is to allocate risk efficiently across households and businesses. The insurance market is a key market in financial risk transfer. Unlike most cases of credit intermediation, in which borrowers receive a large payment at the start and then repay the obligation over time, insurance policies typically involve upfront customer payments (premiums) in exchange for a contractual promise from the insurer to pay benefits upon a specified event in the future. The traditional U.S. insurance market largely functioned without disruption in payments to consumers throughout the financial crisis and the recovery.

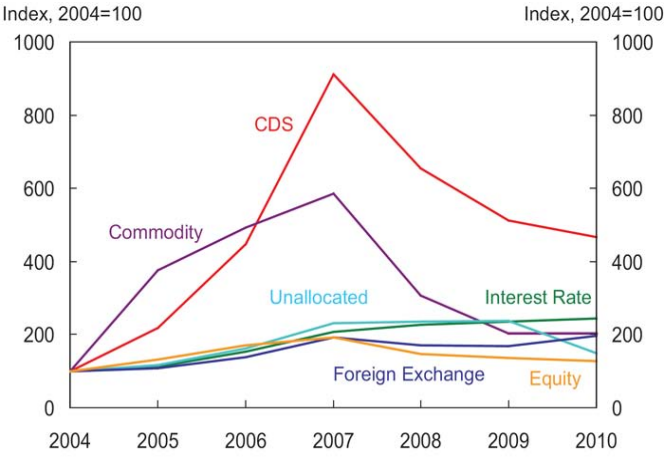
Derivative contracts have become another important source of risk transfer in the financial system. The market for these contracts, which

Chart 4.1.19 OTC Derivatives



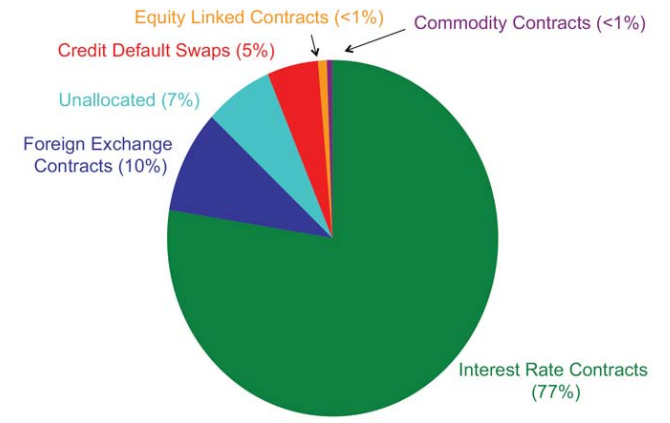
Source: BIS Note: Notional values, CDS data not available before 2004:H2.

Chart 4.1.20 OTC Derivatives Growth



Source: BIS Note: Year-end notional amounts outstanding.

Chart 4.1.21 Distribution of OTC Derivatives



Source: BIS Note: As of 2010:Q4.

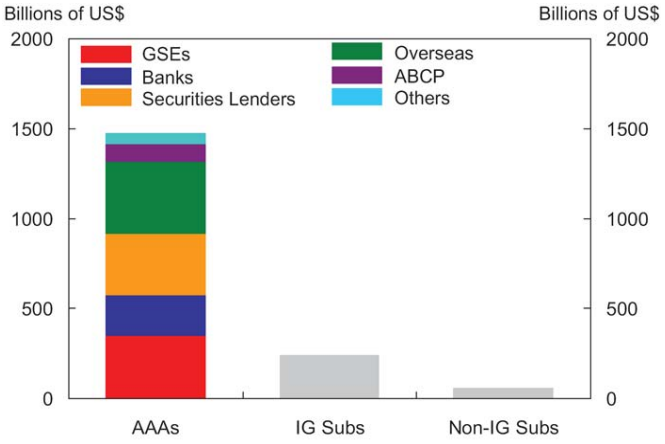
may be traded on exchanges or over the counter (OTC), has grown significantly over the past 10 years. Gross notional volume amounts of OTC derivatives contracts peaked in June 2008 at over $670 trillion. Derivatives—whose value can be based on interest rates, foreign exchange, credit, equities, and commodities—have long been used by financial and nonfinancial institutions for both risk insurance (hedging) and risk acquisition (speculation) purposes, enabling risks to be traded globally ***(Charts 4.1.19***, ***4.1.20***, and ***4.1.21)***. While OTC derivatives markets, with the exception of credit risk transfer products, were not a central cause of the crisis and did not experience any specific clearing or settlement failures, they were a factor in the propagation of risks, as their complexity and opacity contributed to excessive risk taking and a lack of clarity about the ultimate distribution of risks, exacerbating a loss in confidence.

Credit Risk Transfer Products

The rapid growth in the private-label RMBS market in the years preceding the financial crisis was enabled by two market innovations: collateralized debt obligations (CDOs), which are instruments to bundle pieces of previously issued asset-backed securities, and credit default swaps, which are credit derivatives. By allocating credit risks in complex ways that market participants, credit rating agencies, and regulators did not understand well, these products contributed to the buildup of the housing boom, the severity of the subsequent bust, and the broadening of the financial crisis beyond its origins in the subprime mortgage market.

Private-label RMBS and CDOs shared two key characteristics. First, they combined many assets into pools, which should have helped diversify the risks of loss. Second, they were sold to investors in tranches that varied in risk and return, with payments going first to senior tranche investors. The independent credit rating agencies played an important role in this process by giving the vast majority of these securities their highest rating (e.g., AAA), anticipating that junior tranche investors

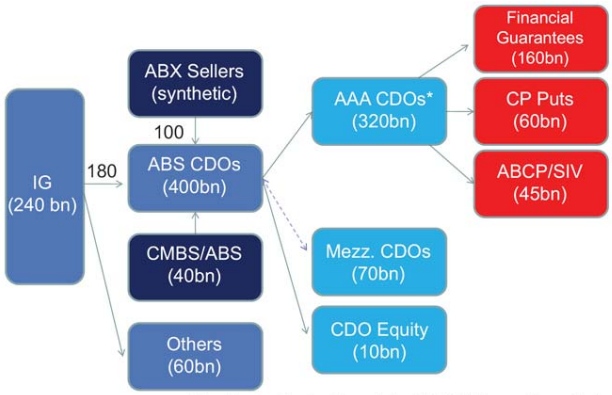
Chart 4.1.22 Private-Label Residential MBS Exposures



Source: Lehman Brothers

Note: As of 2007:Q2.

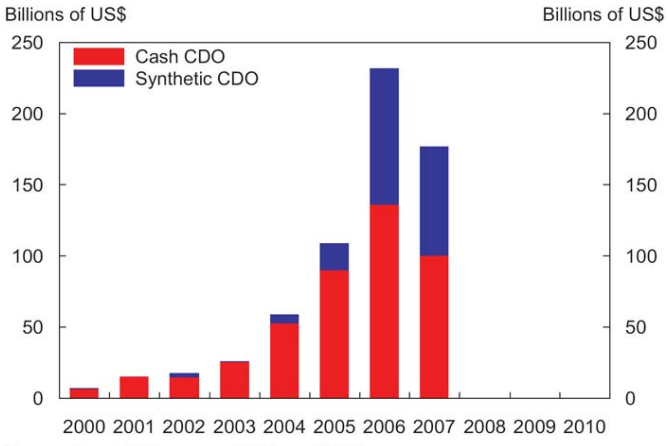
Chart 4.1.23 Ownership of Investment Grade Subordinates in RMBS and ABS CDOs (June 2007)



Source: Lehman Brothers

Note: *Issuing banks often retained AAA CDO securities while buying protection from guarantors. They also sold senior CDO securities to CP investors while providing protection in the form of liquidity puts.

Chart 4.1.24 ABS Structured Finance CDO Issuance



Source: Cordell, Huang and Williams (2011)

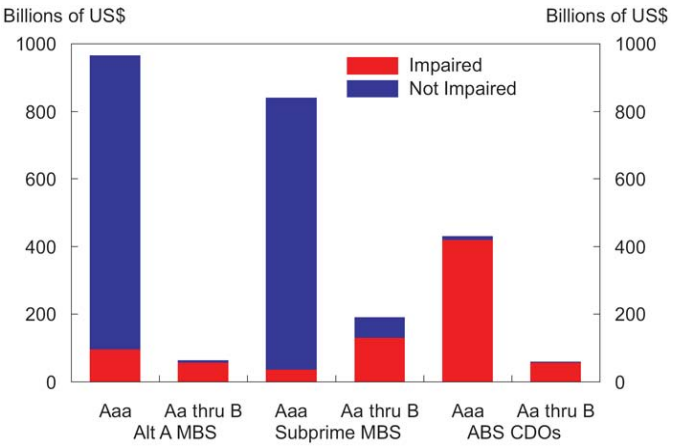
would cover expected losses based on the low historical default rates for residential mortgages, the diversification of the asset pools, and the assumption that house prices would generally continue to rise.

During the mortgage boom, senior tranches of RMBS attracted broad classes of investors, including banks, insurance companies, and GSEs ***(Chart 4.1.22)***. The riskier junior-investment-grade tranches of RMBS were typically pooled by investment banks and purchased by CDOs ***(Chart 4.1.23)***. Although most of the securities issued by these CDOs also received the highest credit rating (again, based on the presumed benefits of diversification), senior CDO tranches had a very different investor base from senior RMBS tranches. They were typically retained by the originating bank or sold with liquidity or credit guarantees provided by the originating bank or with insurance written by a segment of the insurance industry known as financial guarantors. In many cases, the credit rating agencies based their high ratings on these securities on the availability of these guarantees. Junior-investment-grade CDO tranches were typically purchased by other CDOs.

An important component in maintaining this structure during the mortgage boom was credit default swaps (CDS). Financial institutions and investors purchased CDS to help manage their risks from RMBS and CDO securities. The insurance conglomerate AIG was a large seller of these CDS. In addition, synthetic CDOs grew rapidly during the pre-crisis period. These were derivative-linked CDOs that packaged long positions in CDS referencing RMBS or CDO securities; if the underlying securities did not perform, the synthetic CDO investors would lose money as if the CDOs owned positions in actual securities ***(Chart 4.1.24)***.

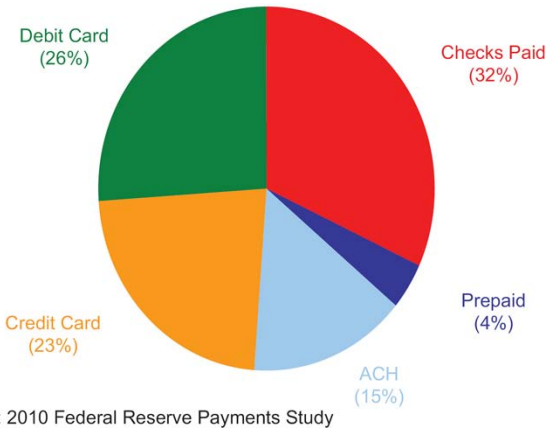
The result of this complex and opaque system was that a surprising amount of the credit risk in the mortgage market was concentrated in senior CDO tranches held or guaranteed by the banks that created CDOs and by a small number of financial guarantors. These large institutions and other investors in MBS and CDOs suffered billions of dollars in losses

Chart 4.1.25 Impaired MBS and CDO Securities



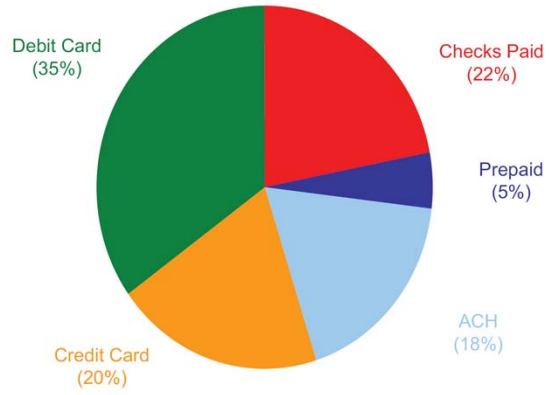
Source: Cordell, Huang and Williams (2011), Moody's Note: As of 2009:Q4.

Chart 4.1.26 Noncash Retail Payments: 2006



Source: 2010 Federal Reserve Payments Study

Chart 4.1.27 Noncash Retail Payments: 2009



Source: 2010 Federal Reserve Payments Study

when mortgage defaults across the country exceeded expectations and the performance of diverse pools of RMBS turned out to be highly correlated. By the end of 2009, $319 billion of subprime and Alt-A MBS had been materially impaired, as had $479 billion of CDOs that invested in MBS ***(Chart 4.1.25)***.

The market for CDOs has not recovered since the crisis. The financial guarantors, with one exception, are not currently providing such guarantees and appear unlikely to return to the market in the near term. However, the broader market for CDS referencing the risk of default by corporate entities remains robust.

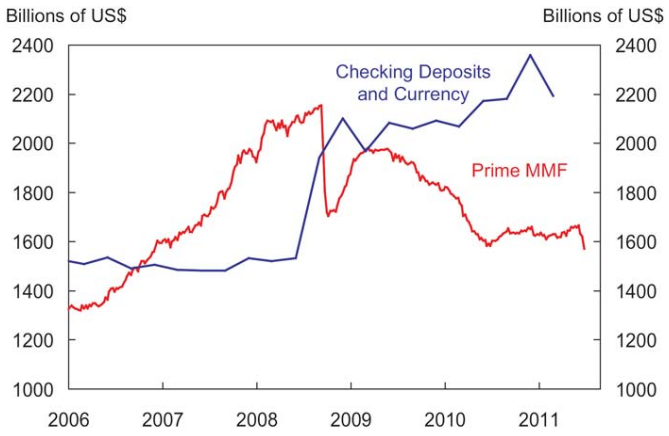
4.1.3 Transactions and Payment Services to Households and Businesses

Transaction and retail payment services, which facilitate a high volume of payments across the financial system, functioned well during the crisis.

Depository institutions provide a variety of retail payment services to consumers and businesses, such as check, debit card, credit card, automated clearing house, and prepaid card transaction services. Retail payments, which are characterized by high volumes but low average dollar transaction values, have undergone significant technological and financial innovation in recent years, changing how they are transacted. According to the most recent Federal Reserve Payments Study, the estimated number of noncash payments totaled $109 billion in 2009, with a total value of approximately $72 trillion. More than three-quarters of these retail payments, by volume, were made electronically, a 9.3 percentage point increase since 2006 ***(Charts 4.1.26*** and ***4.1.27)***. Retail payments depend critically on consumer and business accounts at depository institutions that are used for transaction purposes.

While there have been a number of bank, thrift, and credit union failures—including several high-profile failures or near-failures of large complex financial institutions—the FDIC and the NCUA were able to prevent any disruptions in retail

Chart 4.1.28 Money Market Funds and Checking Deposits



Source: ICI, Flow of Funds

payments and transaction services as a result of the failure, or fear of failure, of an insured depository institution. In contrast, certain parts of the financial system, such as prime money market funds, experienced the equivalent of a bank run in late 2008 ***(Chart 4.1.28)***.

The Transaction Account Guarantee Program (TAGP) brought stability and confidence to deposit accounts that are commonly used for payroll and other business transaction purposes. Through the TAGP, the FDIC guaranteed, for a fee, noninterest-bearing transaction accounts held at participating insured depository institutions. More than 7,100 banks and thrifts, or 86 percent of FDIC-insured institutions, initially opted into the program. The Dodd-Frank Act replaced TAGP with a provision mandating unlimited deposit insurance coverage without a separate fee through December 2012 for certain noninterest-bearing accounts at all insured depository institutions.

4.2 Private Nonfinancial Sector Balance Sheets

The ability of households and businesses to repay loans depends on the income they generate from productive activities and on their net worth: the value of their assets less liabilities. If income from productive activities does not meet expectations, as occurred during the recession, the ability to repay falls more heavily on net worth.

Corporate income has recovered more quickly than household and small business income, and corporate balance sheets were less exposed to the decline in real estate values. The decrease in real estate and other asset values has increased the leverage of the household sector, the debt levels of which had increased in the years before the crisis. Low interest rates and extended unemployment benefits have mitigated some of the loss of income and the decline in asset values.

4.2.1 Business Sector

The levels of debt to net worth in the corporate and noncorporate business sectors,

Chart 4.2.1 Corporate Credit Market Debt to Net Worth

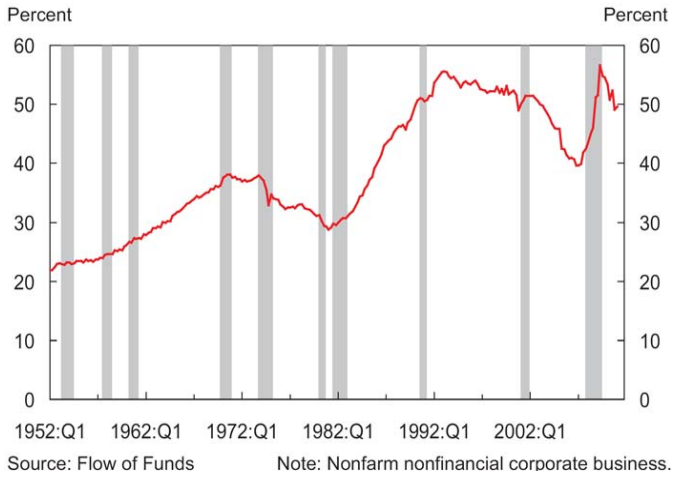


Chart 4.2.2 Financial Ratios for Nonfinancial Corporations

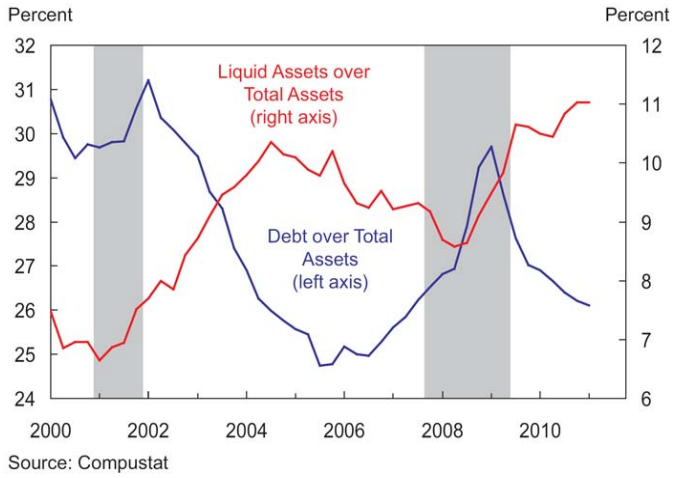
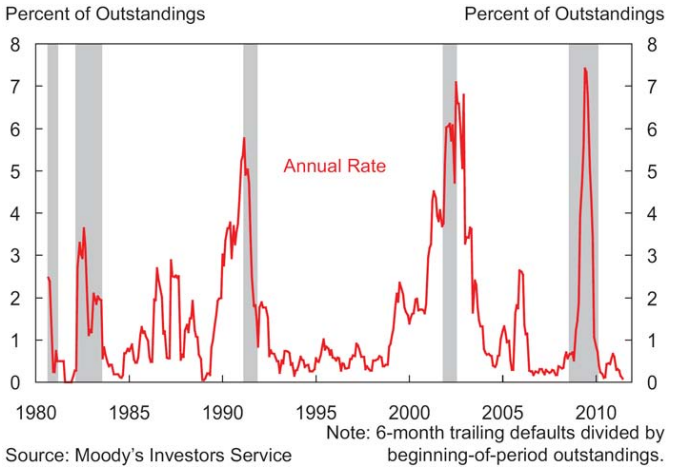


Chart 4.2.3 Nonfinancial Corporate Bond Default Rate



which spiked during the downturn as a result of deteriorating asset values, remain elevated but are showing modest improvement.

Corporate

Nonfinancial corporate balance sheets deteriorated significantly during the downturn, as leverage reached historical highs, primarily because of unprecedented declines in the value of assets held by these firms. Corporate balance sheets have recovered somewhat over recent quarters. Nevertheless, leverage has decreased only modestly and remains at elevated levels, as the value of assets in the sector have increased only moderately faster than liabilities ***(Chart 4.2.1)***.

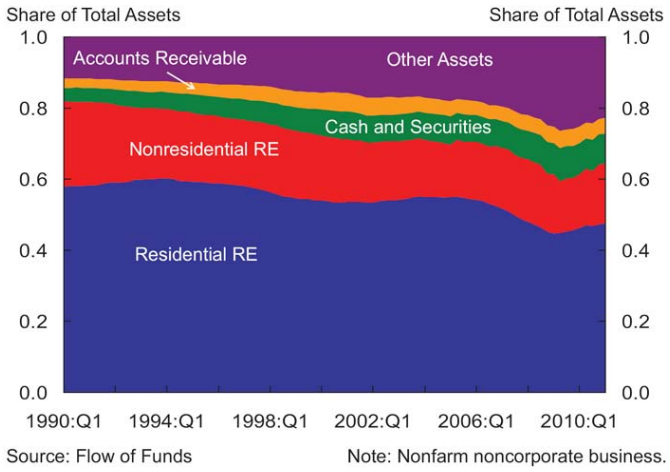
Since mid-2009, corporations have generated strong profit growth and improved cash flow, reflecting the impact of aggressive cost-cutting, moderate revenue growth, and lower interest costs. This has driven equity market valuations back to near pre-crisis levels and has allowed nonfinancial corporations to increase capital through retained earnings. These developments have also allowed corporations to significantly bolster their liquidity ***(Chart 4.2.2)***.

Nonfinancial corporate balance sheets were in relatively good condition entering the crisis. As a result, the corporate bond default rate, which spiked to a similar level as that in the previous recession, was lower than expected given the severity of this recession, particularly compared with the level implied from bond prices in early 2009 ***(Charts 4.1.4*** and ***4.2.3)***. Since the crisis, high-yield issuers have improved their ability to cover their debt payments out of cash flow. These firms also have only a limited amount of debt maturing over the near term and (as discussed in Section 4.1.1) benefit from improved financing conditions.

Noncorporate

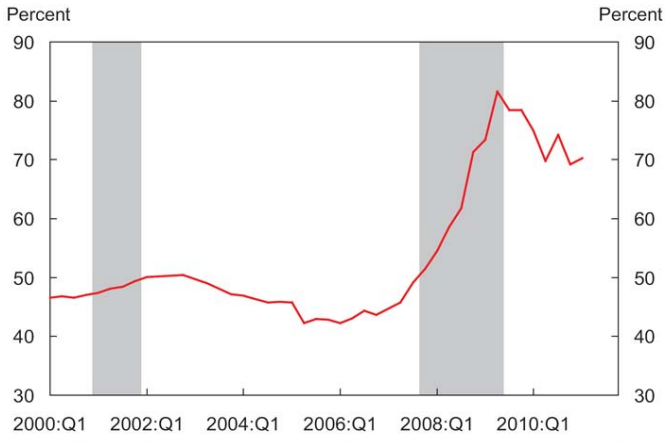
Balance sheets in the noncorporate sector, composed primarily of small businesses, were adversely affected by the credit crisis and recession owing to poor sales, declines in asset values, and a reduction in credit availability.

Chart 4.2.4 Noncorporate Assets



Source: Flow of Funds Note: Nonfarm noncorporate business.

Chart 4.2.5 Noncorporate Credit Market Debt to Net Worth



Source: Flow of Funds Note: Nonfarm noncorporate business.

In the aggregate, the assets of small businesses are composed primarily of real estate ***(Chart 4.2.4)***. Consequently, the sharp drop in real estate values during the crisis had a severe impact on the balance sheets of many small businesses and led to a sharp increase in the measured leverage of small businesses. Leverage in this sector has fallen only modestly since then and remains well above its pre-crisis levels ***(Chart 4.2.5)***.

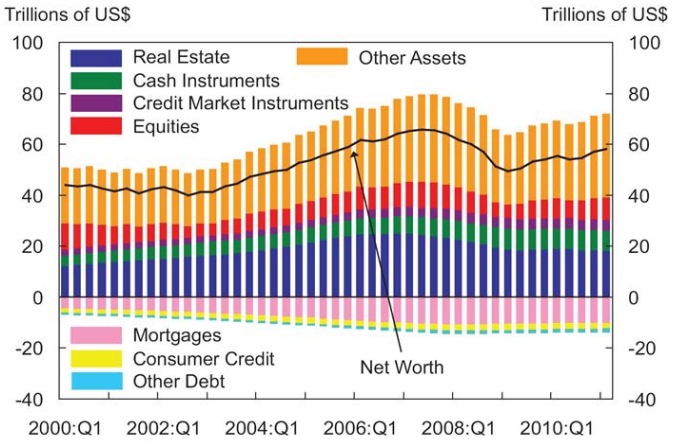
Small businesses generally have less access than corporations to capital markets and thus depend more on bank financing. Therefore, the improvements in the functioning of corporate bond markets have had little direct positive impact on the small business sector. Also, continued strains in the banking sector, particularly for smaller community banks, have constrained credit availability for small businesses. According to the Federal Reserve Board's Senior Loan Officer Opinion Survey, loan standards to small firms, which were tightened sharply during the crisis, have not been loosened to any significant extent over the past year.

The Senior Loan Officer Opinion Survey also indicates that the demand for bank loans from small businesses has not picked up much over the past year. The weakness in demand probably reflects two main factors. First, because many small business loans are secured by real estate collateral, declines in real estate prices have affected available collateral, which may prevent small businesses from seeking loans. Second, small businesses still report weak sales; in the latest NFIB survey, nearly one-quarter of respondents cited poor sales as their primary problem.

4.2.2 Household Sector

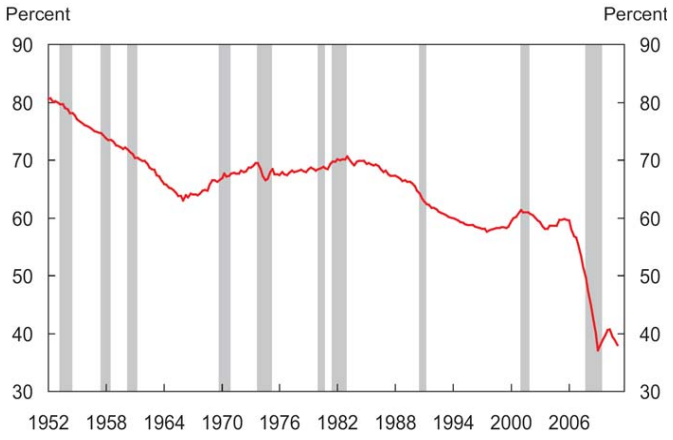
Household net worth increased over the year through the first quarter of 2011, as equity values increased and debt levels decreased modestly. The burden of debt payments relative to income has improved. However, mortgage-related debt remains high relative to the value of housing. Households have taken on more debt to fund college education.

Chart 4.2.6 Household and Nonprofit Balance Sheets



Source: Flow of Funds

Chart 4.2.7 Share of Owners' Equity in Household Real Estate



Source: Flow of Funds

In the aggregate, household balance sheets are recovering, with net worth increasing moderately over the year through the first quarter of 2011 after large falls in 2008 and 2009. Declines in housing wealth have restrained the increase in aggregate net worth, which has been driven primarily by a rebound in stock values from their March 2009 lows ***(Chart 4.2.6)***. However, the recovery in household balance sheets has not been evenly distributed across income levels, particularly for lower income households that do not have much participation in equity markets. Because of the continued weakness in home prices, owners' equity in housing has remained near a record low of approximately 40 percent since mid-2008, more than 20 percentage points lower than its average over 1990–2005 ***(Chart 4.2.7)***.

Consumer debt outstanding, driven primarily by mortgages, peaked in 2008 and has declined by about $1 trillion. In part, this decline is the result of households' active efforts to reduce their debt levels. But it also reflects the impact of foreclosures, which have removed mortgage debt from household balance sheets.

Many homeowners who were delinquent on their mortgages have been able to lower their payments through government and private modification programs. Nearly five million mortgage modification arrangements were started between April 2009 and the end of April 2011, which is more than double the number of foreclosure completions for the same period (2.1 million), although some homeowners may have received help from more than one program. More than 730,000 homeowners have received permanent modifications under the Troubled Asset Relief Program's Home Affordable Modification Program, with estimated median savings of about 37 percent, or $525 per month per homeowner. Others have been helped by government programs to modify second liens or to encourage foreclosure alternatives, such as short sales and deeds-in lieu. Still, with about 2.5 million mortgages entering the foreclosure process annually in recent years, many homeowners remain financially stressed.

Chart 4.2.8 Household Debt Service Ratio

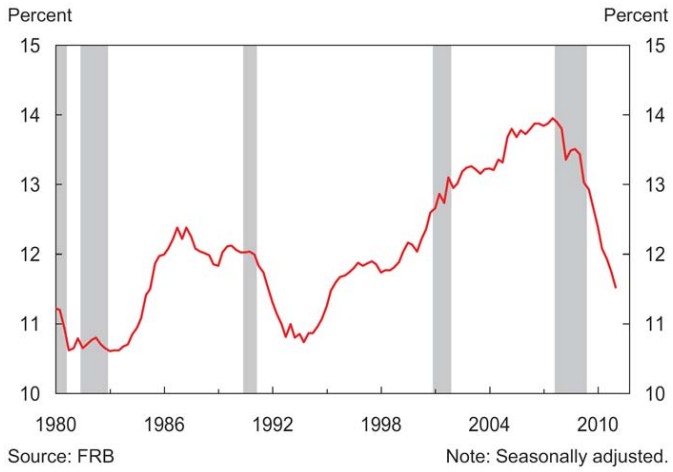


Chart 4.2.9 Household Financial Obligations Ratio

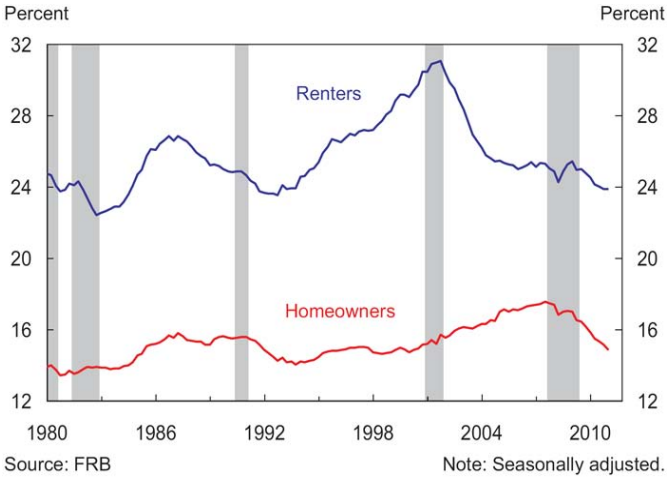
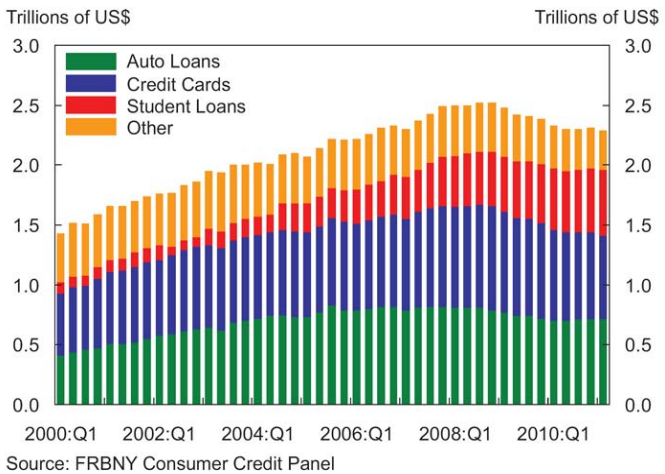


Chart 4.2.10 Outstanding Balances of Consumer Loans



Deleveraging by households, along with low interest rates and the extension of unemployment benefits, has helped households meet their debt obligations. The household debt service ratio (the ratio of household debt payments to disposable income) has fallen sharply, highlighting the improved ability of households to make debt payments ***(Chart 4.2.8)***. The financial obligations ratio (which measures a household's ability to service a broader measure of commitments, including rent payments and homeowners' insurance) has also fallen since 2007. These declines signal that, overall, both homeowners and renters are better able to meet their financial commitments than they were in the pre-crisis period ***(Chart 4.2.9)***.

Education loans are the only major consumer debt category to have increased over the past three years ***(Chart 4.2.10)***. Increased college tuition costs and a finite pool of grants have, in part, resulted in increased demand for student loans. Repayment ability depends on both the completion rate of educational programs and labor market conditions over the repayment period. Unlike revolving credit card debt, student loan debt generally cannot be discharged in bankruptcy. Education lending has been increasingly provided by federal government-guaranteed loan programs.

4.3 Government Balance Sheets

The recent recession produced a marked deterioration in finances at all levels of government in the United States. Global financial markets have been able to readily accommodate the substantial increase in U.S. federal debt. With interest rates low, the current financing costs of government debt are small. All levels of government face challenges in achieving and maintaining sustainable budgets, particularly with growing future obligations as the baby boom generation ages and retires.

4.3.1 Federal

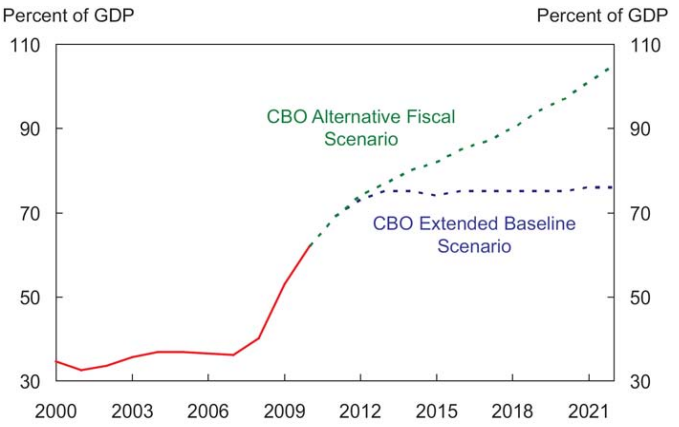
Federal government debt has increased for a number of reasons, including the direct effects of the recession and the fiscal interventions to prevent a deeper recession.

Chart 4.3.1 Total Treasury Market Turnover

Source: FR 2004

Note: 12-week moving average of daily values.

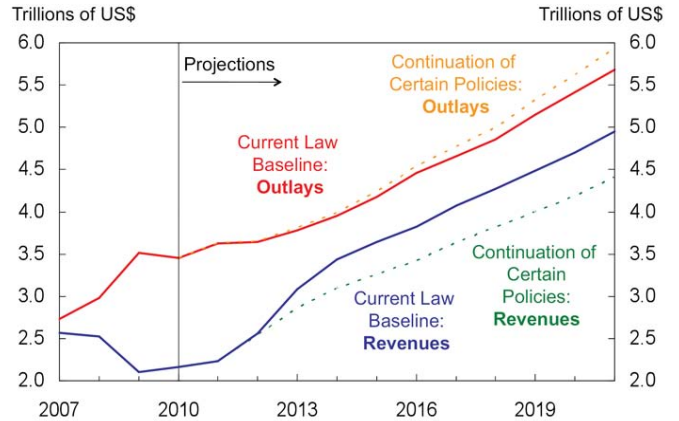
Chart 4.3.2 Federal Government Debt Held by the Public



Source: CBO

Note: Fiscal years.

Chart 4.3.3 Outlays and Revenues Using CBO Projections



Source: CBO

Note: Projection is based on the Mar. 2011 CBO baseline budget forecast adjusted using Table 1.7 of the CBO Jan. 2011 outlook that specifies the effect of a continuation of certain policies. Revenues and outlays were adjusted from the baseline by accounting for the effects of maintaining the Medicare payment rates at the 2011 level, extending certain income, estate, and gift tax provisions scheduled to expire at the end of 2012 while indexing the AMT for inflation.

The U.S. federal government is the largest issuer of debt in the world. This mainly reflects the large size of the U.S. economy relative to the rest of the world. The size of the market for U.S. debt, its liquidity, and the long-term stability and flexibility of the U.S. economy have made the U.S. dollar the dominant global reserve asset ***(see Chart 4.3.1*** and ***Box A: U.S. Dollar as the International Reserve Asset)***.

In fiscal year (FY) 2007, the federal government had a deficit of 1.2 percent of GDP and net debt outstanding of $5.02 trillion. In FY2010, the deficit increased to 8.9 percent of GDP; it is projected to remain around this level in FY2011. At the end of FY2010, net public debt outstanding reached $9.01 trillion, 62 percent of GDP ***(Chart 4.3.2)***. Total public outstanding debt increased from $9.00 trillion in FY2007 to $13.56 trillion in FY2010. In May 2011, total Treasury debt reached the limit set by Congress in February 2010.

Much of the increase in the debt was driven by the direct effects of the recession on revenues and expenditures, and the use of fiscal policy to mitigate some of the risks of a deeper recession. A small part of the increase in debt is due to direct government assistance to the financial sector, mainly in the form of capital provided to Fannie Mae and Freddie Mac, the two large GSEs. The Congressional Budget Office estimates that the net cost of the Troubled Asset Relief Program will be less than 0.25 percent of GDP. The assistance to the financial sector resulted in the government accumulating financial assets.

Even before the recession and the attendant increase in the deficit, government finances were acknowledged to be on an unsustainable path, partly owing to the increased expenditures for Medicare and Social Security anticipated with the aging of the baby-boom generation. The unsustainable path of government debt under the continuation of certain revenue and expenditure policies is widely recognized ***(Charts 4.3.2*** and ***4.3.3)***. The need for long-run fiscal balance has been a focus of recent

Box A: U.S. Dollar as the International Reserve Asset

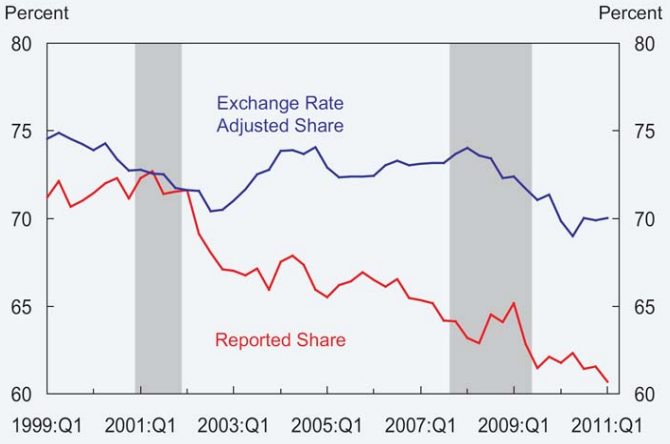
The United States and the rest of the global financial system continue to receive important benefits from the role of the dollar as the principal international reserve asset.

The U.S. dollar is the world's most actively traded currency in foreign exchange markets and the main reserve asset held by foreign central banks and finance ministries. This has been true since the end of World War II.

The attraction of U.S. assets for foreign investors reflects the large size and stability of the U.S. economy and the relative stability of U.S. economic and political institutions. It also reflects the fact that the United States has the world's largest and most liquid financial markets. One measure of this liquidity is average daily trading volume in the Treasury market, which remained robust through the financial crisis ***(Chart 4.3.1)***. These characteristics are highly valued by global investors and, in times of financial market turmoil such as the recent crisis, investors often use U.S. assets as a safe haven.

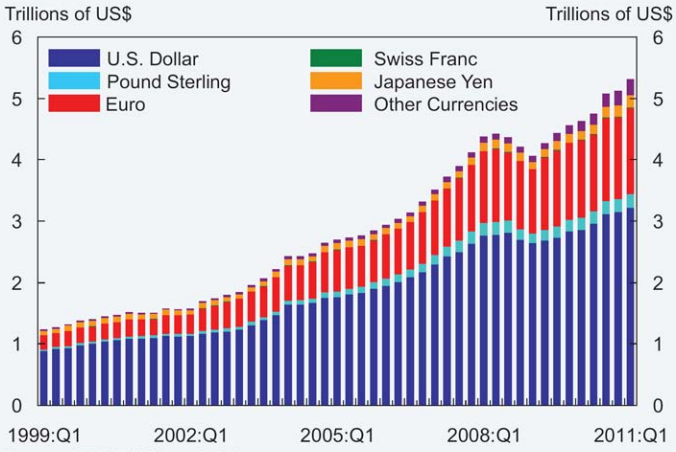
The dollar's share of "known allocated" global reserves adjusted for exchange rate fluctuations has generally exceeded 70 percent. Without adjusting for valuation effects from exchange rate fluctuations, the share has declined over the past decade from approximately 70 percent to just over 60 percent ***(Chart A.1)***. The dollar has maintained its dominant role even as global reserve assets have increased rapidly in the last 10 years ***(Chart A.2)***.

Chart A.1 U.S. Dollar Share of Allocated Reserves



Source: IMF and U.S. Department of the Treasury

Chart A.2 Currencies in Allocated Global Reserves

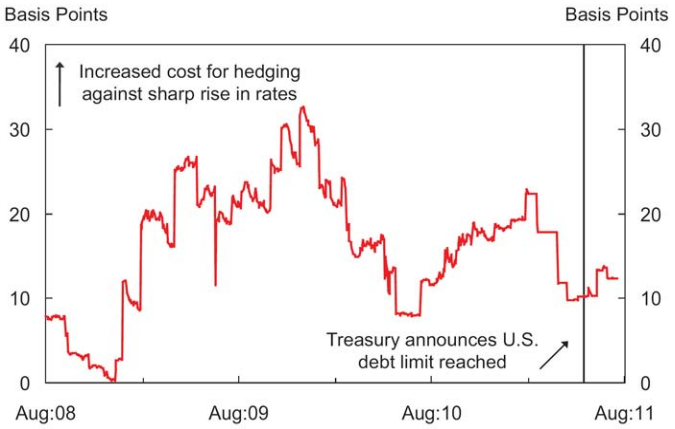


Source: IMF, FSOC calculations

The value of all U.S. securities held by foreign investors, public and private, totaled $10.7 trillion as of June 2010, an increase of $1.1 trillion from June 2009. Some of this increase represented net purchases, while valuation changes in bonds and equities also contributed. Foreign holdings of all U.S. securities were estimated at $11.3 trillion as of April 2011, and foreign holdings of U.S. Treasury securities totaled $4.5 trillion, or just under half of publicly held net federal government debt. These large holdings lower the cost of funding the current U.S. account deficit. In fact, net investment income received by the United States from the rest of the world was estimated to be $174 billion in 2010.

The U.S. and global financial systems receive important benefits from the role of dollar assets. While foreign investors benefit from the liquidity in U.S. financial markets, they are also an important source of that liquidity. High demand from abroad for Treasuries lowers the cost of funding for the U.S. government.

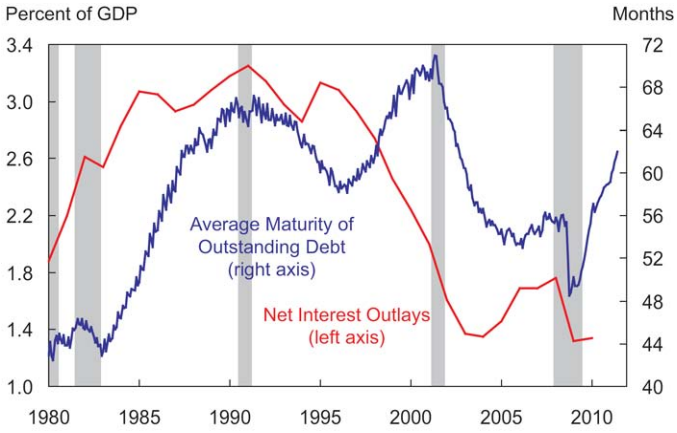
Chart 4.3.4 Interest Rate Payer Skew



Source: JPMorgan

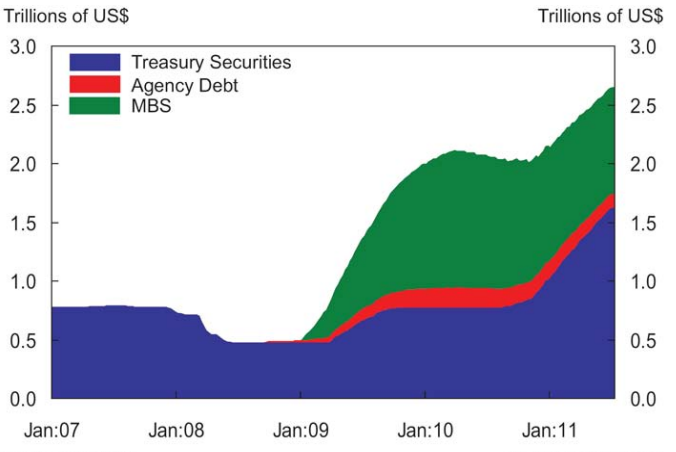
Note: 3M/10Y +/- 100 basis points implied volatility.

Chart 4.3.5 Interest Outlays and Average Maturity



Source: U.S. Department of the Treasury

Chart 4.3.6 Outright Holdings of Domestic Assets in the SOMA



Source: FRBNY

Note: Daily values.

attention from credit rating agencies. Current pricing of U.S. government debt implies that markets assume a long-term solution to the fiscal imbalance will be found and that, in the short run, the debt limit will be raised without disrupting market functioning ***(Chart 4.3.4)***.

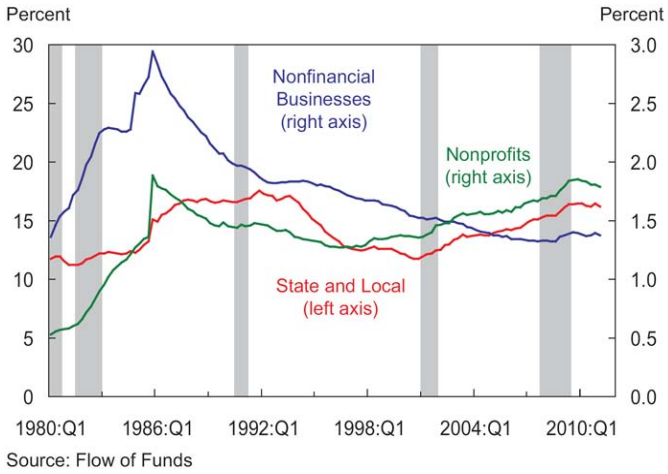
Despite the large increase in public debt outstanding, net interest costs as a percentage of GDP fell to 1.34 percent in FY2010, below the 2.97 percent average observed in the 1990s ***(Chart 4.3.5)***. This decline reflects the fact that interest rates have fallen considerably and remain near historically low levels. The average maturity of marketable debt outstanding has risen in the past two years from a low of 49 months to its current level of 62 months. This is modestly above the 30-year average of 58 months but below the average maturity of outstanding debt in other developed countries.

Over the past three years, the balance sheet of the Federal Reserve has also grown. At first, much of this growth was driven by liquidity support to the financial sector; recently, growth has been sustained by the monetary policy tool of large-scale asset purchases ***(Chart 4.3.6)***. During the financial crisis, the Federal Reserve was granted immediate authority to pay interest on reserve balances held by depository institutions. As of June 30, 2011, reserve balances stood at about $1.62 trillion. While the current interest rate on these reserves is 25 basis points, it is below the average interest rate (across all Treasury debt maturities) of around 3 percent paid by the federal government. Incorporating these liabilities would lower the average maturity of the federal government's debt obligations.

4.3.2 State and Local

Municipal governments experienced varying degrees of stress during the downturn. States are rebalancing budgets as federal government support is withdrawn; local governments are recovering more slowly. The municipal debt market has been strained amid concerns about state and local government finances. Longer term challenges associated with retirement benefits owed to government employees remain.

Chart 4.3.7 Municipal Liabilities as a Percent of GDP



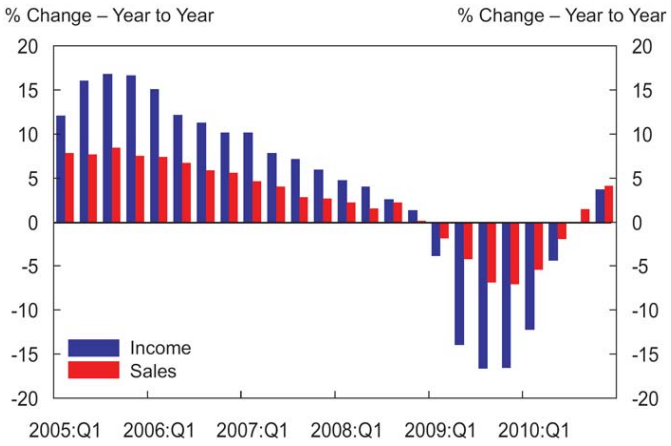
Source: Flow of Funds

State constitutions generally require balanced operating budgets, but states and localities may issue long-term debt to finance activities such as investments in bridges, schools, and other public infrastructure projects. In addition, certain public and quasi-private authorities can issue municipal debt to finance their activities. Total outstanding municipal debt from all sources is $3 trillion, which is about 20 percent of GDP, up from record lows in 2000 but in line with average levels from the mid-1980s to the mid-1990s ***(Chart 4.3.7)***. The annual rate of increase in total state and local debt has slowed markedly from an average of 9 percent in 2001–07 to an annual average rate of less than 4 percent since 2008, although some municipalities' debt loads have increased much more than the average.

Municipal bonds are broadly divided into general obligation (G.O.) and revenue bonds. G.O. bonds, with approximately $1 trillion outstanding, are secured by the full faith and credit of the issuer, meaning that the issuer (typically a government with the power to levy taxes) is committed to raising revenue sufficient to repay. Revenue bonds are more common, with approximately $2 trillion outstanding; they are secured by a defined stream of revenues from a particular project and possibly by the project itself. Revenue bonds are the principal instrument for special-purpose and quasi-private entities. Because of their narrower and less certain revenue support, municipal projects that depend on increases in use (e.g., new toll roads) or increases in property values (e.g., tax increment bonds), or those with a tie to a corporate entity (e.g., industrial development bonds), are generally riskier than revenue bonds related to the provision of essential services (e.g., water/sewer revenue bonds).

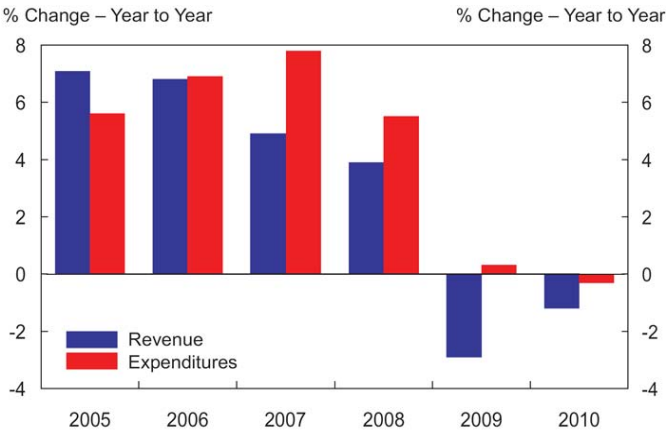
States rely on cyclically sensitive income and sales taxes for over half of their revenue. The lower level of economic activity during the recession had a significant adverse effect on these revenues from 2007 through the first half of 2010. Part of the decrease was absorbed by the federal government, which provided, on average, $53 billion in annual support to municipalities from FY2009 to FY2011, and

Chart 4.3.8 State Tax Revenue



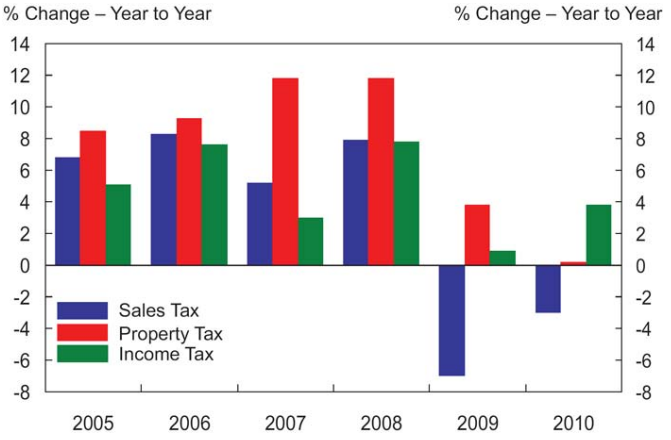
Source: U.S. Census Bureau

Chart 4.3.9 City General Fund Revenues and Expenditures



Source: National League of Cities

Chart 4.3.10 City General Fund Tax Receipts



Source: National League of Cities

bridged approximately a third of state budget shortfalls in 2010. Tax revenue is recovering and states are going through the process of rebalancing revenues and expenditures as federal government support is withdrawn ***(Chart 4.3.8)***.

Local governments and smaller municipal issuers are more vulnerable as they have smaller tax bases than states and are less able to raise revenue ***(Chart 4.3.9)***. Cities are currently facing reductions in state aid, on which they have historically relied for 30 percent of their funding. They also face declining property tax collections, traditionally their largest independent source of revenue, due to the sustained declines in real estate values and lower sales tax revenue ***(Chart 4.3.10)***. Funding has also become more difficult to obtain for single-purpose entities such as hospital authorities.

Despite the strains induced by the recession, municipal bond defaults are historically low. Defaults are associated with smaller municipal entities in geographic areas hardest hit by the housing crisis and recession. Also, defaults are more common for municipal projects that relied on future growth that did not materialize, or revenue bonds backed by issuers with corporate credit characteristics, such as industrial development bonds, pollution control bonds, or bonds in the health care sector ***(see Box B: Municipal Debt Market)***.

State and local governments face longer term challenges associated with the unfunded portion of future benefits owed to their employees. With high equity valuations in 2000, state pension systems were considered more than adequately funded; however, by 2008, declines in asset values led to significant underfunding, and approximately 80 percent of states failed to make their actuarially required contributions to their pension funds. Estimates of the unfunded portion of state and local retirement liabilities range from $1 trillion to $3 trillion. Other postemployment benefits represent an additional $0.5 trillion to $0.9 trillion in unfunded liabilities. The widening unfunded portion of pension obligations

Box B: Municipal Debt Market

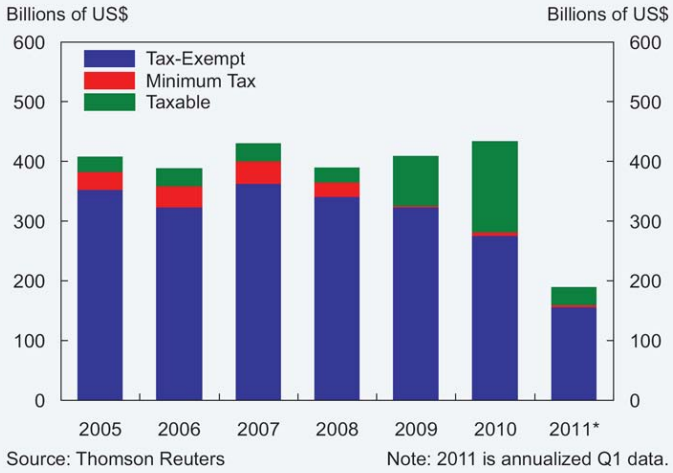
The municipal bond market provides a critical source of private capital for state and local governments and certain nongovernment issuers.

Municipal bonds may be exempt from federal, state, and local taxes if the proceeds of such bonds are used by a government unit for its own purposes and if the property financed by the bonds will be owned by the government unit. Generally, with some exceptions, bonds that do not meet these standards are considered private activity bonds and are not tax-exempt. Furthermore, some types of private activity bonds that are exempt from the regular tax may be subject to the alternative minimum tax.

Most municipal debt issuance is tax-exempt ***(Chart B.1)***, which has made it an attractive class for retail investors. As a result of the financial crisis, the market has undergone significant structural changes that have left it even more dependent on retail demand.

Municipal bonds may have fixed or variable interest rates, or they may be zero coupon bonds. Many variable rate municipal bonds give investors the right to put the bond back to the issuer. Such securities are known as variable rate demand obligations (VRDOs). If the investor exercises the put, a remarketing agent sells the bonds to another investor. If the bonds cannot be resold, either a bond insurer or a liquidity facility provides the funds for the issuer to purchase the bonds.

Chart B.1 Issuance by Tax Status

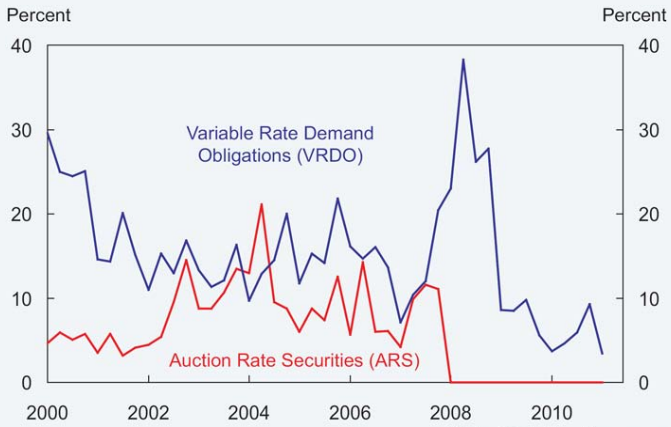


Source: Thomson Reuters

Note: 2011 is annualized Q1 data.

The auction rate securities (ARS) and tender option bond (TOB) programs were large pre-crisis sources of liquidity in the long end of the municipal bond market. Like other off-balance-sheet maturity transformation vehicles, these were almost completely eliminated in the financial crisis, as banks and other investors became less willing to assume the associated credit and interest rate risks. As a result, many municipal bond issuers replaced auction rate debt and insured VRDOs with uninsured VRDOs supported by liquidity facilities. These facilities generally have terms of three years, and many of the facilities originated in 2008–09 are currently up for renewal ***(Chart B.2)***.

Chart B.2 ARS and VRDO Funding of Long-Term Muni Bonds



Source: Securities Data Company

Note: Maturity at issuance greater than 13 months.

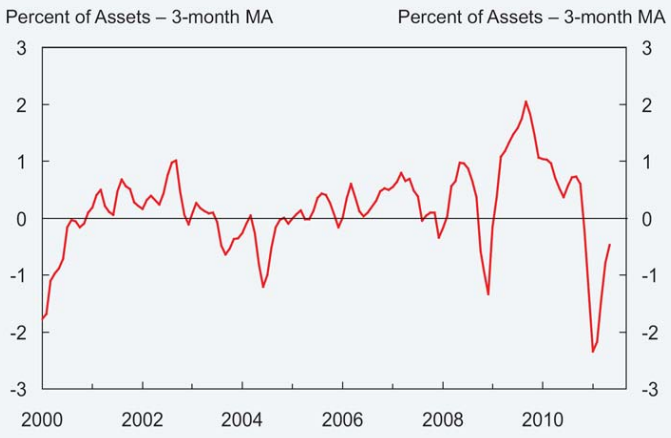
Following significant dislocations experienced by the municipal market in 2008 and early 2009, the federal government launched the Build America Bonds (BAB) program to stimulate infrastructure spending and ease the pressure on the municipal bond market. The BAB program was designed to broaden the municipal bond investor base beyond those who typically invest in municipal bonds by providing a federal subsidy that allowed municipal borrowers to issue long-term taxable bonds. Specifically, municipal borrowers could issue long-term taxable bonds for capital expenditure instead

of tax-exempt bonds, with the federal government rebating 35 percent of the taxable interest expense directly back to the issuer.

The program played an important role in increasing the investor base for municipal bonds and indirectly provided support for the long-term tax-exempt municipal market by limiting the amount of tax-exempt supply. During the first three quarters of 2010, borrowing costs for 30-year municipal issuance fell by 45 basis points, and nearly $500 million flowed into municipal bond mutual funds.

However, in advance of the BAB program's expiry on December 31, 2010, expectations that supply would shift back to the tax-exempt market pressured yields higher. At the same time, widespread press and analyst commentary on the credit conditions of state and local governments began to trigger sharp outflows from retail municipal bond mutual funds ***(Chart B.3)***. Muni-to-Treasury yields, which had already become increasingly differentiated, rose further for some issuers to levels well above their long-term average of 85 percent ***(Chart B.4)***. Even though most municipal bond investors generally employ negligible levels of leverage, there were reports of forced selling at distressed levels as some mutual funds struggled to meet redemptions.

Chart B.3 Municipal Bond Flows

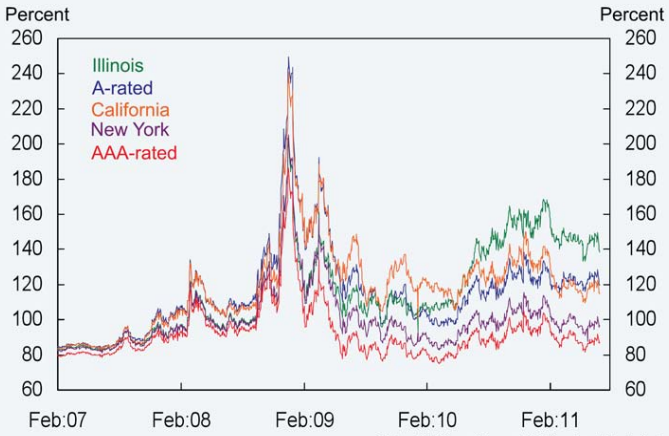


Source: ICI

The increasing speed of redemptions created concern about municipalities' ability to issue certain short-term debt instruments called revenue anticipation notes, which cover the mismatch between revenue collections and operating expenditures. However, relatively attractive valuations induced investors to enter the tax-exempt space, and demand from crossover institutional buyers helped counteract redemptions from tax-exempt mutual funds, although these have since recovered.

Going forward, structural issues with the municipal bond investor base remain. Long-term debt generally is not attractive to retail investors. As VRDOs expire, and without maturity transformation structures such as ARS and TOB, it is unclear how cost-effective longer term funding will be sourced through the municipal bond market.

Chart B.4 Municipal Tax-Exempt Bond Ratios



Source: Thomson Reuters, Bloomberg

Note: 10-Year General Obligation Municipal Bonds to 10-Year Treasury Yields.

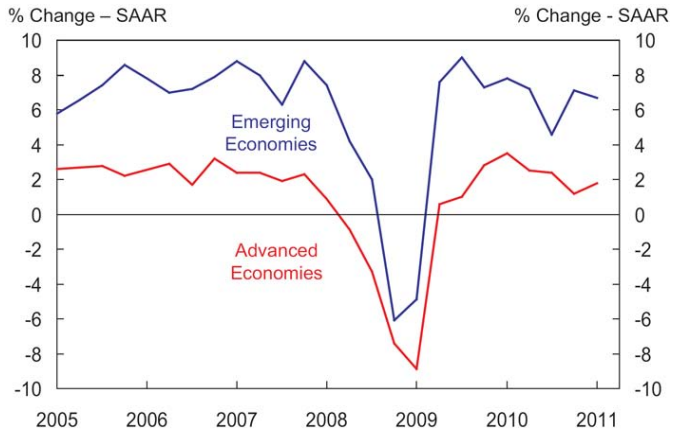
Chart 4.4.1 Indebtedness and Leverage in Selected Advanced Economies (April 2011)

	Government Net Debt, 2011	Primary Balance, 2011	Government debt held abroad (% of net debt)	Nonfinancial Corporates' Debt over Equity (percent)	Bank Leverage (tangible common equity)	Total Economy Net External Liabilities
US	72	-9	44	105	13	19
Japan	128	-8.6	13	176	23	-55
UK	75	-5.5	30	89	24	14
Canada	35	-4.1	48	72	18	7
Euro area	67	-1.7	38	106	26	13
Belgium	82	-0.5	80	43	30	-43
France	78	-3.5	72	76	26	11
Germany	55	-0.3	77	105	32	-39
Greece	N/A	-0.9	N/A	218	17	99
Ireland	95	-7.5	71	113	18	102
Italy	101	0.2	56	135	20	20
Portugal	86	-1.6	60	145	17	106
Spain	53	-4.6	60	152	19	90

Source: IMF Global Financial Stability Report

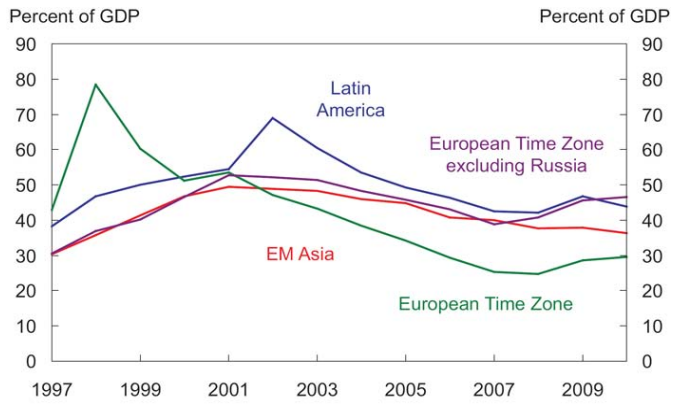
Note: As a percent of 2010 GDP, unless otherwise noted.

Chart 4.4.2 Real GDP Growth



Source: National Authorities and FRBNY

Chart 4.4.3 Emerging Markets: Public Debt to GDP



Source: National Authorities, CEIC Data, EMED, FSOC calculations

European Time Zone: Hungary, Poland, Russia, South Africa, Turkey, Ukraine; EM Asia: China, Korea, Indonesia, Malaysia, Philippines, Thailand; Latin America: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Venezuela

increases the likelihood of changes in fiscal policy, such as increases in tax revenues or service reductions to close funding gaps.

4.4 External Environment

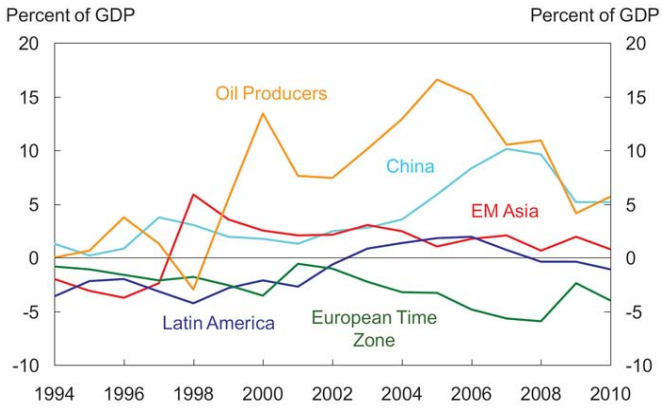
Many advanced economies face high debt levels and an uneven recovery. Growth in emerging market economies has rebounded more quickly, with implications for capital flows and the potential for overheating.

The United States was not alone among advanced countries in experiencing a large increase in government debt during the financial crisis, while private sector debt shrank or grew at much slower rates than in previous years ***(Charts 4.0.3*** and ***4.0.4)***. For some countries, the direct cost of support to the financial sector has been a large contributor to the increase in government debt.

Starting in early 2010, financial markets began to apply additional pressure on certain peripheral European countries through sharply higher government funding costs. Amid considerable market turmoil in the spring of 2010, concerns over sovereign credit risk came to the forefront ***(Chart C.2)***. European authorities working with the International Monetary Fund have developed financial assistance packages for three countries and established mechanisms to resolve future debt problems in the euro area ***(see Box C: Country Support Developments in Europe)***.

The abilities of advanced countries to service their debts without provoking sharp market concerns are not exclusively related to total public debt or current fiscal deficits. The size of a country's net external liabilities, the size of the financial sector relative to GDP, and the share of government debt held externally are other considerations ***(Chart 4.4.1)***. Lingering balance sheet weaknesses in the advanced economies are limiting the pace of their recoveries. The natural disaster in Japan has not had widespread impacts on capital flows, as markets effectively absorbed this exogenous shock; but it has interrupted some international supply chains.

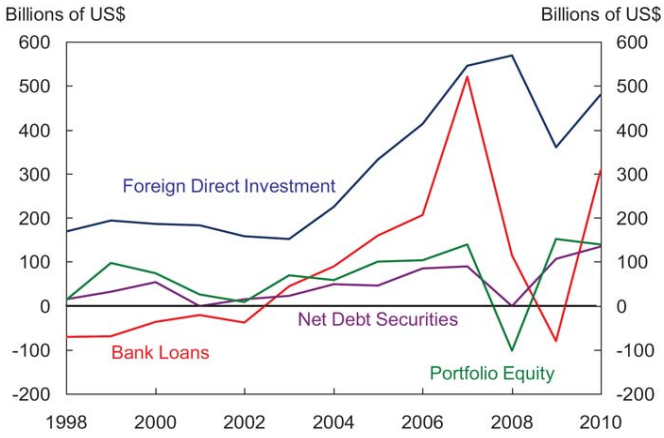
Chart 4.4.4 Emerging Markets: Current Account



Oil producers: Russia, Saudi Arabia, UAE, Venezuela; EM Asia: India, Indonesia, Korea, Malaysia, Philippines, Thailand; Latin America: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru; European Time Zone: Hungary, Poland, South Africa, Turkey, Ukraine

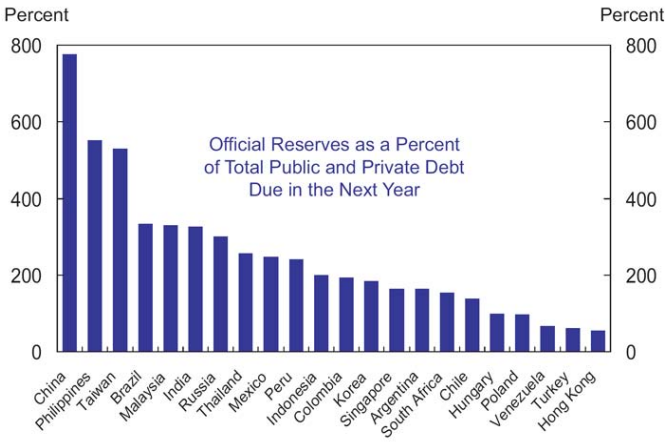
Source: CEIC Data and EMED

Chart 4.4.5 Private Capital Flows to Emerging Markets



Source: BIS, EMED, CEIC Data, and FSOC calculations

Chart 4.4.6 EM Foreign Exchange Reserves Coverage



Source: CEIC Data, EMED, IMF, FSOC calculations

Note: As of 2010.

In contrast, most emerging market economies (EMEs) have recovered strongly from the global recession ***(Chart 4.4.2)***. Moreover, most EMEs currently do not exhibit the macroeconomic and balance sheet vulnerabilities that have been associated with past EME crises, such as large fiscal or current account deficits, banking sector weaknesses, heavy debt burdens, or significant currency and maturity mismatches. However, some countries in emerging Europe are still working through the aftermath of abrupt reversals in financial and economic conditions ***(Charts 4.4.3*** and ***4.4.4)***.

Nonetheless, prospects for sustained strong capital inflows and moderately strong credit growth in some EMEs present challenges. A number of EMEs are now experiencing record private capital inflows, spurred by their strong growth prospects and by low interest rates in the advanced economies ***(Chart 4.4.5)***.

To head off the risks of overheating, authorities in many EMEs are tightening policy through a number of channels, including interest rate increases and macroprudential measures such as restrictions on LTV ratios, stricter lending criteria, and restraints on credit growth. However, some policy actions pose difficult trade-offs; for example, they may encourage further capital inflows. Against this backdrop, many countries continue to add to their large holdings of foreign exchange reserves while running current account surpluses, reflecting a desire to limit currency appreciation against the U.S. dollar ***(Chart 4.4.6)***.

Box C: Country Support Developments in Europe

In the wake of the financial crisis, several European countries have experienced severe macroeconomic and financial challenges. These challenges have exposed tensions within the European Monetary Union and limitations in the pre-crisis set of tools available to European policymakers to respond to economic and financial stress.

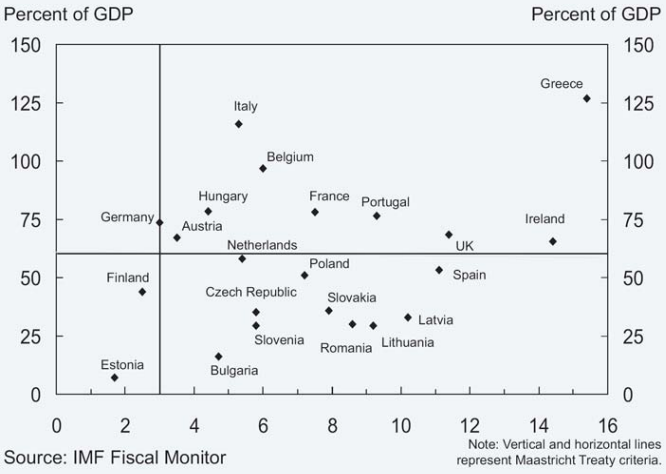
The European Union (EU), supported by the International Monetary Fund (IMF), committed to lend €255.5 billion to help Greece, Ireland, and Portugal address their vulnerabilities through adjustment programs. In addition, European leaders have agreed on a more comprehensive response that includes increased emergency financing, new EU economic governance rules, and member country commitments to take measures to support fiscal sustainability and competitiveness.

Vulnerabilities differ across the supported European countries. Greece's crisis has stemmed from unsustainable growth in the public sector, fueled by low-cost cross-border finance that has led to very large fiscal deficits and public debt ***(Chart C.1)***. Portugal's public debt is more moderate, but its private and bank debt is large. Even during periods of vibrant global expansion, Portugal's growth rates have been anemic, and the structure of the economy is skewed toward low value added industries. In Ireland, the collapse of the property sector and a deep and prolonged recession produced very large banking sector losses and structural fiscal deficits. Irish government support for the banking system has amounted to 46 percent of GDP, which along with large fiscal deficits, has pushed public debt close to 100 percent of GDP.

As of early 2008, markets were not significantly differentiating among euro area countries, with 10-year yields for Greece, Portugal, and Ireland trading at just 10 to 30 basis points above those for Germany. But Greek bond spreads surged following a late 2009 announcement by the Greek government that its budget deficit would be more than three times the original forecast ***(Chart C.2)***. Spreads have since increased sharply in Ireland and Portugal. Markets remain attentive to the risk of further contagion.

In May 2010, Europe launched a multipronged effort to address the crisis, making two emergency financing vehicles available to member states: the European Financial Stability Facility (EFSF), with an initial effective lending capacity of €255 billion, and the European Financial Stability Mechanism (EFSM), with a capacity of €60 billion. Adjustment programs are to be undertaken jointly with the IMF.

Chart C.1 2009 Gross General Government Debt & Deficits



Source: IMF Fiscal Monitor

Note: Vertical and horizontal lines represent Maastricht Treaty criteria.

In March 2011, European leaders announced broad agreement on a more comprehensive debt crisis response, which must be ratified by national parliaments. The agreement covers three broad areas: (1) an increase in emergency financing; (2) new EU economic governance rules; and (3) a commitment by countries to take additional policy measures on fiscal sustainability and competitiveness.

Leaders committed to raise the EFSF's lending capacity to its notional cap of €440 billion. The European Stability Mechanism (ESM) will become the permanent financing vehicle in 2013, with €500 billion in lending capacity. Lending under both the EFSF and the ESM requires unanimous agreement by member countries and an adjustment program with IMF participation.

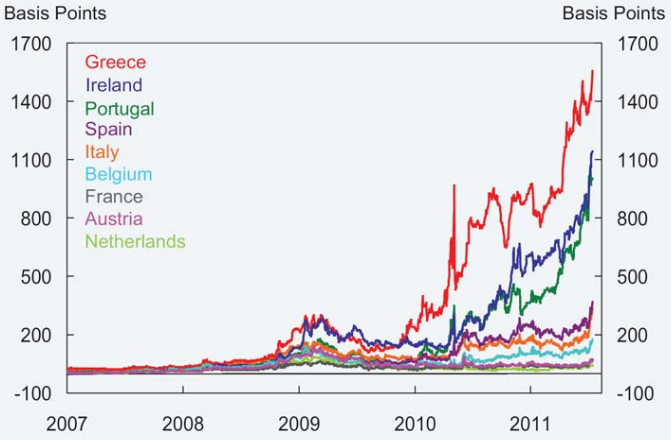
Leaders agreed to enhanced EU surveillance of fiscal sustainability and economic imbalances and to a broader array of potential sanctions for noncompliance. Member states also agreed to undertake structural reforms to boost competitiveness, fiscal sustainability, employment, and financial stability to safeguard the common currency.

Meanwhile, Europe and the IMF are extending financing to the three countries most affected by the crisis.

Greece is receiving €110 billion in IMF and EU loans while it undertakes fiscal adjustment and structural reforms. Despite concerns about domestic support for reform, the government enacted a fiscal consolidation of 5 percent of GDP last year, even as the economy shrank by 4.4 percent.

In December 2010, Europe and the IMF committed €67.5 billion to Ireland for budget support and to finance a fundamental restructuring of the banking sector. In May 2011, Portugal entered into a €78 billion IMF/EU program for fiscal consolidation and extensive structural reforms to boost growth.

Chart C.2 European Sovereign 10-year Spreads



Source: Bloomberg

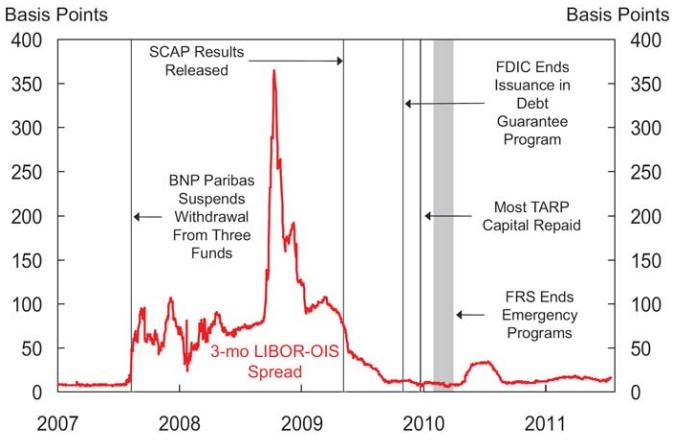
Note: Spreads relative to 10-year German Bund.

5 Financial Developments

Over the past 30 years, the inner workings of the U.S. financial system grew increasingly complex and interconnected amid technological advances and globalization. These developments were generally intended to further facilitate the allocation of risk, increase liquidity, and enhance pricing in order to improve the provision of financial services. But the financial crisis illustrated that complex new forms of financial activity also can produce instability and imbalances that can pose extraordinary costs to the real economy.

Most observers only became aware of these powerful destabilizing forces in the summer of 2007, when the interbank market seized up ***(Chart 5.0.1).*** It took more than two years of unprecedented interventions for financial markets to return to more normal functioning.

Chart 5.0.1 The Financial Crisis in the Interbank Market



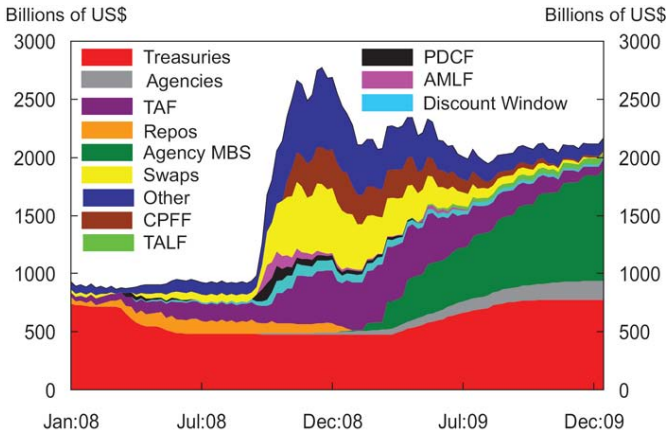
Source: Bloomberg

5.1 Restoration of Private Sector Funding and Capital

To maintain the key functions of the financial system during the extraordinary disruptions of the crisis, governments provided unprecedented liquidity, guarantees, and capital support to markets and institutions. With the exception of housing finance, most of the explicit U.S. government support has been replaced by private sector sources.

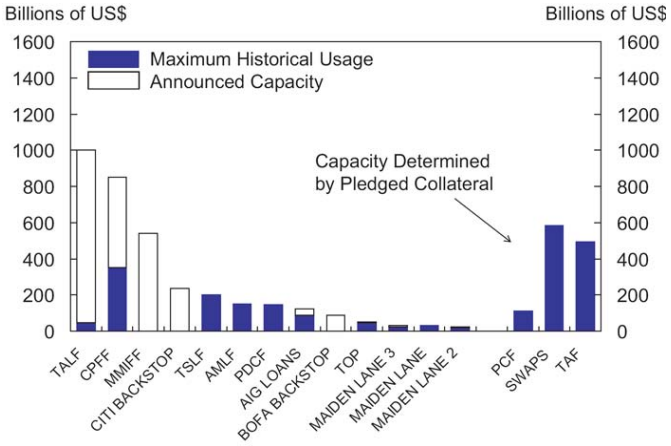
Government support proved effective in reducing the severity of the crisis. Congress passed the Dodd-Frank Act to address the weaknesses in the financial system revealed during the financial crisis and to help prevent another crisis. As Section 6 of this report outlines, implementation of the Dodd-Frank Act is progressing. The Dodd-Frank Act requires enhanced capital requirements for financial institutions and stronger supervision, risk management, and disclosure standards for the largest firms that pose the greatest risk to the system. It also requires the establishment of an orderly liquidation regime for financial companies that otherwise might be perceived as "too big to fail." At the same time, the Dodd-Frank Act eliminated several avenues of government support for firms in a crisis to improve market discipline.

Chart 5.1.1 Federal Reserve Balance Sheet: Assets



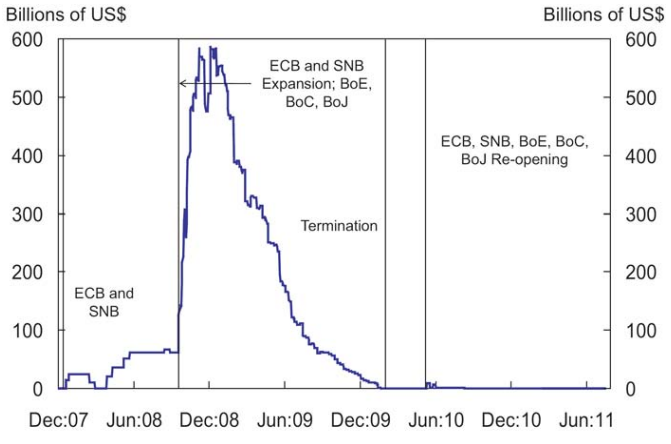
Source: Federal Reserve

Chart 5.1.2 Federal Reserve Facilities



Source: Federal Reserve

Chart 5.1.3 US$ FX Swap Facility Usage Since Inception



Source: FRB

5.1.1 Liquidity Support

Official support was first provided to banks to address liquidity pressures. Liquidity programs broadened to directly or indirectly support the firms and related secondary markets that had increasingly facilitated risk transfer in the global financial system leading up to the crisis. Liquidity support wound down in 2009 as secondary markets returned to more normal functioning.

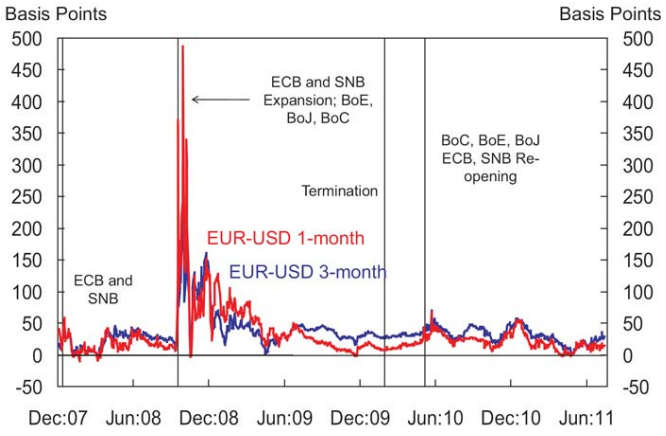
The Federal Reserve provided substantial liquidity support to global markets and institutions ***(Chart 5.1.1)***. That support at first was in the form of extended discount window lending in new ways to banks and, then, emergency lending to independent investment banks that traditionally did not have access to the discount window. Later, facilities were introduced to deal with malfunctioning in specific secondary markets—such as those for repurchase agreements (repos), asset-backed commercial paper, and asset-backed securities—and to support certain institutions.

Federal Reserve facilities were designed to provide collateralized funding at rates above those prevalent for creditworthy borrowers when markets were functioning normally, but below rates available to such borrowers when markets were functioning poorly. Thus, as secondary markets normalized, private sector funding naturally replaced government funding. Use of the facilities relative to announced capacity varied widely, and some of them stabilized markets with little or no drawdown ***(Chart 5.1.2)***.

The first facilities, the Term Auction Facility (TAF) and the central bank liquidity swap lines, were introduced in late 2007 amid pronounced strains in short-term wholesale funding markets. The TAF provided term funding to depository institutions with access to the Federal Reserve's primary credit facilities through an auction process and helped to address domestic dollar funding pressures.

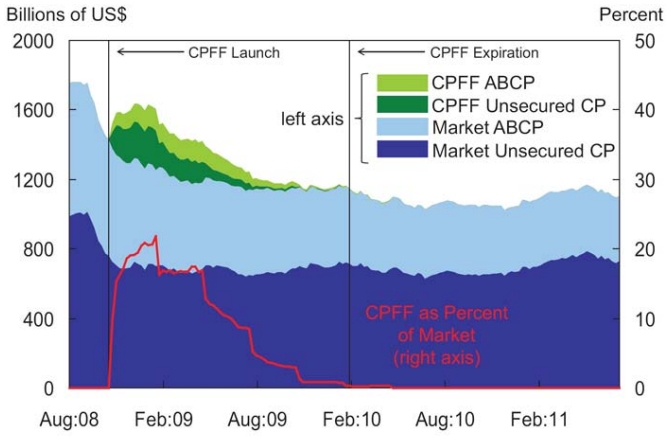
The swap lines gave foreign central banks the capacity to provide U.S. dollar funding directly to institutions in their jurisdictions, enhancing

Chart 5.1.4 EUR-US$ FX Implied Basis Spreads



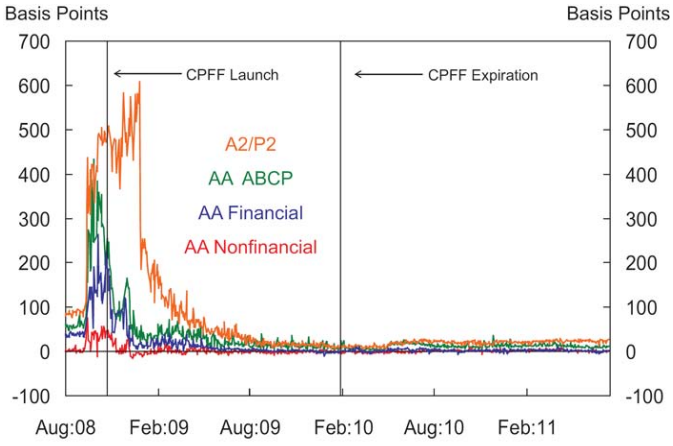
Source: Bloomberg, Reuters, Tullett

Chart 5.1.5 CPFF Support of Commercial Paper Market



Source: FRB, FRBNY, FSOC calculations

Chart 5.1.6 30-Day CP Rates Less 1-Month OIS Rates



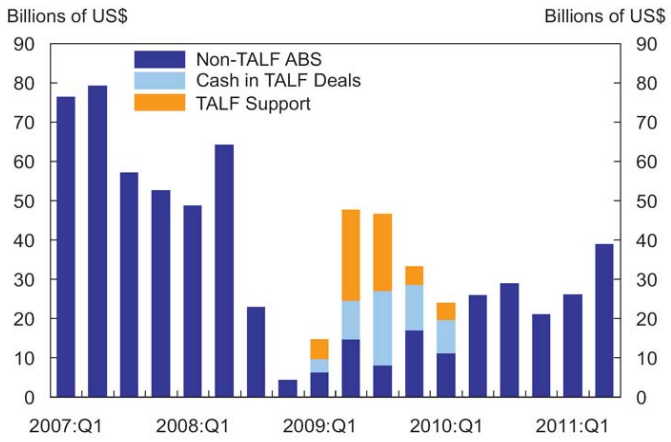
Source: FRB, Bloomberg

U.S. financial stability by relieving pressures in U.S. dollar funding markets and reducing incentives for foreign financial institutions to sell dollar assets at fire-sale prices. The swap lines expired on February 1, 2010, as market conditions normalized and the pricing of funds from the facility became unattractive. However, the Federal Open Market Committee reauthorized currency swap lines in May 2010 in response to the reemergence of strains in short-term U.S. dollar funding markets associated with the fiscal crisis in the peripheral euro area. Use of the swap lines has been minimal since May 2010, reaching a peak of $9.2 billion compared with a previous peak of $586 billion ***(Charts 5.1.3*** and ***5.1.4)***.

Among the many new facilities that were introduced at the height of the crisis, the Commercial Paper Funding Facility (CPFF) and Term Asset-Backed Securities Loan Facility (TALF) involved a wide range of market participants. For example, the CPFF helped financial and nonfinancial firms meet short-term funding requirements by offering collateralized liquidity directly to both secured and unsecured commercial paper (CP) issuers when private markets were frozen after the failure of Lehman Brothers in September 2008. The CPFF self-liquidated according to plan, falling from 20 percent of the market at its peak to less than 1 percent by late 2009 ***(Chart 5.1.5)***. Improvements in market conditions over time, evidenced by contracting spreads, allowed some borrowers to obtain financing from private investors ***(Chart 5.1.6)***. However, decreased use of the CPFF was also driven by a significant decline in the supply of commercial paper, as issuers reduced the size of CP programs and other sources of funding became available.

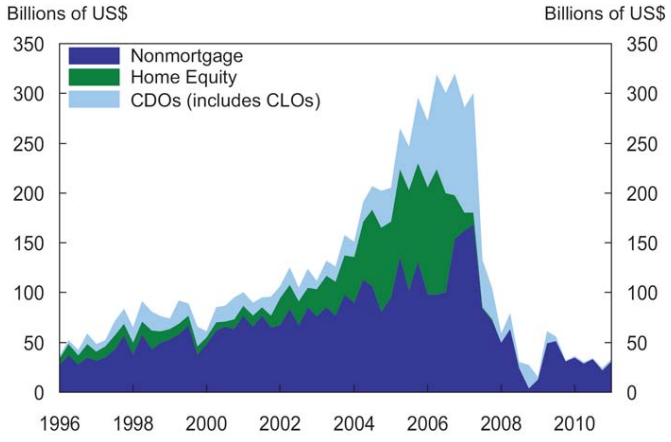
As the recovery progressed, unsecured domestic financial issuers exited the CPFF first, followed by European banks and finally by issuers of asset-backed commercial paper (ABCP). For unsecured domestic financial issuers, the facility was a critical temporary source of funding through the worst of the crisis. European banks required more time to exit the CPFF, because they had limited

Chart 5.1.7 Nonmortgage ABS Issuance



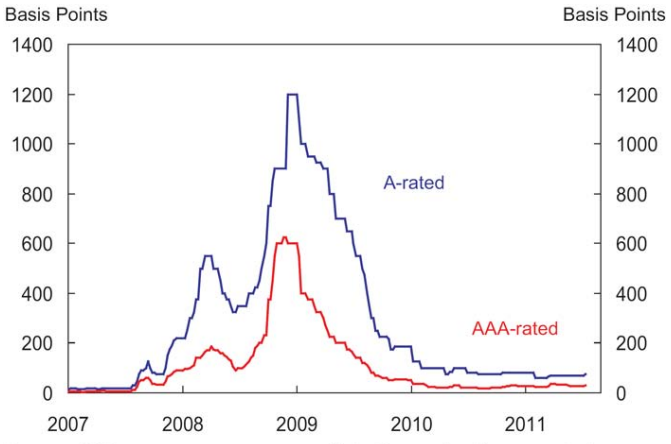
Source: JPMorgan, FRBNY

Chart 5.1.8 ABS Issuance



Source: Asset Backed Alert

Chart 5.1.9 Securitized Auto ABS Spreads



Source: JPMorgan

Note: 3-year duration, spreads to swaps.

options to meet dollar funding needs. For ABCP issuers, the CPFF provided a safety net that allowed them to gradually downsize their ABCP programs with minimal market disruption.

The TALF was established in 2008 as a temporary facility to address the severe deterioration of liquidity in securitized markets that provide critical sources of funding for consumer, small business, and commercial real estate lenders. Unlike subprime residential mortgage securitizations, the seizure in market functioning in the nonmortgage asset-backed security (ABS) and commercial real estate mortgage-backed security (CMBS) markets was not driven by credit concerns but rather by a lack of liquidity. Investors fled indiscriminately from all securitized credit, even though ABS and CMBS structures generally performed well during the crisis. Liquidity provided by TALF helped finance three million auto loans, one million student loans, and 900,000 small business loans. TALF-levered investors led renewed demand for consumer ABS and CMBS. Later, as secondary and then primary market spreads narrowed in these markets, issuance became increasingly less reliant on TALF. This restoration of private funding is most clearly seen in the nonmortgage ABS market ***(Charts 5.1.7***, ***5.1.8***, ***5.1.9***, and ***5.1.10)***.

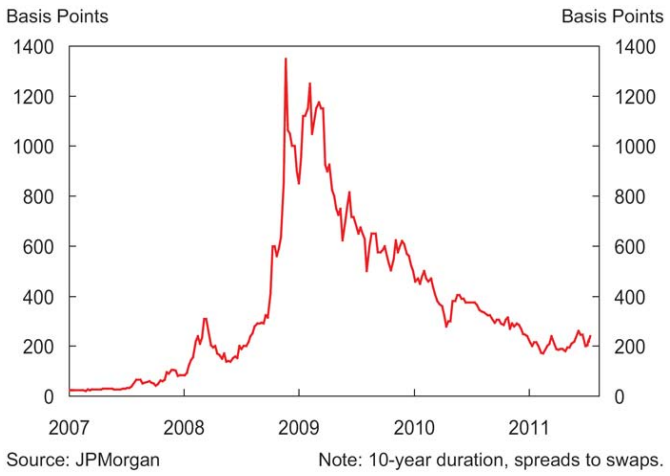
All Federal Reserve loans extended during the crisis were well collateralized. A large fraction of TALF loans have been repaid early. Remaining loans are current in their payments and well collateralized. All other loans were repaid on time, in full, with interest.

5.1.2 Guarantee Support

Temporary programs to guarantee deposits, unsecured bank debt, and investor assets in money market mutual funds helped stabilize investor confidence.

In October 2008, at the peak of the financial crisis, the FDIC introduced the Temporary Liquidity Guarantee Program (TLGP). In addition to the Transaction Account Guarantee Program, the TLGP guaranteed, for a fee, unsecured debt with a term of up to three years issued by financial entities participating in its Debt

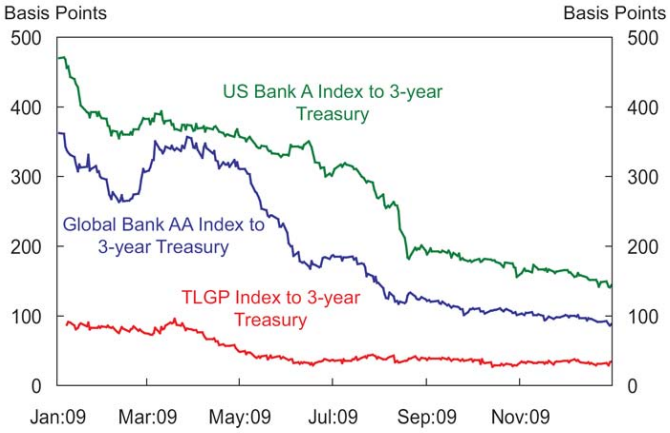
Chart 5.1.10 CMBS AAA Spread



Source: JPMorgan

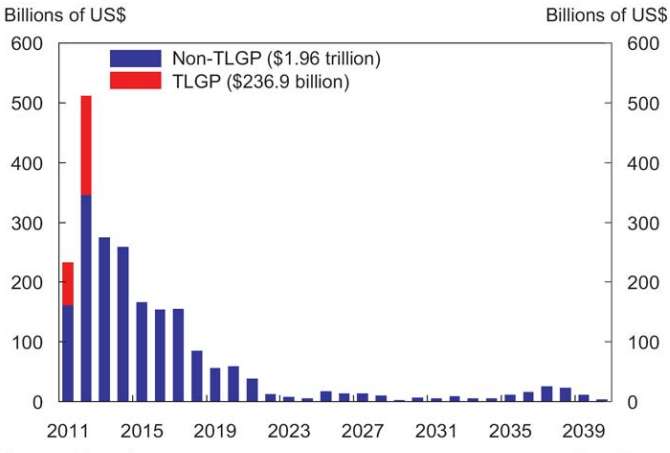
Note: 10-year duration, spreads to swaps.

Chart 5.1.11 Debt Spreads vs. 3-year U.S. Treasury Securities



Source: Bloomberg, FDIC

Chart 5.1.12 Total Debt Outstanding for TLGP Firms



Source: Bloomberg

Note: Dates by maturity, as of 6/30/2011.

Guarantee Program (DGP). The issuance of new guaranteed debt expired on October 31, 2009, and the guarantee on outstanding debt expires on December 31, 2012. The NCUA also introduced temporary guarantees to stabilize the corporate credit union system.

The DGP enabled financial institutions to meet their financing needs during a period of systemwide turmoil and record-high credit spreads. On January 7, 2009, less than three months after the first TLGP medium-term note was issued, the spread between a composite of three-year TLGP debt and three-year U.S. Treasury securities was 88 basis points, while the comparable spread on nonguaranteed bank debt was 458 basis points ***(Chart 5.1.11)***. By the end of the DGP issuance period on October 31, 2009, these spreads had decreased by about two-thirds.

Banks and their holding companies are now issuing nonguaranteed debt at volumes comparable to pre-crisis levels. At the peak of the TLGP, the FDIC guaranteed almost $350 billion of debt outstanding. As of June 30, 2011, the total amount of remaining FDIC-guaranteed debt outstanding was $236.9 billion, of which $70.7 billion will mature in 2011 and the remaining $166.2 billion will mature in 2012 ***(Chart 5.1.12)***. The majority of the debt exposure resides within the largest financial entities.

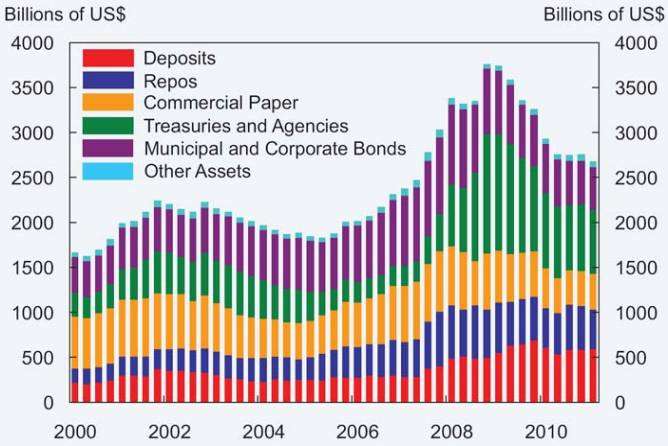
The Treasury Department announced its temporary money market fund guarantee program on September 19, 2008, to stop the run on money market funds (MMFs) ***(Chart 5.1.13)***. Certain structural features of MMFs can produce incentives for investors to cash in shares if they fear that a fund will suffer a loss ***(see Box D: Money Market Funds)***. The temporary guarantee program provided coverage to shareholders for amounts they held in participating MMFs at the close of business on September 19, 2008. The guarantee would have been triggered if a participating fund's net asset value fell below $0.995 per share. The temporary guarantee, along with Federal Reserve facilities aimed at stabilizing markets linked to MMFs, was successful in restoring

Box D: Money Market Funds

The run on money market funds (MMFs) added considerably to market stress during the financial crisis. Some of the key features of MMFs that make them susceptible to runs remain today.

Money market funds are mutual funds that offer individuals, businesses, and governments a convenient way to pool investments in money market instruments. MMFs provide an economically important service by acting as intermediaries between shareholders who desire liquid investments, often for cash management, and borrowers who seek term funding. The composition of MMF assets has recently remained stable among various government and short-duration assets ***(Chart D.1)***.

Chart D.1 Money Market Fund Assets



Source: Flow of Funds

MMFs generally invest in the highest rated (A1/P1-rated) short-term collateral. SEC Rule 2a-7 places stringent limitations on MMF holdings of lower rated securities. MMFs must comply with the rule, which permits these funds to maintain a stable net asset value (NAV) per share, typically $1, through the use of amortized cost accounting and rounding. However, if the mark-to-market per share value of a fund's assets falls more than one-half of 1 percent, or below $0.995, the fund must reprice its shares, an event known as "breaking the buck." MMF investors benefit from the simplicity and convenience of the stable NAV feature and from the risk management, monitoring, and diversification services that MMFs provide. However, several of these MMF features contribute to their fragility.

Investors' Incentives and the Fixed NAV

The stable, rounded $1 NAV fosters an expectation that MMF share prices will not fluctuate. However, when shareholders perceive that a fund may suffer losses, each shareholder has an incentive to redeem shares before other shareholders, causing a run on the fund. Such redemptions can accelerate the likelihood of a break-the-buck event to the extent that the fund's asset sales to meet redemptions significantly depress the market value of the fund's remaining assets. In such a scenario, the ability of early redeemers to receive the full $1 NAV is essentially subsidized by the losses absorbed by remaining shareholders.

Maturity Transformation and Liquidity

MMFs offer shares that are payable on demand, but they invest in cash-like instruments and in short-term securities that are less liquid. Redemptions in excess of the cash-like assets (or liquidity buffer) may force funds to sell their less liquid assets. When money markets are strained, funds may not be able to obtain full value (that is, amortized cost) for such assets in secondary markets and may incur losses. Investors thus have an incentive to redeem shares before a fund has depleted its cash-like liquidity buffer.

Low Risk Tolerance

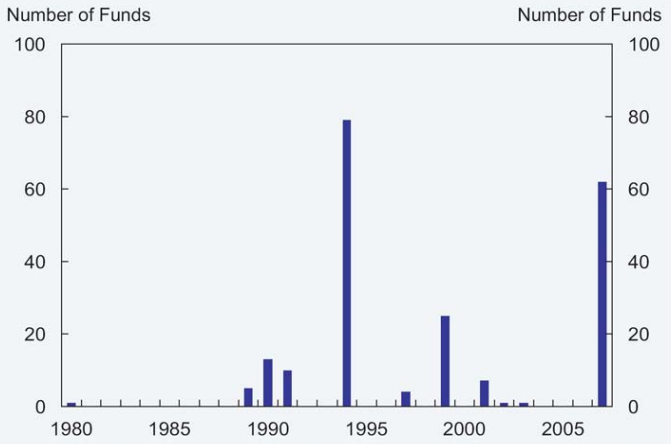
Risk-averse investors are attracted to MMFs because they offer yield above that of a risk-free asset yet have a history of maintaining stable value and meeting all withdrawal requests on demand. These investors are prone to flight when losses appear possible. In particular, institutional investors, which currently account for about two-thirds of assets under management in MMFs, exhibit extreme aversion to absorbing even small losses. Institutional investors tend

to be less tolerant of fluctuations in share prices, have larger amounts at stake, and are quicker to respond to events that may threaten the stable NAV.

Expectation of Sponsor Support

MMFs invest in assets that may lose value, but funds have no formal capital buffers or insurance to absorb loss and maintain their stable NAV. When losses do occur, MMFs have historically relied on discretionary sponsor support to maintain a stable NAV and preserve the franchise value of fund management businesses ***(Chart D.2)***. That support may come in the form of capital contributions or the purchase of assets that have lost value, for example.

Chart D.2 Money Market Fund Sponsor Support



Source: Moody's

Note: 2007, 2008, and 2009 are aggregated.

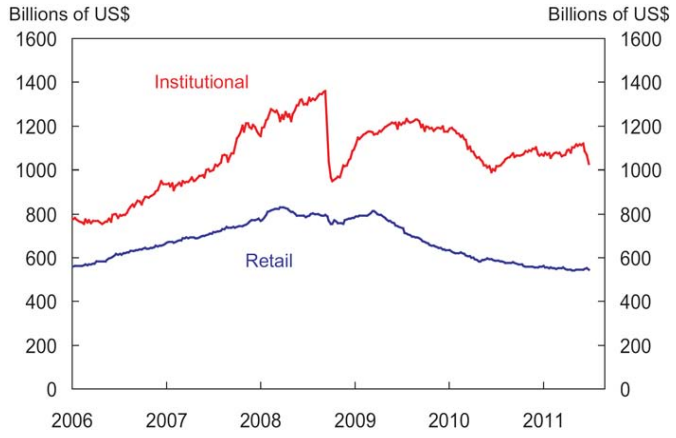
Sponsors do not commit to support an MMF in advance, however, because an explicit commitment may require the sponsor to consolidate the fund on its balance sheet. Thus, although investors ostensibly bear the risk of an MMF breaking the buck, sponsors have in the past borne that risk themselves, fostering the perceived safety of MMF investments. Moreover, the uncertainty about the availability and sufficiency of such support during crises, and the fact that many MMFs lack deep-pocketed sponsors, contribute to their susceptibility to runs.

Expectation of Government Support

Given the unprecedented government support of MMFs during the crisis in 2008 and 2009, even sophisticated institutional investors and fund managers may have the impression that the government would be ready to support the industry again with the same tools. This expectation may give fund managers incentives to take greater risks than are prudent and may reduce sponsors' incentives to support funds in times of stress. Such expectations may be particularly misaligned given that Congress has since prohibited the Treasury from using the fund that it used to support the MMFs for this purpose.

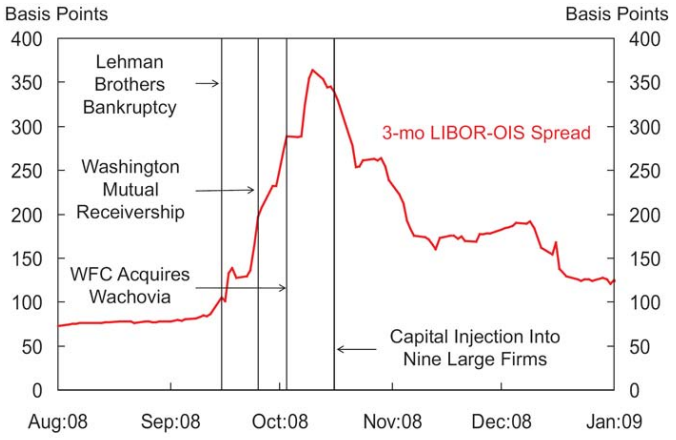
In February 2010, the SEC adopted new rules for MMFs to make these funds more resilient to market volatility and to credit and liquidity risk. First, the SEC introduced new risk-limiting restrictions, including increased liquidity requirements, restrictions on the ability of MMFs to purchase lower quality securities, and maturity restrictions that reduce the maximum allowable weighted average maturity of funds' portfolios. Funds also are required to stress test their ability to maintain a stable NAV. Second, the SEC's new rules permit a fund's board—if it determines that the fund's NAV per share is at imminent risk of falling, or has fallen, below $1—to suspend redemptions promptly and liquidate its portfolio in an orderly manner to limit contagion effects on other funds. Finally, the new rules impose requirements to disclose portfolio holdings and mark-to-market (shadow) NAV, which gives the SEC a window on MMF activity and helps investors impose strong market discipline. Although these new rules are a positive first step, the SEC recognizes that they address only some of the features that make MMFs susceptible to runs, and that more should be done to address systemic risks posed by MMFs and their structural vulnerabilities.

Chart 5.1.13 Prime Money Market Fund Assets



Source: ICI

Chart 5.1.14 The Financial Panic in the Interbank Market



Source: Bloomberg

Chart 5.1.15 Price-to-Book Ratio of 6 Large Complex BHCs

Source: Bloomberg, FRBNY

Note: Market-cap weighted average.

investor confidence; it expired in September 2009 without any claims.

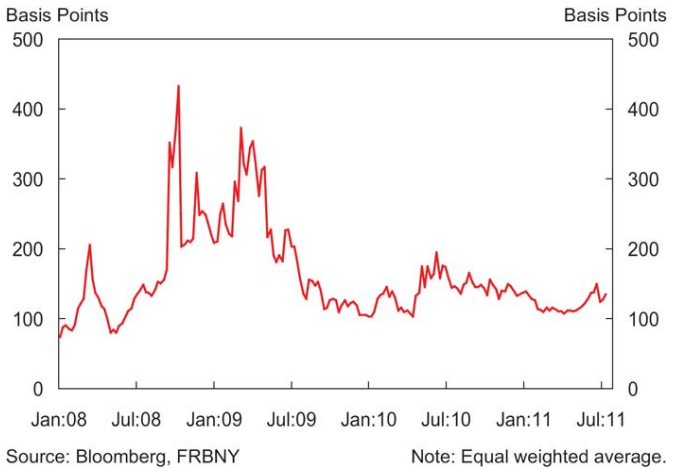
5.1.3 Capital Support

Government capital injections were required to stabilize regulated financial entities at the peak of the crisis. Many U.S. financial institutions were able to replace government capital with private sources as investors gained confidence from the Supervisory Capital Assessment Program (SCAP), financial conditions normalized, and the economy began to recover.

During the financial panic in September 2008, market participants became acutely concerned about the solvency of the nation's regulated banking institutions, particularly after the failure of the largest thrift institution and the acquisition of the fourth-largest bank holding company (BHC) by the fifth-largest BHC. One measure of the extent of concern is the behavior of the LIBOR-OIS spread, which captures the premium that banks require to lend to each other in the short-term money market ***(Chart 5.1.14)***. This spread jumped from under 100 basis points to over 350 basis points. With well-functioning secondary markets and the absence of counterparty solvency fears, this spread is typically under 25 basis points ***(Chart 5.0.1)***.

To restore confidence and directly bolster the capital base of the banking system, the Treasury Department drew on the $700 billion that Congress had made available through the Troubled Asset Relief Program (TARP) to address the market dislocation. It immediately injected $125 billion of capital into nine institutions. Over the next few months, the Treasury Department injected a total of $204.9 billion of capital through the Capital Purchase Program and invested $40 billion through the Targeted Investment Program. Despite the massive government intervention to support the banking system, access to private capital was severely limited. Many large banks had market capitalizations well below their book value ***(Chart 5.1.15)***, and measures of default risk were exceptionally high ***(Chart 5.1.16)***.

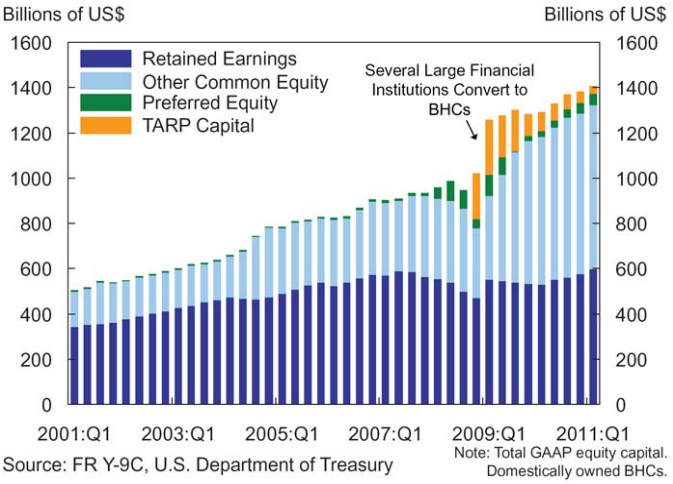
Chart 5.1.16 CDS Spreads of 6 Large Complex BHCs



Source: Bloomberg, FRBNY

Note: Equal weighted average.

Chart 5.1.17 Aggregate Large BHC Total Equity Capital



Source: FR Y-9C, U.S. Department of Treasury

Note: Total GAAP equity capital. Domestically owned BHCs.

In 2009, the SCAP provided an assessment of the capital needs of the 19 largest BHCs under alternative macroeconomic scenarios to ensure that they could continue to provide key financial services, even if the recession was longer and deeper than the consensus forecast. Ten of the 19 BHCs were told that they needed to raise additional capital of $75 billion in the aggregate. The presence of an additional government backstop of capital to banks and the confidence-enhancing clarity produced by the SCAP assessment reopened the equity market for most of the large banks. As of first quarter 2011, banks had raised over $300 billion in equity from the market and conversions and returned $220 billion of their TARP funds to the Treasury ***(Chart 5.1.17)***.

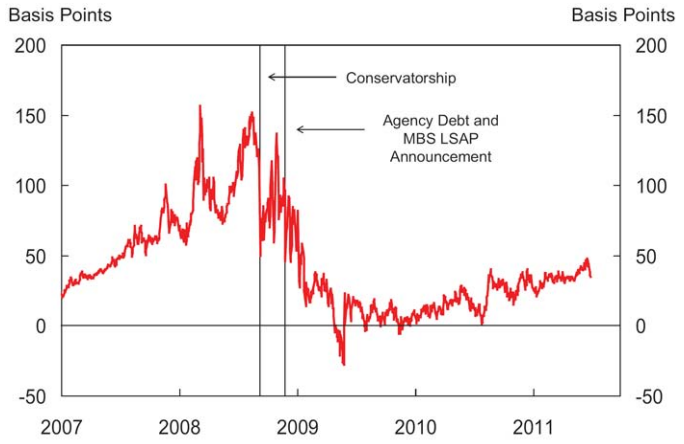
5.1.4 Housing Finance Support

The housing finance market was the first and biggest market to lose liquidity during the financial crisis. Substantial government intervention sustained the market during the crisis and remains in place today.

Mortgage-related losses led to capital shortfalls at the two government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, and a sharp decline in net income at the Federal Home Loan Bank System (FHLB). The federal government injected capital into Fannie Mae and Freddie Mac to stabilize the mortgage market, and the FHFA placed restrictions on capital distributions at several Federal Home Loan Banks.

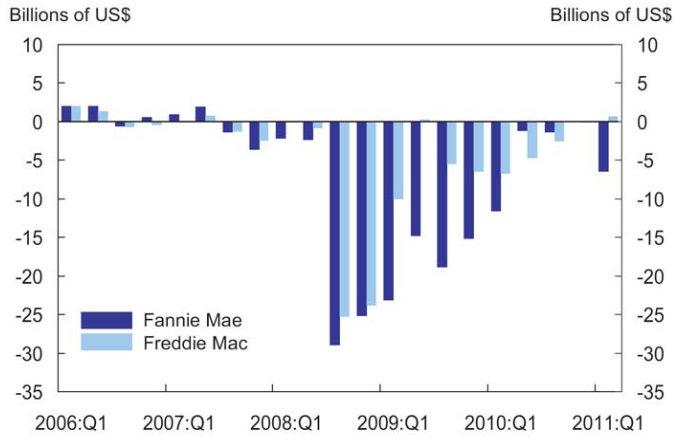
Fannie Mae and Freddie Mac reported a $109 billion combined net loss in 2008 owing to rising defaults on loans underlying the mortgage-backed securities (MBS) they had guaranteed in their securitization businesses (agency MBS) and to losses on their direct investments in MBS. These losses eroded the two companies' capital and led to a steep widening of spreads in the MBS market relative to Treasury yields, which in turn increased the cost of new mortgage loans to homeowners.

Chart 5.1.18 Fannie Mae Option-Adjusted Spreads



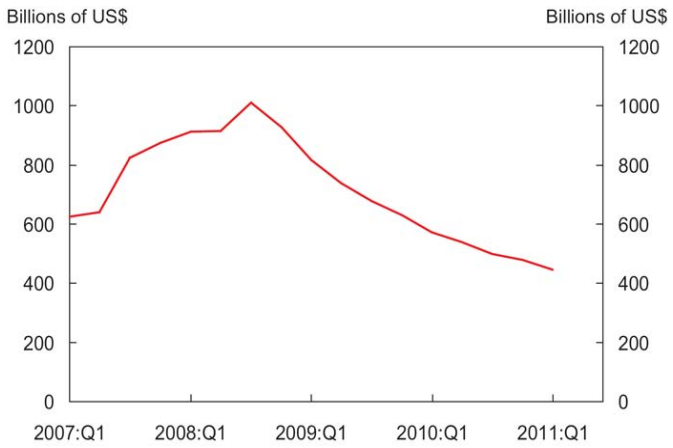
Source: Barclays Capital Note: 30-year current coupon spread to Treasuries.

Chart 5.1.19 GSE: Net Income and Losses



Source: SEC filings, company reports

Chart 5.1.20 FHLB Bank Advances



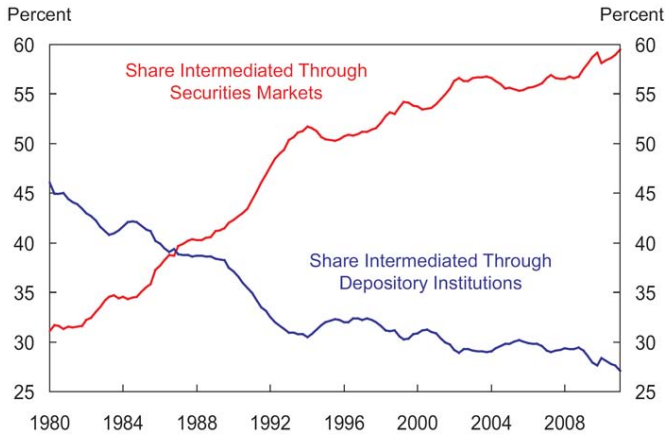
Source: FHFA

To stabilize the mortgage market, FHFA placed Fannie Mae and Freddie Mac into conservatorship, and Treasury entered into a senior preferred stock purchase agreement in September 2008 to ensure that these two GSEs would have a positive net worth. Joint action by the FHFA and the Treasury Department, coupled with large purchases in the agency MBS market by Treasury and the Federal Reserve, stabilized the agency MBS market. These combined actions resulted in a sharp improvement in spreads and restored a measure of calm to the agency MBS market ***(Chart 5.1.18)***.

Treasury and FHFA increased the funding commitment to $200 billion for each GSE in May 2009, then amended the agreement again in December 2009. The December amendment added flexibility to the funding commitment by setting it at $200 billion plus any cumulative deficiency amount determined for quarters in calendar years 2010, 2011, and 2012, less any amount by which assets exceed liabilities at December 31, 2012, and less any existing amount of funding under the commitment. This ensured that the GSEs would have a positive net worth as losses continued to mount. Treasury holdings of GSE preferred stock as of first quarter 2011 totaled $162.4 billion at a net cost after dividend payments of $138.2 billion. The funding commitment will become fixed again on December 31, 2012 ***(Chart 5.1.19)***.

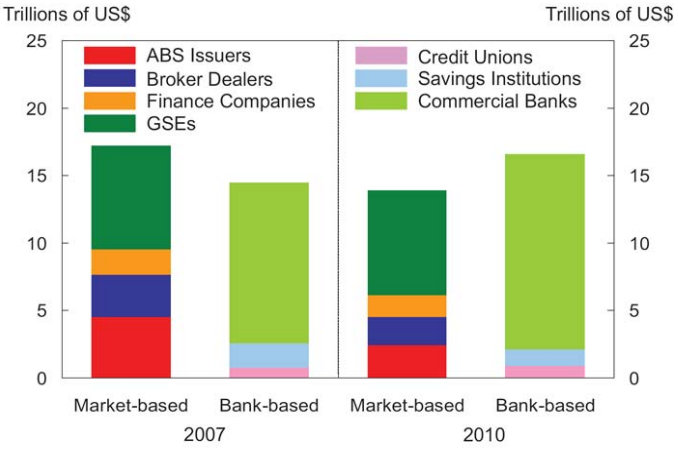
The FHLBs fared better than Fannie Mae and Freddie Mac, and became an important source of funding for many struggling financial institutions during the crisis. Since peaking at the end of 2008, FHLB advances have declined sharply ***(Chart 5.1.20)***. Despite the increase in advances in 2008, net income for the consolidated system declined by 57 percent in 2008 compared with 2007, primarily because of losses on private-label securities at 6 of the 12 banks. Net losses were reported by three Federal Home Loan Banks in 2008 and four in 2009. Several of the banks became subject to restrictions on dividends and capital because of their weakened financial condition.

Chart 5.2.1 Origin of Private Nonfinancial Debt Outstanding



Source: Flow of Funds, Morgan Stanley calculations

Chart 5.2.2 Bank vs. Market Intermediated Credit Outstanding



Source: Flow of Funds, FSOC calculations

5.2 Evolution of the Financial System

Over the past 30 years, market-based intermediation of credit, such as securitization, increased relative to bank-based intermediation, such as direct lending ***(Chart 5.2.1)***. Many of these market-based intermediation channels became severely disrupted during the financial crisis and shrank in size ***(Chart 5.2.2)***. Meanwhile, the crisis reinforced the secular increase in the concentration of the banking sector and changes in its business model.

Economic growth, demographics, and financial innovation have been factors behind the large increases in the financial asset holdings of U.S. households and businesses. While most asset management firms, pension funds, and insurance institutions were only indirectly affected by the crisis, the crisis highlighted their importance in providing both short-term and long-term funding to the financial sector.

Technological advances, changes in regulation, and globalization have produced dramatic changes in trading and market-making practices. The greater complexity of the financial system has been supported in part by developments in financial infrastructure and the increasing use of electronic payments and computerized record keeping.

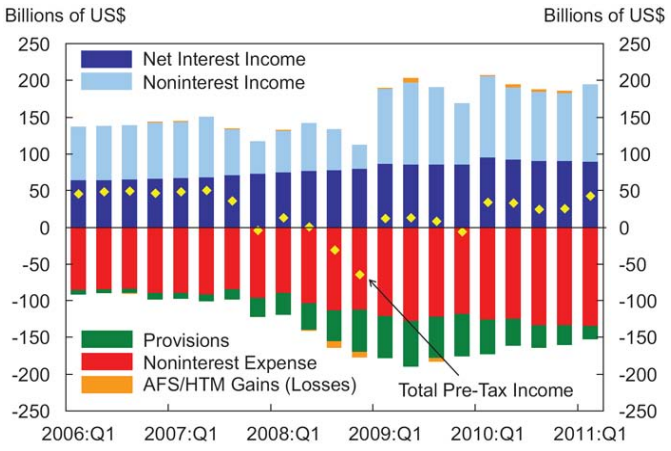
Part I. Institutions

5.2.1 Bank Holding Companies

The financial crisis has changed the landscape for the largest BHCs. While the income of BHCs has improved significantly over the past two years, it remains substantially below the pre-crisis level. Assets held by foreign banking organizations (FBOs) in the United States have increased notably since the crisis.

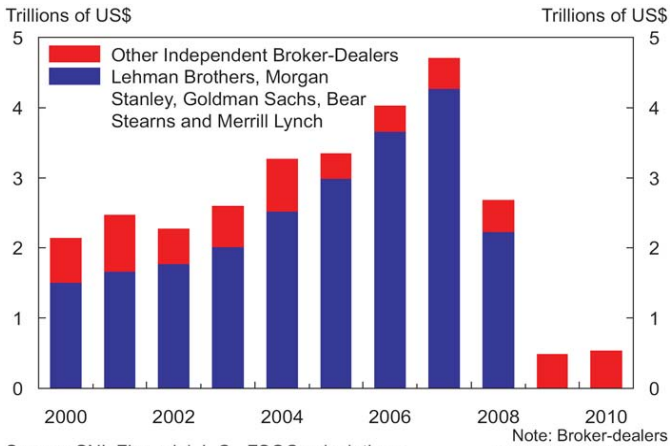
Most commercial banks in the United States are owned by a BHC, which can own other subsidiaries, such as a broker-dealer. Bank holding companies are regulated by the Federal Reserve on a consolidated basis and are subject to capital standards similar to those of banks. There are nearly 5,000 BHCs in the United States, with aggregate assets of about

Chart 5.2.3 Large Bank Holding Company Pre-Tax Income



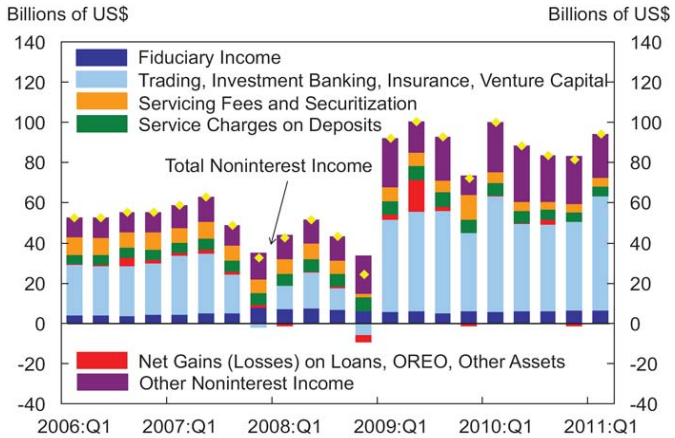
Source: FR Y-9C Note: Includes only domestically owned BHCs that file Y-9C reports.

Chart 5.2.4 Independent Broker-Dealer Assets



Source: SNL Financial, L.C., FSOC calculations Note: Broker-dealers independent of a BHC.

Chart 5.2.5 SCAP Bank Noninterest Income



Source: FR Y-9C

$17 trillion. Most of these companies own only one commercial bank. There are 75 companies with assets over $10 billion which, combined, account for over 85 percent of all BHC assets.

Pretax net income across all BHCs totaled $116.7 billion in 2010 ***(Chart 5.2.3)***. While this was a significant improvement over the previous two years, it was nearly 40 percent below the 2006 level. Net revenue (net interest income plus noninterest income) held up fairly well through the crisis. However, as asset quality deteriorated, provisions for loan losses increased sharply.

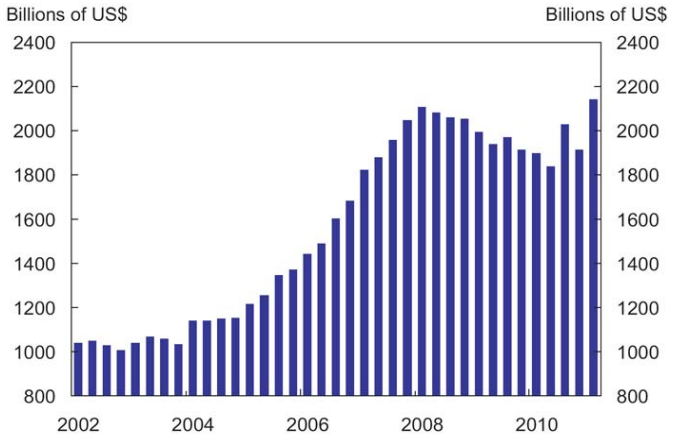
The financial crisis had a profound effect on large complex financial institutions (LCFIs). Several large banking organizations were acquired by LCFIs as a result of mergers or FDIC-assisted transactions. Additionally, four of the five largest independent broker-dealers were either acquired by or converted to BHCs in 2008 ***(Chart 5.2.4)***. These developments added more than $2 trillion to total BHC assets and had implications for the business models of the largest BHCs, as they now derive a higher share of income from investment banking and trading activities ***(Chart 5.2.5)***.

The assets held by FBOs in the United States have increased notably since the financial crisis ***(Chart 5.2.6)***. The percentage of U.S. commercial banking deposits held by FBOs has been relatively constant over the past decade. Primarily through acquisitions, they expanded their presence in activities less dependent on deposit financing, such as repo, securities and derivatives trading, prime brokerage, and other investment banking activities. FBOs hold a large and increasing percentage of their U.S. assets outside of domestically chartered BHCs.

5.2.2 Insured Depository Institutions

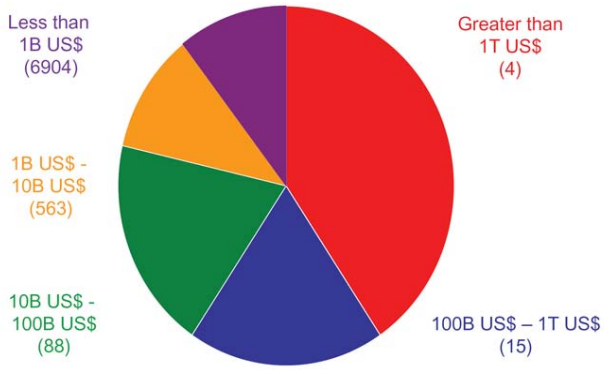
The commercial banking industry has become increasingly concentrated over recent decades among fewer, larger institutions, a trend that has accelerated since the financial crisis. While revenue held up fairly well, the industry set aside nearly one-third of revenue in loan loss provisions over the past two years.

Chart 5.2.6 Assets of Foreign Bank Branches and Agencies



Source: FFIEC 002

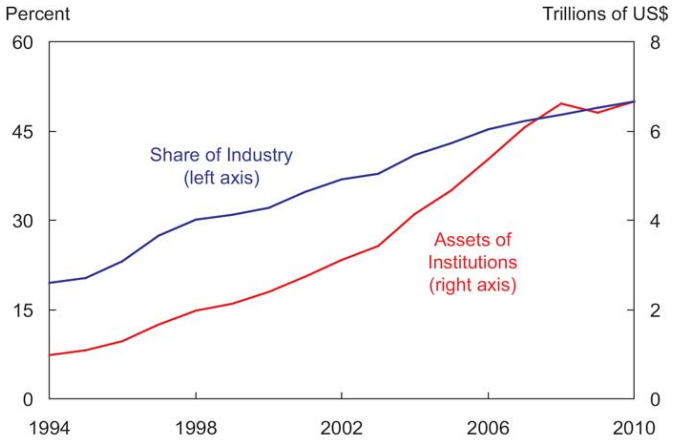
Chart 5.2.7 Asset Distribution of FDIC-Insured Institutions



Source: FDIC

Note: Total Assets $13.4T, as of 2011:Q1.

Chart 5.2.8 Assets of the Ten Largest Depository Institutions



Source: FDIC

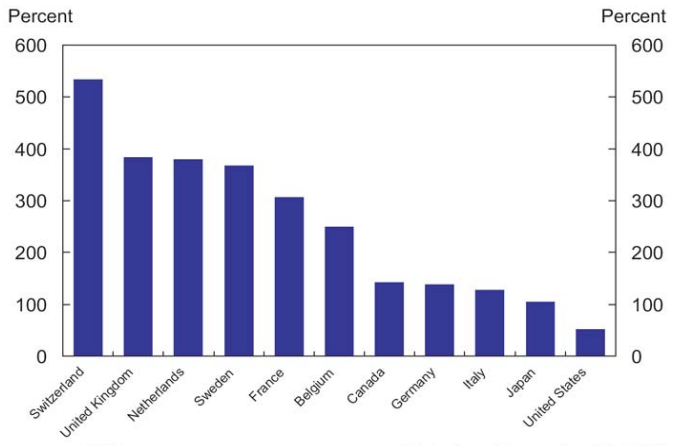
Commercial Banks and Thrifts

The banking industry is composed of more than 7,500 commercial bank and thrift institutions. Of these, more than 6,900 institutions have assets less than $1 billion, while 88 institutions have assets between $10 billion and $100 billion, and 19 institutions have assets over $100 billion ***(Chart 5.2.7)***. Over the past few decades, the industry has become increasingly concentrated among fewer, larger institutions as they expanded to achieve economies of scale and branched across state lines, and as federal legislation enabled them to conduct trading and other investment banking activities. Failures, mergers, and subdued new chartering activity during and after the crisis have contributed to further consolidation. Over the past decade, the number of institutions has fallen by 25 percent, and the 10 largest institutions now hold approximately 50 percent of industry assets ***(Chart 5.2.8)***. Overall, there has been a steady, long-term increase in assets at commercial banks and thrifts as population and wealth rose. Over the past decade, industry assets have risen from 75 percent of GDP to 90 percent.

Despite the rising concentration over recent years, the U.S. banking industry remains much less concentrated than banking in many other countries, and the size of the largest banks relative to GDP is still low when compared to other countries ***(Chart 5.2.9)***. Small banks and credit unions remain an important source of financing for consumers and businesses, particularly small businesses, in communities across the country.

Pretax net income for the U.S. banking industry totaled $122.5 billion in 2010 ***(Chart 5.2.10)***. While this was a significant improvement over the previous two years, it was 44 percent below the 2006 level. Industry net revenue held up fairly well throughout the crisis, rising each year from 2006 to 2010, but provisions for loan losses increased sharply beginning in 2007 and peaked in 2009, when they absorbed 103 percent of the industry's net revenue. The industry set aside nearly $625 billion in loan loss provisions between 2008 and 2010, which was nearly one-third of industry net revenue.

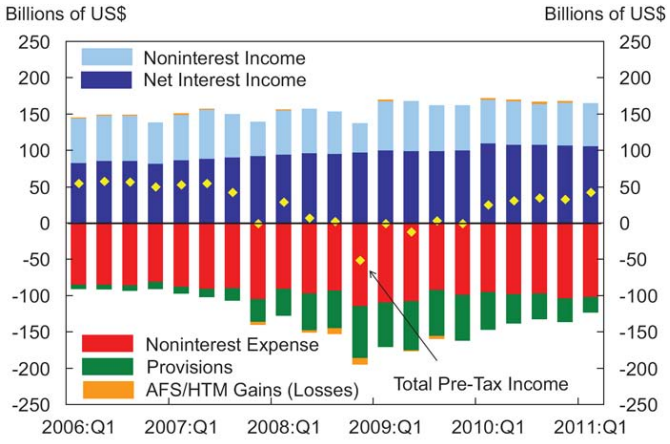
Chart 5.2.9 Largest 4 Banking Institutions as Percent of GDP



Source: FDIC

Note: As of December 31, 2010.

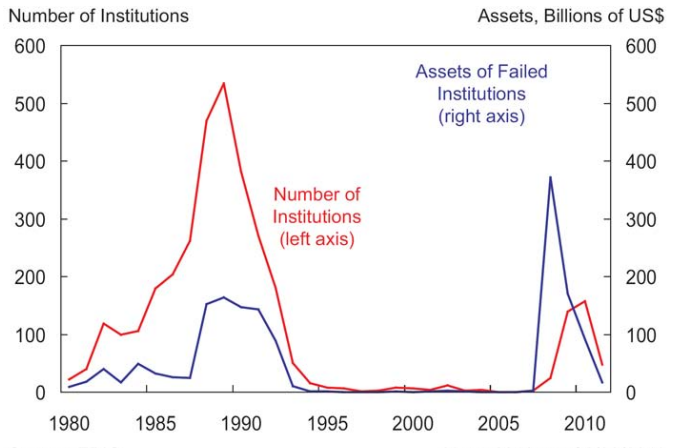
Chart 5.2.10 Commercial Bank and Thrift Pre-Tax Income



Source: FDIC

Note: Includes all chartered commercial banks and thrifts.

Chart 5.2.11 FDIC-Insured Failed Institutions



Source: FDIC

Note: 2011 as of 6/30/2011.

As the crisis has unfolded, 370 bank and thrift failures have occurred through June 30, 2011, or 4.5 percent of institutions operating at the beginning of 2008. While the level of bank and thrift failures remains elevated, the rate is beginning to decline. Although fewer institutions have failed since the beginning of the financial crisis compared with failures during the savings and loan crisis of the late 1980s and early 1990s, the value of failed-bank assets has been much higher this time ***(Chart 5.2.11)***. At the end of first quarter 2011, the number of institutions on the FDIC's "problem" list (institutions with financial, operational, or managerial weaknesses that threaten their continued financial viability) was 888, nearly 12 percent of all institutions.

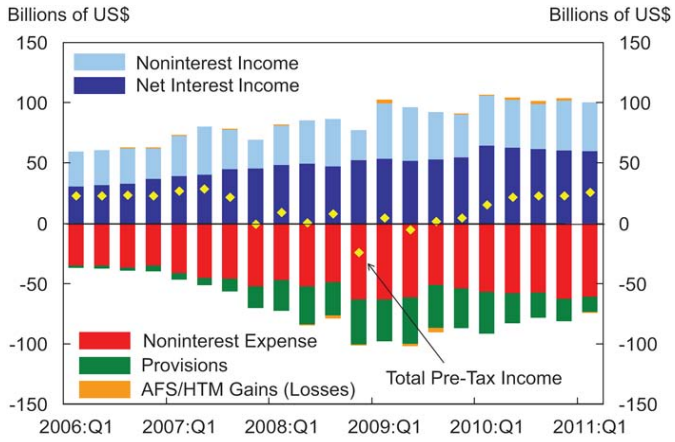
The nation's largest banking institutions (those with over $100 billion in assets) have recovered from the financial crisis to a greater extent than community banks (institutions with less than $1 billion in assets). Pretax net income is down nearly 75 percent at community banks from the 2006 level, while it is down by 12 percent at the largest institutions ***(Charts 5.2.12*** and ***5.2.13)***. Although both the largest institutions and community banks have benefited from reductions in loan loss provisions, community banks have experienced a smaller increase in net revenue than large banks. In addition, community banks continue to deal with credit problems associated with their still-sizable commercial real estate portfolios.

Credit Unions

Credit unions are nonprofit, cooperative financial institutions. Members pool their funds, and these funds are then lent to members. Credit unions differ from commercial banks and thrifts in that the members are also the owners. Currently, there are nearly 7,300 retail credit unions with approximately $940 billion in assets and 26 corporate credit unions, which are organized to provide services to the retail credit unions.

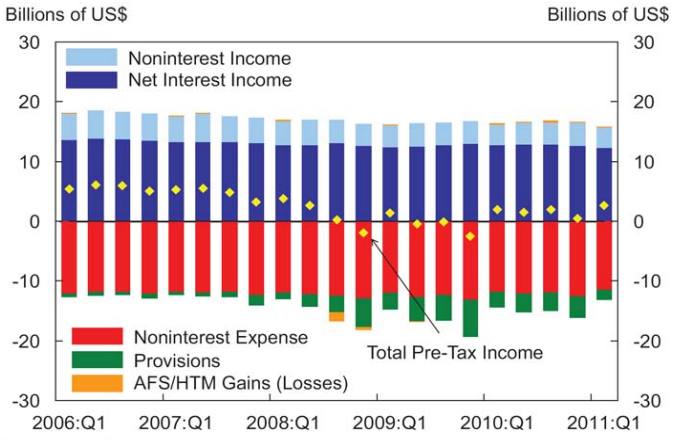
The credit union experience was similar to that of commercial banks: the system experienced a deterioration of asset quality during the financial crisis, although delinquency rates and

Chart 5.2.12 Large Bank Pre-Tax Income



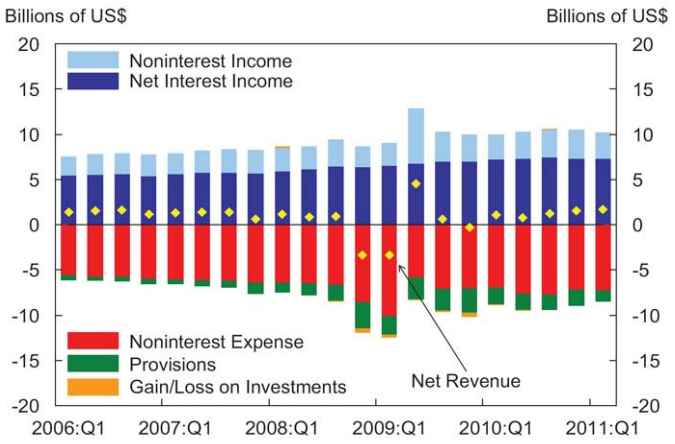
Source: FDIC Note: Chartered commercial banks and thrifts w/ assets >100 Billion.

Chart 5.2.13 Community Bank Pre-Tax Income



Source: FDIC Note: Chartered commercial banks and thrifts w/ assets <1 Billion.

Chart 5.2.14 Federally Insured Credit Union Income



Source: NCUA

provisions have been less severe than those in the banking industry ***(Chart 5.2.14)***. Credit union net revenue totaled $4.6 billion in 2010, up significantly from the previous two years but 20 percent below the 2006 level. Net income rose by 33 percent from 2006 to 2010, while provisions for loan losses peaked in 2009, when they absorbed nearly 20 percent of net income.

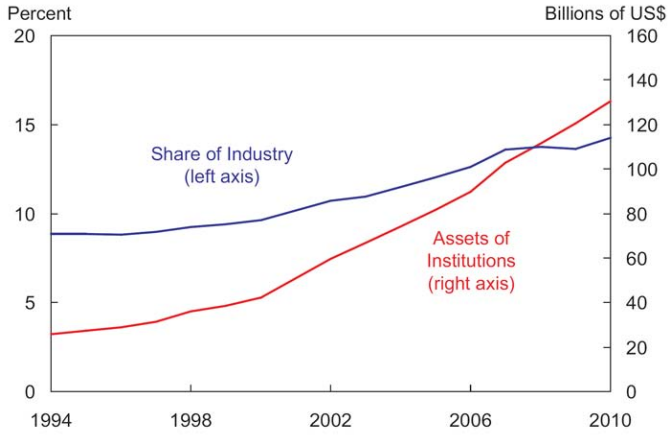
As in the banking industry, assets in the credit union system have increased and the system has become more concentrated, although less so than commercial banking ***(Chart 5.2.15)***. Assets of the credit union system rose from 4.4 percent of GDP to 6.2 percent over the past decade. The number of credit unions has fallen by nearly 30 percent over the same period, with the 10 largest institutions now holding nearly 15 percent of system assets. The severe economic downturn led to losses at retail credit unions and the failure of several large corporate credit unions, as a result of declines in the value of mortgage-related assets held by these institutions. To address these failures and reform the corporate credit union system, key regulatory reforms have been implemented to improve capital, restrict investments, enhance asset-liability management, and enhance corporate governance provisions.

5.2.3 Specialty Lenders

Specialty lenders are important providers of credit to a number of markets that have not been fully served by the traditional banking industry. Specialty lenders struggled through the financial crisis because of their heavy reliance on the capital funding markets, but they have recovered to a large extent and are continuing to serve their customer base.

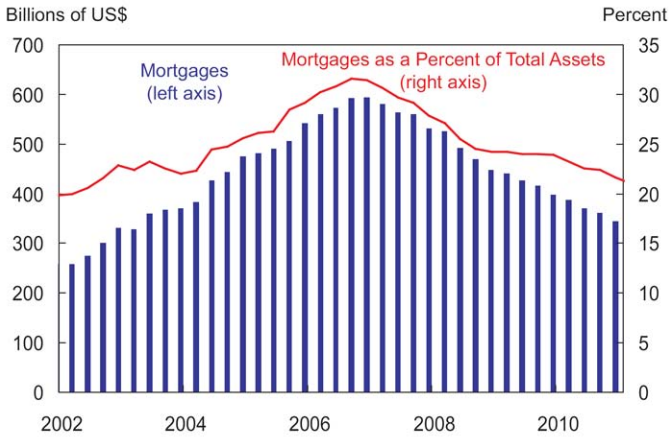
The specialty lending sector, which plays a significant role in market-based intermediation, grew dramatically before the crisis as market-based intermediation expanded. Much of the growth was in mortgage lending backed by Fannie Mae and Freddie Mac, the two large GSEs. Finance companies and real estate investment trusts (REITs)—tax-advantaged legal entities that are required to hold 75 percent of their assets in and generate 75 percent of their income from mortgages and mortgage-related

Chart 5.2.15 Assets of the Ten Largest Credit Unions



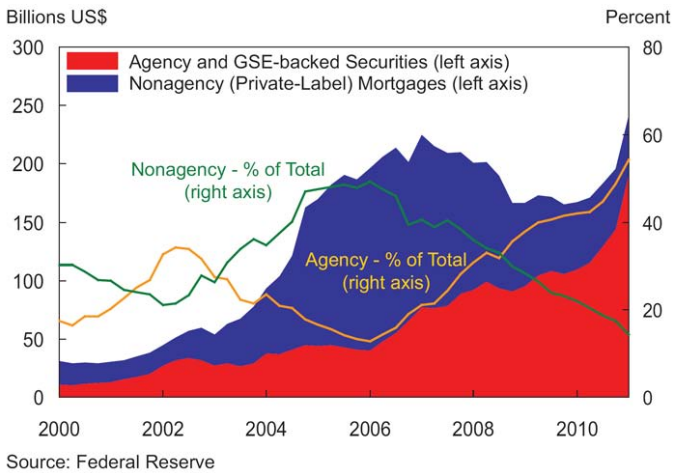
Source: NCUA

Chart 5.2.16 Finance Company Mortgage Assets



Source: Federal Reserve

Chart 5.2.17 Real Estate Investment Trust (REIT) Assets



Source: Federal Reserve

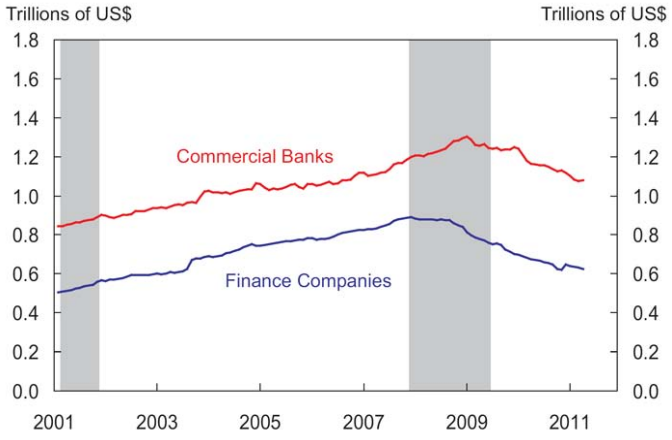
holdings—played an increasing role ***(Charts 5.2.16*** and ***5.2.17)***. Mortgage lending by these firms contracted sharply following the collapse of the securitization business model. Recently, however, REITs have attracted private capital for agency MBS investment because of the high dividend yields they offer, facilitated by the low-rate environment and steep yield curve.

With the government's conservatorship of the two large GSEs, the remaining specialty lending sector can be split into three broad types: small niche firms, finance entities that are captive to a manufacturer, and large diversified firms. Specialty lenders remain an important provider of credit to households and businesses for the purchase and leasing of a wide variety of goods and services, including automobiles, household durables, education, office equipment, and commercial aircraft. At year-end 2010, finance companies owned or managed approximately $600 billion in nonmortgage consumer loans and leases and approximately $500 billion in business loans and leases ***(Charts 5.2.18*** and ***5.2.19)***.

The sector is concentrated; for example, approximately three-quarters of consumer receivables on the balance sheet of finance companies at the end of 2010 were held by only 10 companies. The larger specialty lenders generally are either captive subsidiaries of major manufacturing firms that provide financing for the purchase of the parents' products or diversified entities involved in a variety of consumer and commercial business lines. Captives and diversified specialty lenders' businesses are generally global in scope.

Specialty lenders have traditionally relied heavily on the debt markets for funding, because they have only limited deposit offerings, usually through a wholly owned thrift subsidiary or an industrial loan corporation. The traditional business model for many of the large finance companies depends on access to markets for secured and unsecured debt, as well as support from parent manufacturing companies ***(Chart 5.2.20)***. During the financial crisis, certain specialty nonmortgage lenders adopted a BHC structure, which made them eligible to receive government assistance under the TARP.

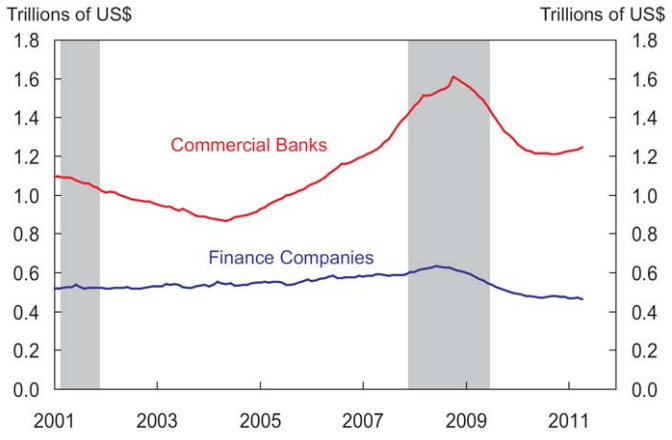
Chart 5.2.18 Consumer Loans Outstanding



Source: Federal Reserve

Note: Loans owned and securitized.

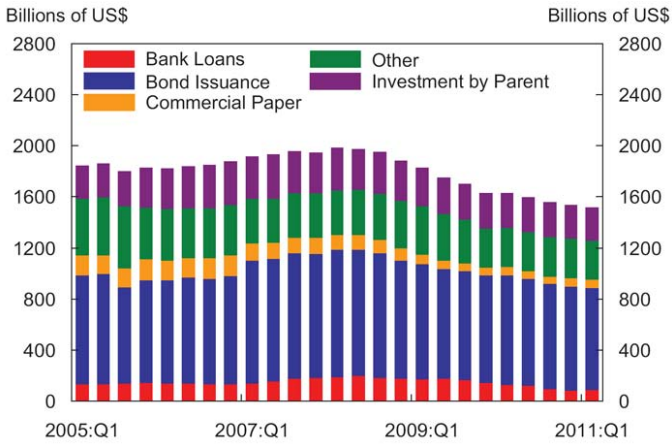
Chart 5.2.19 Business Loans Outstanding



Source: Federal Reserve

Note: Loans owned and securitized.

Chart 5.2.20 Finance Company Liabilities



Source: Flow of Funds

Small specialty lenders, numbering in the thousands, are primarily focused on a specific industry niche or geographic area. These firms obtain financing mainly through bank loans and equity capital; therefore, they may be vulnerable to changes in bank underwriting standards as well as the creditworthiness of their customers. In general, these lenders serve higher risk segments of the economy.

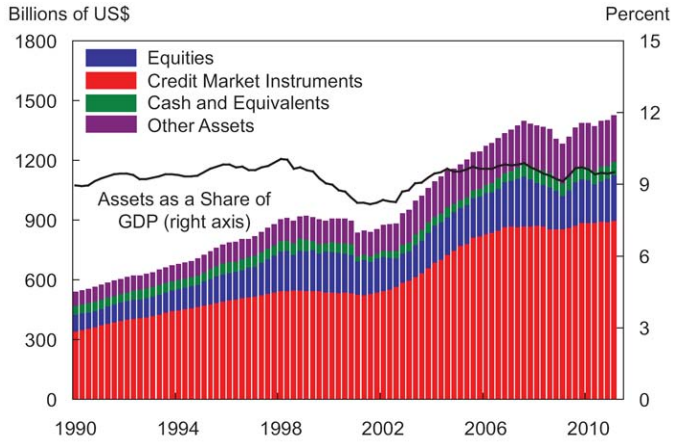
5.2.4 Insurance

The insurance industry is an important source of long-term funding to the economy through its investment of premium income. Insurance companies, with some notable exceptions, generally withstood the financial crisis and have since strengthened their balance sheets. Their investment portfolios have improved along with general financial market conditions. The segment of the industry that provided financial guarantees on mortgages and mortgage-related assets experienced severe difficulties.

Insurance companies are broadly classified into two primary groups: life insurance companies, which sell life insurance, annuities, and other retirement products; and property/casualty insurance companies, which sell personal, professional, and commercial liability insurance. In order to meet future insurance payouts, all insurers invest their premium income in a wide range of assets, thereby providing important long-term funding to the economy. The different asset and capital composition of the life and property/casualty industries reflects distinct claim and benefit payment patterns. In particular, property/casualty companies tend to hold higher credit quality instruments and have greater liquidity needs than life insurance companies ***(Charts 5.2.21*** and ***5.2.22)***.

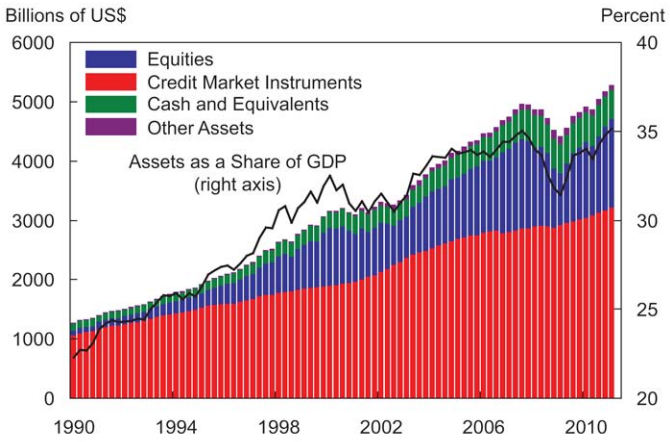
Insurers faced challenges during the financial crisis as asset prices fell sharply and some noncore activities such as securities lending produced large losses. However, the industry withstood the financial crisis quite well in terms of providing insurance services to consumers and businesses. Only 28 of approximately 8,000 insurers became insolvent in 2008 and 2009,

Chart 5.2.21 Property and Casualty Insurance: Assets



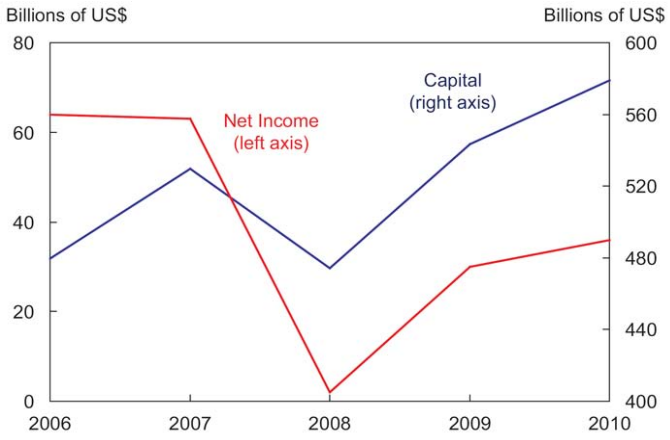
Source: Flow of Funds

Chart 5.2.22 Life Insurance: Assets



Source: Flow of Funds

Chart 5.2.23 Property and Casualty Insurance: Capital and Income



Source: NAIC

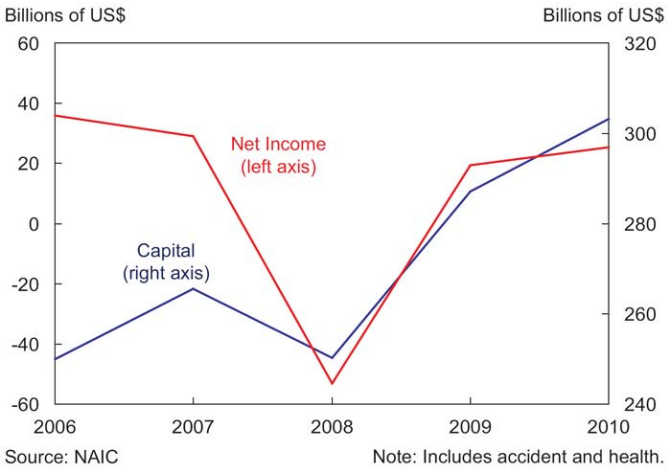
and those insurers are being resolved pursuant to applicable state law. The improvement in financial markets has strengthened the insurance sector's balance sheet and the sector generally is financially healthy.

The property/casualty industry has been in a soft market cycle for the past few years, characterized by highly competitive markets and reduced insurer pricing power. The industry as a whole realized positive net income in 2009 and 2010 ***(Chart 5.2.23)***, and net investment income has remained relatively stable. The industry faced higher than usual claims exposure for the first six months of 2011 due to severe weather in parts of the United States. Similarly to the property/casualty industry, the life insurance sector has experienced reduced premium volumes along with an increase in both policyholder claims and administrative expenses ***(Chart 5.2.24)***. However, these effects were somewhat offset by increases in investment income.

During 2010, general financial market conditions improved and were reflected in insurance company investment portfolios in several ways. Valuation concerns have diminished. Comparisons of fair value to carrying value are less negative, reducing the pressure to take impairments. Improved market conditions also led to more flexibility in managing portfolios without the negative impact of realized losses. However, insurers, state regulators, and the FIO are carefully monitoring exposures to commercial real estate, residential MBS (RMBS), municipal bonds, securities lending, euro area exposures, and derivatives.

The financial guaranty and mortgage guaranty segments of the industry, which are a relatively small portion of the industry as measured by premium income, experienced severe difficulties associated with the decline in house prices and market activity, the increased volume in residential real estate foreclosures, and the impairment in the RMBS market. In particular, due to severe losses, the future viability of the financial guaranty segment (monoline insurers) remains uncertain, with only one monoline group actively writing insurance.

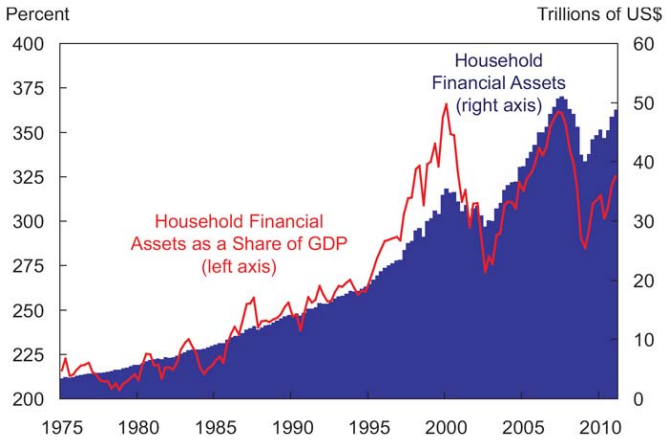
Chart 5.2.24 Life and Other Insurance: Capital and Income



Source: NAIC

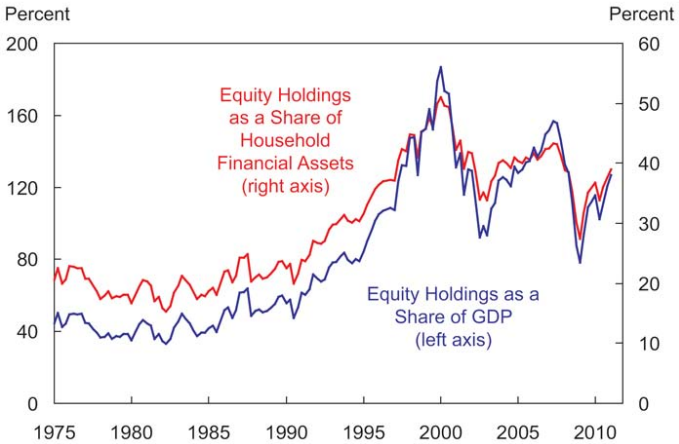
Note: Includes accident and health.

Chart 5.2.25 Household Financial Assets



Source: Flow of Funds, BEA

Chart 5.2.26 Household Equity Holdings



Source: Flow of Funds, BEA

5.2.5 Asset Management

The U.S. asset management industry, with more than $35 trillion under management, is an integral part of the financial system. It has grown with the long-run increase in U.S. household financial assets. A wide range of asset management vehicles, including pension funds and hedge funds, play an important role in the financial system as providers of capital.

The U.S. household sector has built a large stock of financial assets over the past three decades ***(Chart 5.2.25)***. Equity holdings increased over this period and now make up a sizable percentage of both financial assets and GDP ***(Chart 5.2.26)***. Demographic trends should continue to support asset growth, as the baby-boom generation, with its increasing life expectancy, continues to accumulate assets for retirement over the next few years. The aging of the population eventually may have implications for asset allocations.

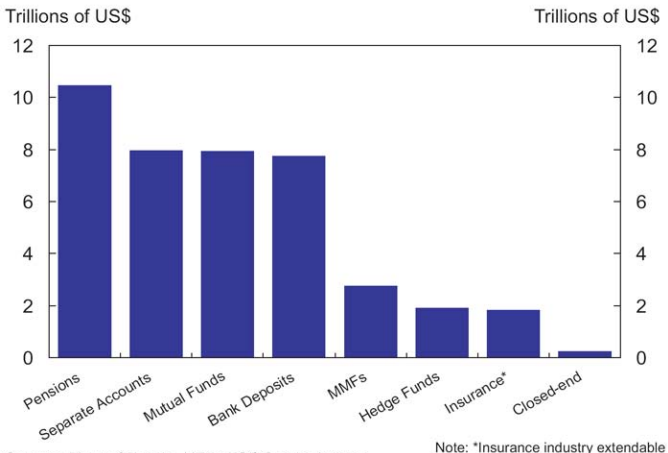
Savers have access to a wide array of investment products through many types of asset managers and vehicles, including money market funds and mutual funds, insurance and retirement funds, and private equity and hedge funds ***(Chart 5.2.27)***.

Mutual Funds and Closed-End Funds

Mutual funds are open-end investment companies, registered and regulated under the Investment Company Act of 1940. According to the Federal Reserve's Flow of Funds report, mutual fund assets under management as of first quarter 2011 were about $11 trillion, with approximately $2.7 trillion in MMFs and $8.3 trillion in other mutual funds. Among non-money-market funds, 65 percent of assets are in equity funds and 35 percent are in bond or hybrid funds.

The MMF sector has grown significantly in recent decades and now plays a dominant role in some short-term credit markets ***(see Box D: Money Market Funds)***. While total assets under management have declined since their peak in 2009, MMFs continue to purchase a large share of private short-term debt issuance.

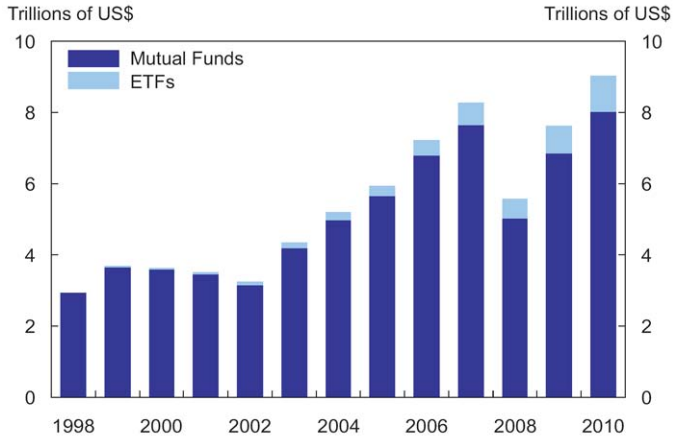
Chart 5.2.27 Investment Management Industry



Source: Flow of Funds, HFR, FSOC calculations

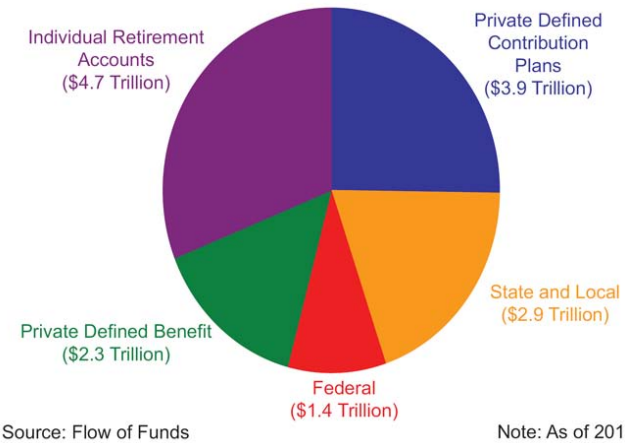
Note: *Insurance industry extendable accounts estimated. Data as of 2010:Q4.

Chart 5.2.28 U.S. Mutual Fund and ETF Assets



Source: Morningstar

Chart 5.2.29 Retirement Funds by Type



Source: Flow of Funds

Note: As of 2010:Q4.

Other mutual fund assets, excluding MMFs, have increased 60 percent since year-end 2008, driven more by increases in the value of assets than by fund flows. Over this period, there have been large net inflows to emerging market equity funds, while net flows to domestic and other advanced country equity funds have been flat. Bond funds have seen net inflows over recent years: $900 billion has flowed into bond and hybrid funds since May 2008.

Mutual funds are liquid, holding at least 85 percent of their assets in liquid securities, and are required to redeem investors' shares for cash within seven days of an investor's request for redemption. Exchange traded funds (ETFs), shares of which can be bought and sold on an intraday basis in secondary markets, have taken market share from mutual funds ***(see Chart 5.2.28*** and ***Box E: Exchange Traded Funds)***.

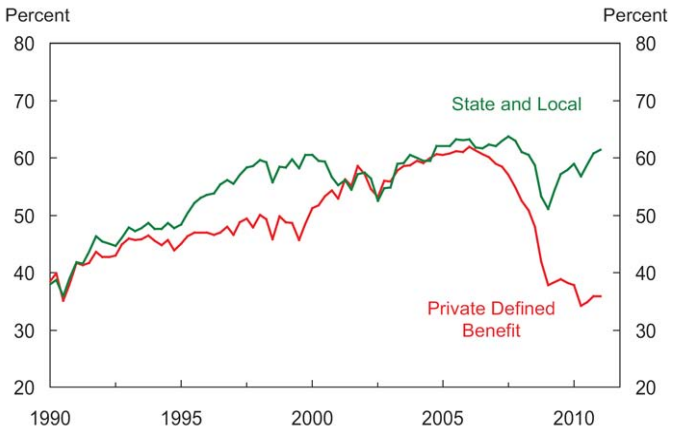
The use of leverage by mutual funds is generally constrained by statutory restrictions. Specifically, mutual funds' explicit leverage is limited by an applicable asset coverage ratio of 300 percent. Mutual funds may take on additional implicit leverage via derivatives, although the SEC places limits on this activity.

The closed-end fund sector is much smaller, with assets under management of $250 billion as of the end of first quarter 2011. These funds issue nonredeemable equity securities that are traded on an exchange; thus, unlike mutual fund investors, closed-end fund shareholders look to the secondary market for liquidity in their shares. Under their regulations, closed-end funds are able to undertake greater leverage than mutual funds.

Retirement Funds

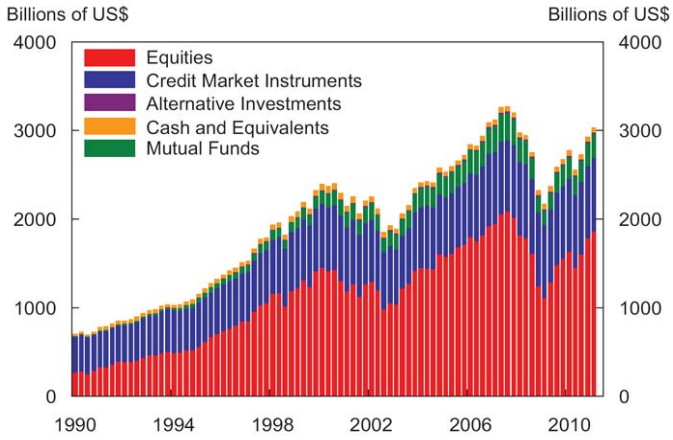
Retirement funds constitute an important category of U.S. household financial assets and are a source of long-term funds for the financial system. As of year-end 2010, the combined assets under management of private and public pensions stood at over $14.0 trillion. Government-managed pension plans make up just over one-quarter of total retirement funds ***(Chart 5.2.29)***. There are three main types of retirement funds: funds privately managed by

Chart 5.2.30 Pension Fund Assets Allocated to Equities



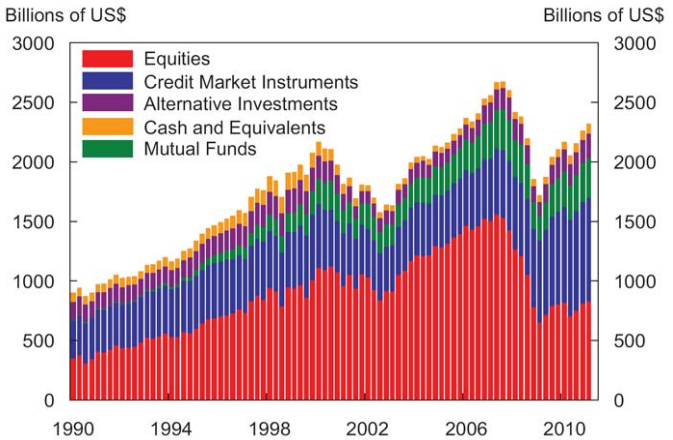
Source: Flow of Funds

Chart 5.2.31 State and Local Government Pension Plans



Source: Flow of Funds

Chart 5.2.32 Private Defined Benefit Pension Plans



Source: Flow of Funds

individuals (for example, IRAs); defined benefit pension plans, in which certain future benefits are promised to beneficiaries; and defined contribution plans, which do not guarantee future benefits.

Retirement funds have traditionally divided their assets among fixed-income securities (whose cash flows are managed to match the likely schedule of payouts in retirement), mutual funds, and equities (which offer the benefit of higher expected return). Between 1990 and 2006, the allocation to equities increased in state and local government defined benefit plans as well as private ones. Since the crisis, private defined benefit plans have sharply decreased their allocation to equities, while state and local government funds, which are typically defined benefit plans, have not adjusted their allocation ***(Chart 5.2.30)***.

The declines in equity market valuations from 2007 levels led to substantial investment losses across retirement fund types ***(Charts 5.2.31***, ***5.2.32***, and ***5.2.33)***. As a result of these losses and the decline in the assumed discount rates for these plans, the market value of assets fell significantly below the present value of liabilities for many private and public defined benefit plans. Public pension funds face more significant funding shortfalls than their corporate counterparts owing to their larger, longer term liabilities, lower sponsor contributions in recent years, and the challenges facing state and local sponsors in making adequate plan contributions in the current fiscal environment ***(Chart 5.2.34)***.

Investment Managers

Investment managers oversee approximately $8 trillion in separately managed accounts. This number has rebounded from $6 trillion at the end of 2008 but is still below the peak of $8.6 trillion in 2007.

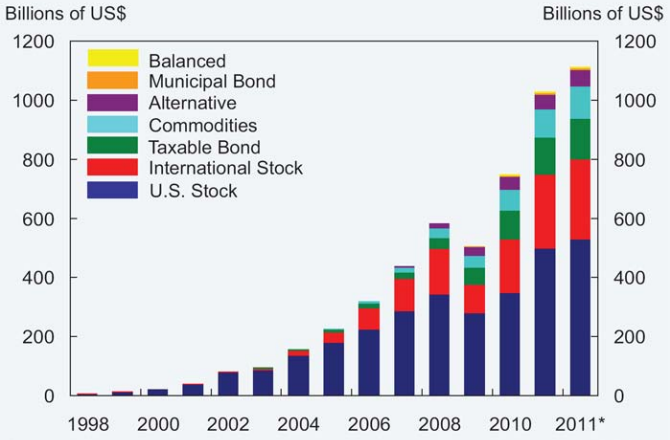
In separately managed accounts, investment losses fall solely on the account owner, so these accounts generally do not raise direct financial stability concerns. However, investment managers who pursue similar strategies across accounts and in associated managed funds (in part to capture economies

Box E: Exchange Traded Funds

Exchange traded funds (ETFs) have grown to account for an increased share of the fund management sector. While regulations restrict synthetic-based ETFs in the United States, they are an important part of the European ETF market.

ETFs are generally passively managed, index-tracking funds traded on an exchange. While ETFs are relatively low-margin products for fund sponsors and market makers, they are rapidly gaining popularity as a means of achieving low-cost exposure to nearly any market index, including emerging markets and commodities. Additionally, unlike traditional open-end mutual funds, ETF shares can be bought and sold on an intraday basis in liquid secondary markets. Since their inception in the 1990s, ETFs have grown to account for more than $1 trillion in assets, or approximately 13 percent of the long-term mutual funds industry ***(Chart E.1)***.

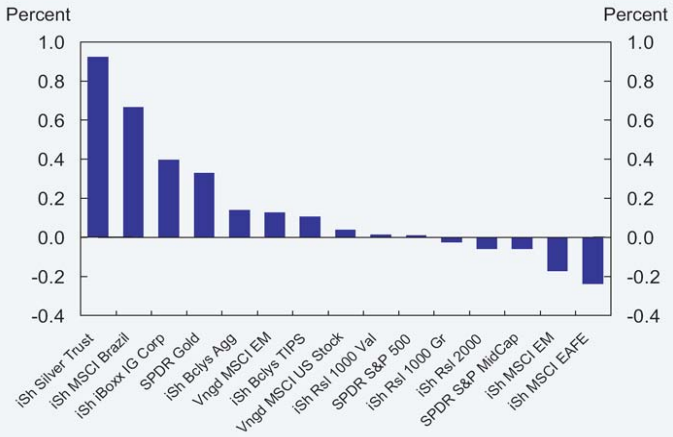
Chart E.1 U.S. Exchange Traded Funds (ETFs)



Source: Morningstar Note: 2011* as of 5/1/2011.

U.S.-domiciled funds make up approximately two-thirds of global offerings. About 97 percent of total net assets of U.S.-domiciled ETFs are passively managed, seeking to mimic market or sector indexes such as the S&P 500. For the most part, these index funds hold a portfolio of underlying securities that replicate the return of the index, though they may exhibit small divergences from their net asset value (NAV) as a result of cash management or portfolio sampling issues ***(Chart E.2)***. While tracking errors may be small, such deviations could lead to inefficiencies for institutional investors that are using ETFs to put on large hedged positions.

Chart E.2 Major ETF Divergence From Net Asset Value (NAV)



Source: Morningstar Note:12 month premium/discount from NAV as of 3/24/11.

The U.S. ETF market generally provides long, unleveraged exposure to an underlying asset or asset class. Some ETFs enter into securities lending transactions to supplement returns and lower fees, which may somewhat increase their leverage and liquidity risk.

About 3 percent of total U.S.-domiciled ETF assets are synthetic, offering 2–3 times leverage through the use of derivatives. Synthetic ETFs have experienced limited growth in the United States, partly because strict regulatory standards limit the use of derivatives to replicate underlying indexes. These standards are applicable to the roughly 90 percent of ETFs registered under the Investment Company Act of 1940 (40 Act). For example, in March 2010, pending a review of current practices, the SEC froze the ability of new ETF sponsors to introduce 40 Act ETFs that would make significant investments in derivatives. U.S. rules require that a 40 Act ETF sponsor be separate from its ETF market maker, and that domestic ETFs must hold at least 85 percent of their portfolios in liquid assets. Together, these rules have limited flexibility to engage in derivatives-based activity and have rendered many synthetic structures uneconomical.

In contrast, nearly half of European-domiciled ETFs synthetically replicate the underlying index using swaps and other derivatives. This increased complexity may lead to decreased ETF liquidity during times of heightened market volatility. Additionally, market participants—including banks providing swaps—might take on increased funding risk if ETFs suffered from a sudden loss of liquidity. U.S. investors and regulators should be alert to the possibility of liquidity or counterparty exposure risks emanating from foreign-domiciled ETFs spilling over to domestic institutions and markets.

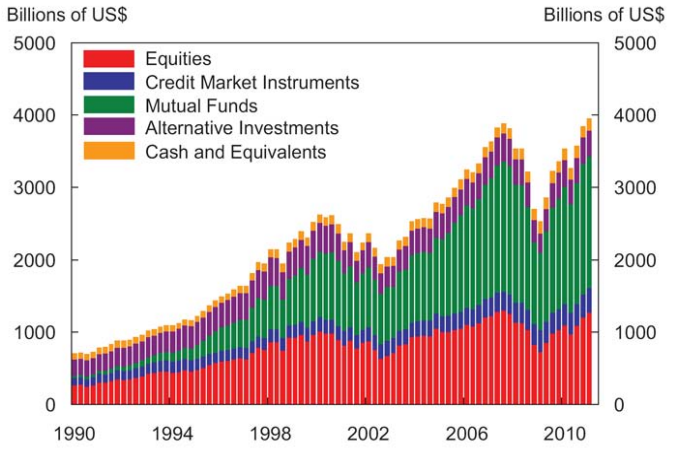
ETFs differ from another type of synthetic security: exchange traded notes (ETNs). ETNs are similar to ETFs in that they are traded on an exchange and provide returns based on an underlying benchmark or strategy. However, ETNs are actually structured notes that represent unsecured claims on the issuer rather than a claim on the underlying reference asset. (Structured notes are discussed in Section 5.2.8.)

The rise of ETFs has been driven, in part, by the perception that liquidity is unavailable in traditional open-ended mutual funds. ETF shares are traded on exchanges like ordinary stocks, which enhances the ability of investors to quickly take on and shed risk. ETF sponsors do not restrict the daily creation or redemption of ETF shares by authorized liquidity providers. These authorized participants may be broker-dealers executing client orders or arbitragers exploiting and eliminating departures of ETF prices from their underlying portfolios. In contrast, mutual funds can only be bought or redeemed with the sponsor at the close of each day and may be subject to redemption fees.

However, while these sources of liquidity generally benefit investors, they may also imply avenues through which liquidity could become constrained. For example, if a sponsoring broker-dealer were unable or unwilling to provide liquidity, the bid-ask spread could widen, leading to heightened price volatility. A departure of arbitragers from the market could result in ETF shares trading at a persistent discount or premium relative to their NAV, thus increasing tracking errors.

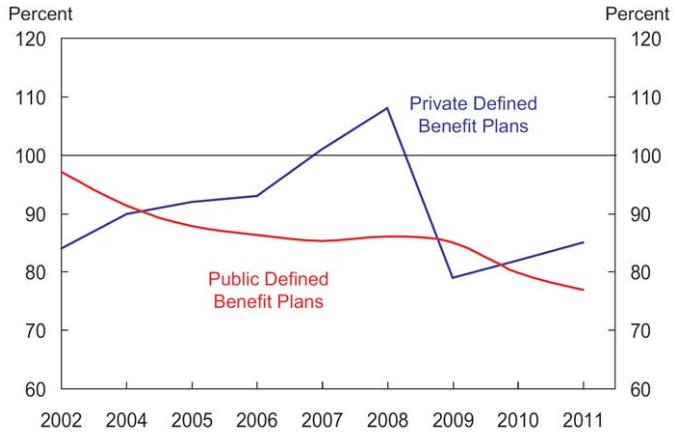
Indeed, illiquid trading conditions triggered extreme volatility in the pricing of ETFs during the May 6, 2010, flash crash ***(see Section 5.3)***.

Chart 5.2.33 Private Defined Contribution Pension Plans



Source: Flow of Funds

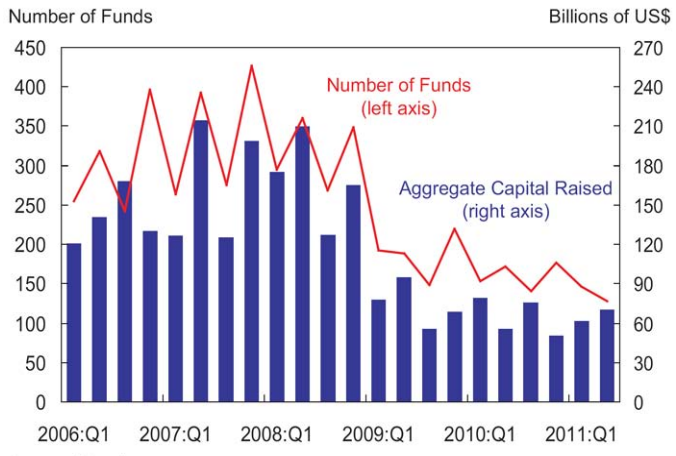
Chart 5.2.34 Public and Private Pension Funding Level



Source: NASRA, Goldman Sachs Global Market Institute

Note: 12/31/2010 public pension data is preliminary.

Chart 5.2.35 Private Equity



Source: Preqin

of scale) could pose broader risks to financial markets by increasing the volume, and thus impact, of managers' trading. Investment managers, along with mutual and pension funds, are generally not overtly leveraged.

Alternative Investments: Private Equity

Private equity—investments in a company's nonlisted equity capital—is an alternative form of financing to public equity and debt for firms that are unable to secure traditional funding or as a supplement to other capital. Private equity offers investment returns that are potentially enhanced by active ownership and strategic management, with investments taking the form of venture capital or buyouts of public shareholders. Characterized by long-term investment horizons with locked-up capital and high risk-return profiles, private equity has become a component of many diversified portfolios. Many private equity investments saw substantial losses in the crisis, and the number of private equity funds has fallen, along with the capital raised by these funds ***(Chart 5.2.35)***.

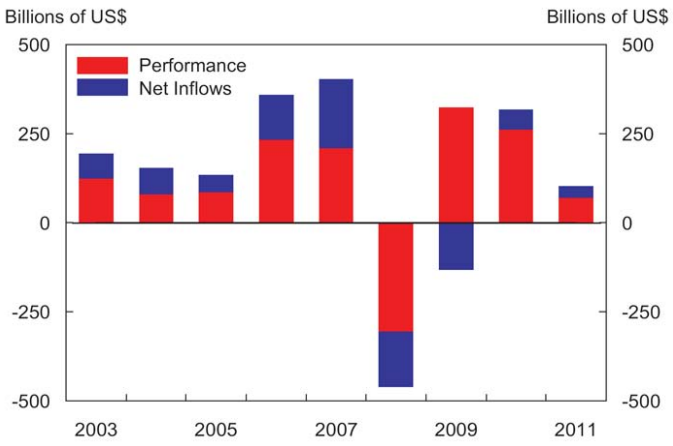
Alternative Investments: Hedge Funds

Assets managed by hedge funds increased 19 percent in 2010 and currently stand at approximately $2 trillion, near the pre-crisis peak level reached in early 2008. Hedge funds continue to draw institutional investor interest, in part because of the perception that hedge funds are relatively less correlated to broad asset class movements. Industry growth has resumed despite somewhat lackluster performance in recent quarters ***(Charts 5.2.36*** and ***5.2.37)***.

Following the crisis, institutional investor preferences for larger, more established funds with longer track records led to a greater concentration of industry assets at larger firms ***(Chart 5.2.38)***. However, flows have recently shifted toward medium-sized firms.

Leverage in the industry remains below pre-crisis levels, with factors related to both the demand for and supply of leverage playing important roles. The forced liquidations and large redemptions some funds experienced during the financial crisis have prompted

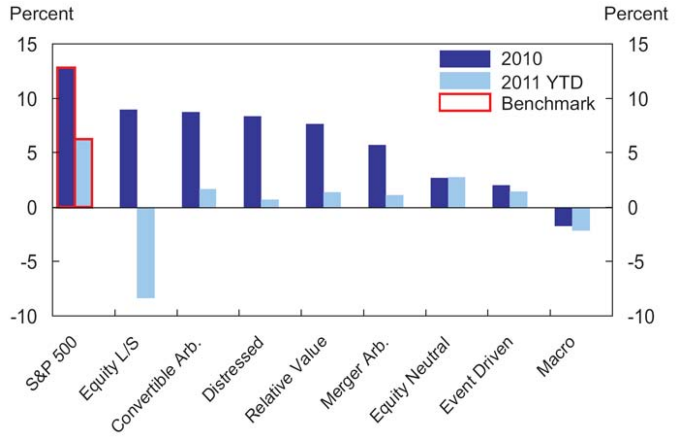
Chart 5.2.36 Change in Hedge Fund AUM



Source: HFR, FSOC calculations

Note: 2011 is YTD as of Q1.

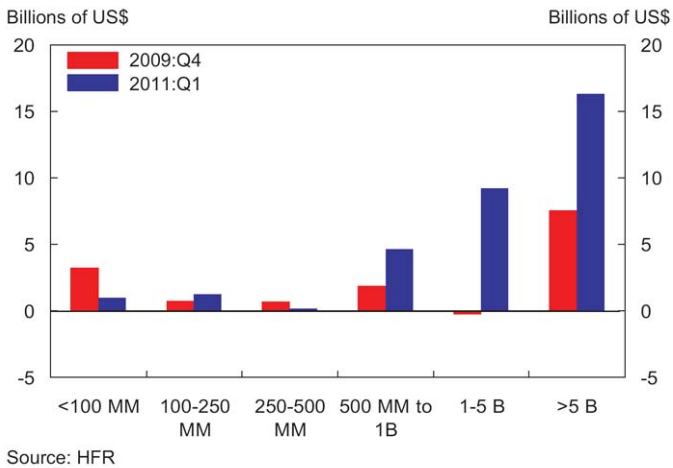
Chart 5.2.37 Hedge Fund Performance By Strategy



Source: HFR

Note: YTD through 6/30/2011.

Chart 5.2.38 Distribution of Net Asset Flows by Size of Fund



Source: HFR

less demand for leverage, with many funds preferring a liquidity cushion in the event of adverse market moves. Stricter regulatory capital requirements and internal changes to prime brokers' financing practices have also led to a reduced supply of leverage. Nonetheless, both the demand for and supply of leverage are above the lows of early 2009, especially among fixed-income arbitrage, credit trading, and global-macro funds.

Historically, regulators have had little reliable, detailed information regarding the activities of any particular hedge fund or hedge funds in general, which is of concern because of their increased role in the financial system. For example, hedge fund lenders may be increasingly important sources of funding for middle-market companies that have little access to public capital markets. Having information on hedge funds could be helpful for monitoring emerging financial market vulnerabilities that could affect hedge funds and the parties with whom they trade or from whom they obtain leverage (such as prime brokers). In January 2011, the SEC and the CFTC jointly proposed a new data collection form that would gather detailed information from hedge funds.

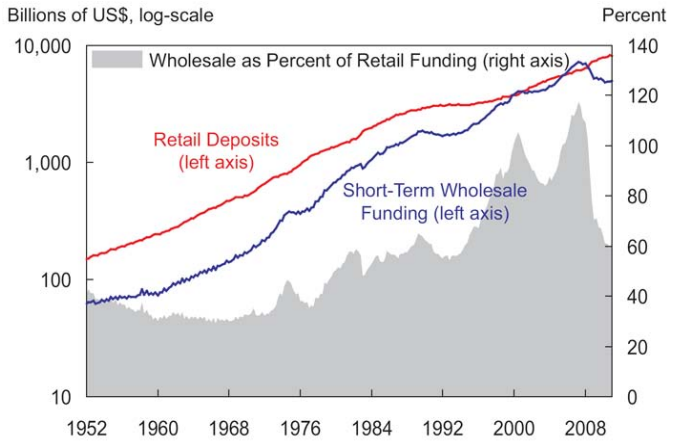
Part II. Markets and Infrastructure

5.2.6 Short-Term Wholesale Funding

Short-term wholesale funding markets play a central role in the financial system by providing financial intermediaries with funding to support their activities. However, these markets are inherently fragile owing to the frequent need to roll over maturing debt and the sensitivity of institutional investors to perceptions of risk. The larger footprint of short-term wholesale debt markets in the financial system before the crisis likely reduced market and institutional resiliency.

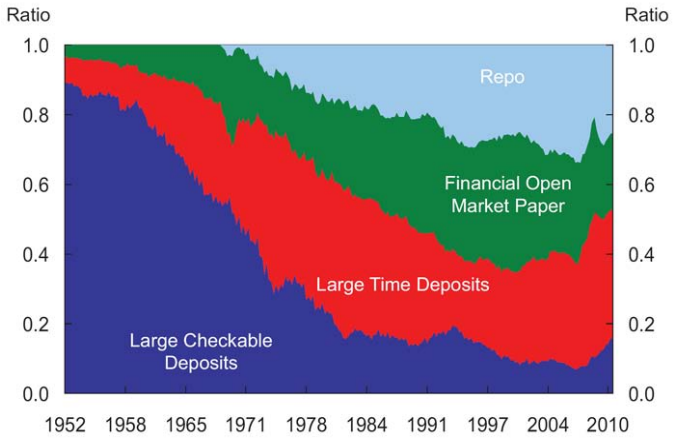
Like retail bank deposits, short-term wholesale funding markets play an important role in the financial system by providing financial intermediaries with liquidity to support their activities. On the other side of these transactions, short-term wholesale debt—which includes large time and checking

Chart 5.2.39 Retail Deposits vs. Short-Term Wholesale Funding



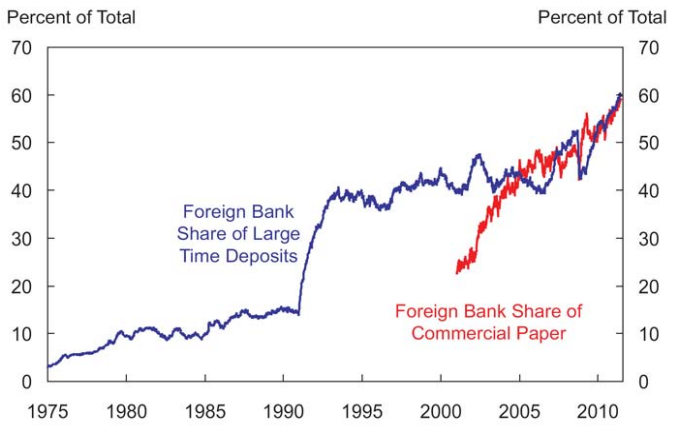
Source: Flow of Funds

Chart 5.2.40 Composition of Short-Term Wholesale Funding



Source: Flow of Funds, FSOC calculations

Chart 5.2.41 FBO Share of US$ Short-Term Wholesale Debt



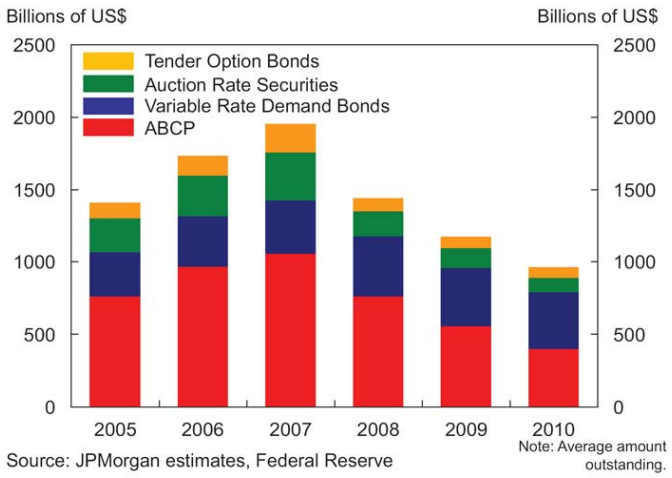
Source: Federal Reserve

deposits, repos, and CP—meets the demand of institutional cash managers, such as large corporations, for liquid investments. Growth in these markets outpaced that of retail deposits in recent decades, driven by technological, regulatory, economic, and other factors that have changed financial institution and investment management practices ***(Chart 5.2.39)***. In particular, institutional cash managers once kept most of their liquid funds in checkable or time deposit accounts at banks. Since the 1970s, however, they have placed a large and increasing portion of their liquid funds in MMFs and other intermediaries, which, in turn, invest heavily in repos, CP, and other short-term debt markets that do not have access to the FDIC's deposit insurance ***(Chart 5.2.40)***.

The proportion of short-term wholesale U.S. dollar debt issued by foreign banks increased markedly before the crisis and remains elevated. Many foreign banks have large U.S. dollar funding needs because of their holdings of U.S. assets and because of the increasingly global nature of banking. Rather than incur the restrictions and costs associated with establishing a U.S.-chartered commercial bank, many foreign institutions meet dollar funding needs by issuing large time deposits from foreign branches located in the United States or through funding subsidiaries that issue commercial paper. Even though foreign branches have access to the Federal Reserve's discount window, they are not allowed to issue insured deposits. By the end of 2006, foreign banks issued 45 percent of unsecured financial CP, sponsored 60 percent of ABCP conduits, and issued 42 percent of commercial bank large time deposits. Although sponsorship of ABCP conduits has declined, foreign banks constitute an even larger share of unsecured CP and large time deposits ***(Chart 5.2.41)***.

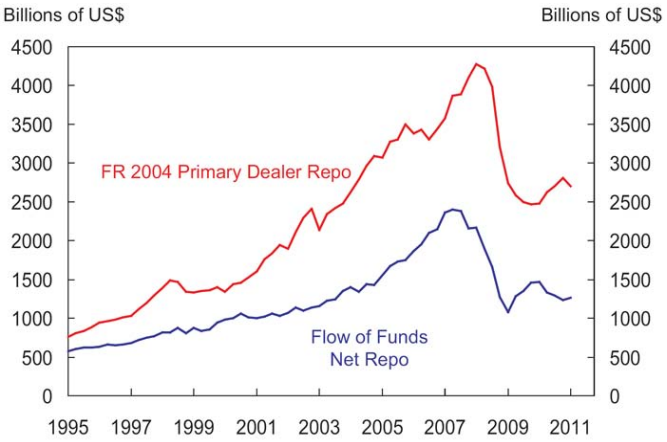
The growth of different forms of short-term debt instruments also corresponds with the broader trends of nonbank credit intermediation and the heightened importance of capital markets. Credit intermediation involving entities outside the banking system—so-called shadow banking—increased substantially leading up

Chart 5.2.42 Short-Term Collateralized Debt



Source: JPMorgan estimates, Federal Reserve

Chart 5.2.43 Estimated Size of Repo Market



Source: Federal Reserve

to the crisis. Significant reliance on short-term wholesale funding made these entities and the complex web of activities they supported more vulnerable to shocks than insured depository institutions.

These entities also became a source of vulnerability to the commercial banking system. For example, banks and other financial institutions implicitly and explicitly supported a large volume of short-term wholesale funding instruments, including ABCP conduits and a variety of other short-term collateralized debt ***(Chart 5.2.42)***. Before recent accounting reforms ***(see Box F: Improvements in Regulatory Capital and Accounting Measures of Assets)***, assets underlying these funding arrangements were generally off-balance sheet. This kind of accounting allowed for favorable capital treatment, bolstered equity returns of the sponsoring institution, and reduced perceptions of the risk associated with these arrangements. However, investors' concerns regarding the quality of ABCP collateral, the viability of financial guarantors, and the ability of financial institutions to provide the promised liquidity support prompted a sharp contraction in demand for these instruments beginning in mid-2007. Banks and other financial institutions purchased the underlying assets out of implicit or explicit obligation, placing significant strain on their funding and capital positions.

A major portion of the pre-crisis increase in the short-term wholesale funding markets was associated with the repo market. By using securities as collateral, repurchase agreements facilitate the extension of low-cost short-term financing to holders of high-quality securities. While the size of the repo market is difficult to estimate because of netting and accounting conventions, it had clearly grown rapidly leading up to the crisis and had become a key funding source for broker-dealers and hedge funds ***(Chart 5.2.43)***. Changes to bankruptcy laws that allowed lenders to take possession and liquidate repo collateral—notwithstanding the automatic stay otherwise applicable in the bankruptcy process—likely reduced the cost of securities financing, increased securities market

Box F: Improvements in Regulatory Capital and Accounting Measures of Assets

A firm's capital allows it to absorb unexpected losses on its assets. For regulators to enforce appropriate capital standards, they need a comprehensive measure of the firm's total risk exposure. Before the crisis, many financial institutions avoided higher capital charges relating to particular assets by holding them in off-balance-sheet vehicles. In addition, some capital risk charges did not appropriately reflect the risk of certain asset classes. Regulatory changes and accounting rules have been implemented to address these issues, and more changes are planned.

Consolidating Assets on Balance Sheet

In June 2009, the U.S. Financial Accounting Standards Board (FASB) introduced two amendments to financial accounting standards that change the way companies account for transfers of financial assets and special-purpose entities. The amendments, which took effect for most financial institutions in January 2010, addressed the weakness that financial statements did not fully reflect material assets and liabilities associated with certain securitizations in which the securitizers retained an interest but did not have to record them on their balance sheets.

Amendments to Accounting Standards Codification (ASC) Topic 860, "Transfers and Servicing," revised the requirements for derecognizing assets. Among other changes, the amendments eliminated the concept of a "qualifying special-purpose entity," thereby subjecting more mortgage- and asset-backed securitizations to consolidation on the balance sheet. An institution that sells certain loan participations is required to retain those interests on its balance sheet unless it transfers those participations on a strictly pro- rata basis as to both payment and default risk.

Similarly, ASC Topic 810, "Consolidation," requires that a bank consolidate on its balance sheet certain "variable interest entities" that previously were permitted to remain off the balance sheet. Specifically, ASC 810 may require consolidation if an affiliate of the bank retains control over the financial assets and retains certain economic rights or obligations with respect to the assets.

ASC 860 and ASC 810 require additional disclosures regarding holdings of variable interests, transfers of financial assets, and continuing involvement with transferred assets. Securitization requirements introduced by the Dodd-Frank Act, mandating the retention of an economic interest in the credit risk of assets that an entity securitizes, could lead to consolidation of newly securitized assets under these requirements.

Leverage Ratio

U.S. regulators also require insured commercial banks and savings institutions to satisfy a leverage ratio requirement. A leverage ratio provides for a base of capital relative to assets and thus constrains the extent to which institutions can lever themselves. The ratio provides a backstop against the possibility of model risk or other mis-measurement of risk in the risk-based capital rules. For many years, the U.S. leverage ratio did not incorporate off-balance-sheet exposures, on the theory that those are captured by the risk-based capital requirements. Among other changes, the new Basel III agreement includes a leverage ratio standard that applies to both on- and off-balance-sheet exposures, including an add-on for potential future exposure for over-the-counter derivatives. Section 171 of the Dodd-Frank Act establishes the risk-based and leverage capital requirements that are generally applicable to insured banks as a floor for certain regulatory capital rules.

Risk-Based Capital

The basis of risk-based capital is an assessment of how much risk a given class of exposure contains. The standards for performing this assessment have changed over time. Both insurance and banking regulators use risk-based capital measures as one tool in their assessment of the safety and soundness of supervised institutions.

Banks and Savings Institutions

The original Basel capital standards used fixed weights for particular types of credit risk exposure. For example, certain single-family residential mortgage loans received a risk weight of 50 percent, while commercial loans received a weight of 100 percent. For institutions with large exposures to market risk, risk weights are derived from value-at-risk calculations for general market risk and either a standardized approach or value-at-risk approach for idiosyncratic risks. In addition, risk weights are applied to off-balance-sheet exposures, including counterparty credit risk arising from derivatives and some lending commitments.

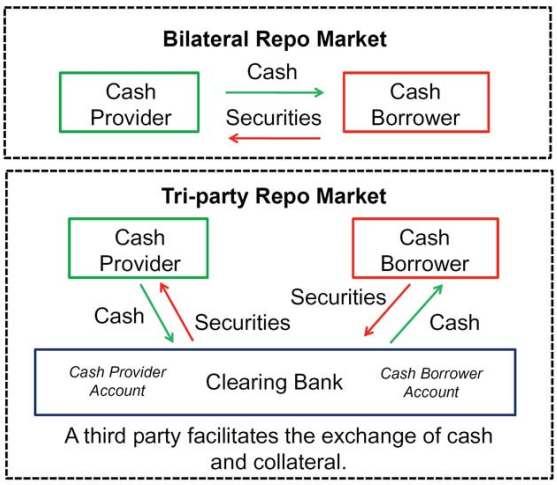
In 2007, the U.S. regulators issued a rule implementing Basel II for internationally active banks and bank holding companies (BHCs). Basel II incorporates operational risk exposure and relies more on firms' internal data regarding the riskiness of exposures. The rule requires a banking organization to demonstrate the rigor of its internal risk measurement systems to its supervisor for at least one year before using those systems for risk-based capital purposes. Currently a number of BHCs (representing the majority of U.S. banking system assets) are in this "parallel run" stage and are making the necessary systems refinements to exit the parallel run.

The new Basel III agreement enhances the coverage of market risk. Certain high-risk positions, such as structured credit, will now face much higher capital charges. Basel III also introduces explicit charges for the mark-to-market losses (also known as credit valuation adjustments) of counterparty credit risk and makes it more costly to extend credit to other financial institutions. These new requirements will make it more expensive for institutions to engage in activities that were destabilizing during the financial crisis.

Insurance Companies

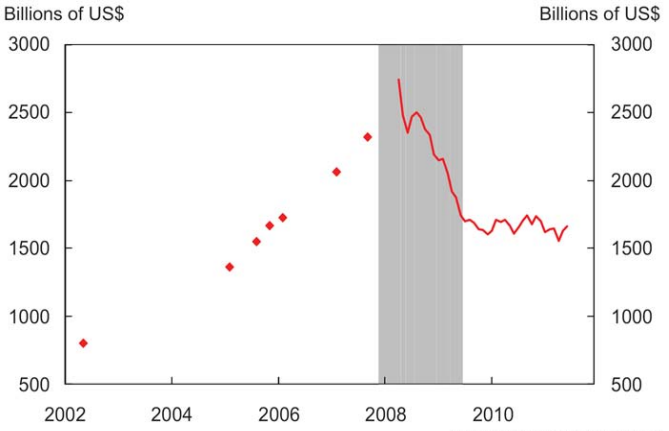
A significant component of risk-based capital for U.S. insurance companies is based on an assessment of credit quality of (and hence the risk of loss on) an insurer's investment portfolio. For bonds rated by at least one of the nationally recognized statistical rating organizations (NRSROs), state insurance regulators for many years relied on a formulaic approach to translating NRSRO ratings into NAIC designations. Beginning in 2009 for residential mortgage-backed securities (RMBS) and 2010 for commercial mortgage-backed securities (CMBS), the state insurance regulators changed the process by which individual holdings of insurers are assigned designations of creditworthiness. This change was made because of volatility and risk in the residential and commercial mortgage markets. The new approach focuses on modeling each security and developing expected recovery values assuming the securities are held to maturity. Significantly, the expected recovery values are compared with individual companies' carrying values, reflecting the different risk profile of securities held at significant discounts to par value. NRSRO ratings assume holding at par, but in a volatile marketplace securities are frequently purchased at deep discounts. In an economic environment that has seen extreme stress, conservative valuation rules under statutory accounting principles require an insurer to take capital impairments. The new process of evaluating and designating the creditworthiness of insurer-held RMBS and CMBS more accurately reflects the risk of loss.

Chart 5.2.44 Bilateral vs. Tri-party Repo Market



Source: FSOC

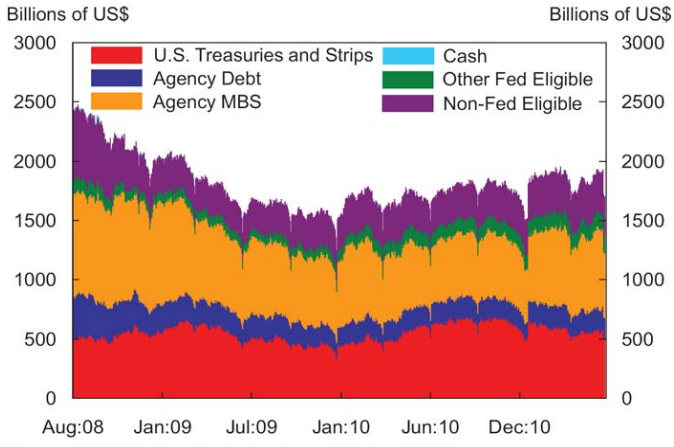
Chart 5.2.45 Estimated Value of the Tri-party Repo Market



Source: FRBNY White Paper, Tri-Party Repo Infrastructure Reform Task Force

Note: Limited data were provided by clearing banks prior to April 2008. These figures are estimates based on the data provided.

Chart 5.2.46 Tri-party Repo Collateral



Source: FRBNY, Copeland, Martin and Walker (2010)

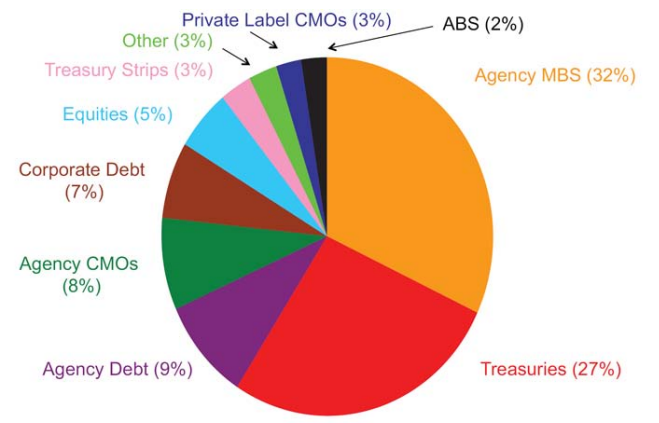
liquidity, and facilitated the growth of parts of the asset management industry. However, the use of the repo market as an important source of short-term leverage increased funding vulnerabilities among key investors and intermediaries during the crisis.

Repos can be transacted either bilaterally between two market participants or through an intermediary, such as a clearing bank, which administers the exchange of cash and collateral between dealers and lenders ***(Chart 5.2.44)***. Initially smaller and limited to U.S. Treasury and agency collateral, the tri-party market grew to $2.7 trillion in 2008 ***(Charts 5.2.45)***, fueled by increases in securities issuance (which boosted the secured financing need of market makers), large inflows of funds into MMFs, and cost reductions associated with centralized collateral management at the clearing bank. Despite the decline in the size of the market, tri-party repo remains a key source of financing for broker-dealers and other financial market participants ***(Charts 5.2.46*** and ***5.2.47)***.

The providers of funds in short-term wholesale markets are institutional investors such as corporations and asset managers motivated primarily by liquidity and safety of principal. Strong growth in the cash and liquid asset holdings of the corporate and asset management sectors in the years before the crisis supported the issuance of short-term wholesale debt. These cash investors often use money market funds and other intermediaries to diversify counterparty exposures and centralize risk management and operations. The growing prevalence of short-term wholesale debt—as well as the size and risk sensitivity of the institutional investor base—likely reduced market and institutional resiliency before the crisis.

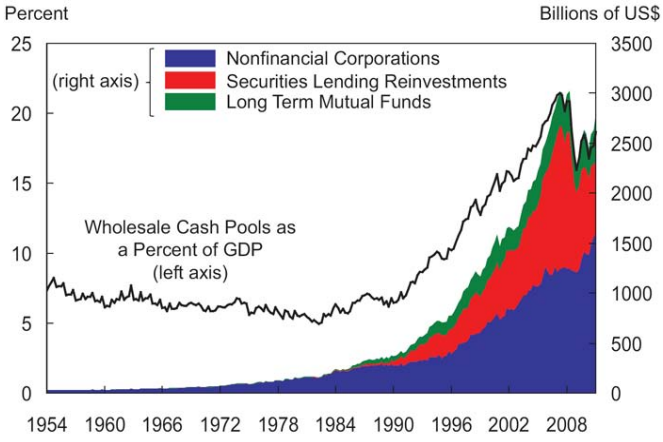
Growth in liquid asset and cash holdings was particularly pronounced in the corporate and securities lending sectors in the pre-crisis period ***(Chart 5.2.48)***. Cash and related investments among corporations have increased at rates exceeding GDP, and they are a larger share of total assets than in the early 1990s. In addition, the growth in the securities

Chart 5.2.47 Tri-party Repo Collateral Distribution



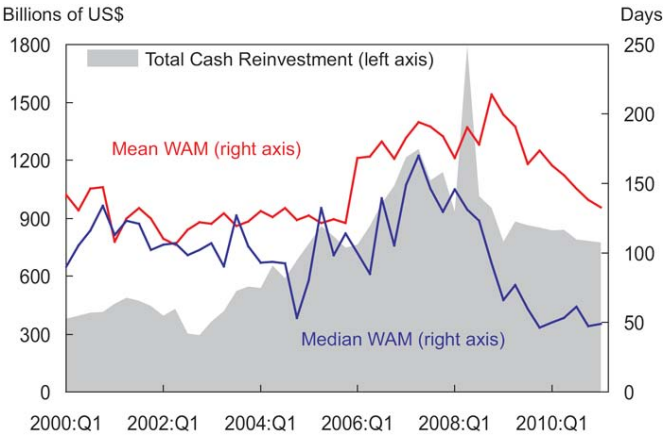
Source: Tri-Party Repo Infrastructure Reform Task Force Note: As of 6/2011.

Chart 5.2.48 Wholesale Cash Investors



Source: Flow of Funds

Chart 5.2.49 Securities Lending Cash Reinvestment



Source: The Risk Management Association

lending industry—which supplies securities to broker-dealers, hedge funds, and others in exchange for cash collateral—has prompted a substantial increase in related short-term investing. Cash collateral reinvestment from securities lenders grew from about $300 billion in 1999 to about $1.2 trillion in 2007. During this period, large broker-dealers expanded their prime brokerage business with leveraged hedge funds that engaged in fee-generating activities such as securities lending. However, lower demand for securities among broker-dealers and hedge funds, as well as heightened counterparty concerns among securities lenders, prompted a sharp decline in securities lending and related cash reinvestment volumes ***(Chart 5.2.49)***. In addition, the weighted average duration of cash reinvestment declined as cash management agents reduced risk in response to the crisis.

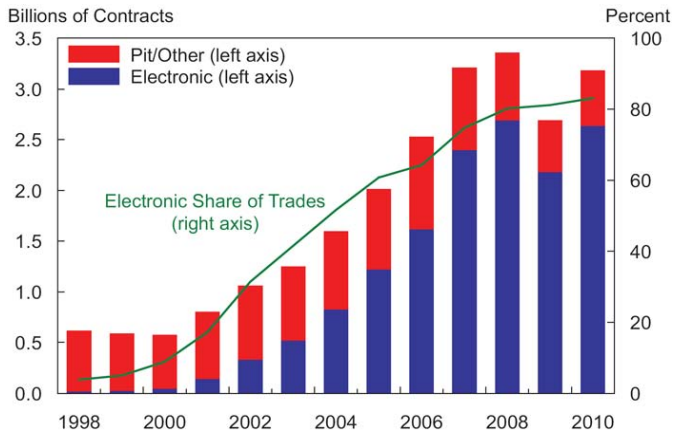
5.2.7 Financial Infrastructure

Advances in technology and improvements to infrastructure—such as exchanges, central counterparties, and data repositories—have altered the landscape significantly, providing financial markets with improvements to efficiency and transparency.

Exchanges and Electronic Trading Platforms

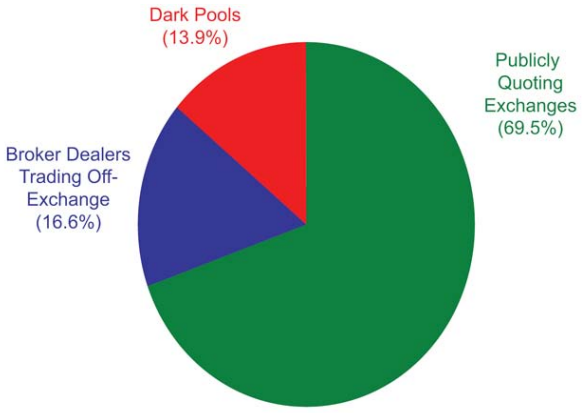
Changes in technology and trading practices have affected exchanges, encouraging a migration of trading from exchange floors to electronic trading platforms. For example, electronic trading accounted for approximately 83 percent of volume in U.S. futures markets in 2010 ***(Chart 5.2.50)***. There has also been a notable increase in the use of algorithmic trading. Extraordinarily high-speed computer programs facilitate both large-block trading on the part of professional investors seeking to minimize their impact on prices (execution algorithms), and proprietary trading strategies that can rapidly buy and sell the same security or future many times per second (high-frequency trading). The latter type of computerized trading is believed to account for 50 percent or more of total volume.

Chart 5.2.50 U.S. Futures and Options Trading



Source: CFTC

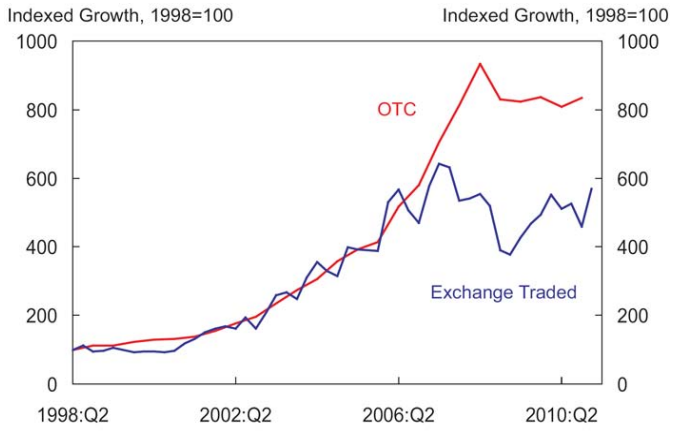
Chart 5.2.51 Trading Venues for U.S. Equities by Market Share



Source: Rosenblatt Securities

Note: As of 5/31/2011.

Chart 5.2.52 OTC and Exchange Traded Derivatives Growth



Source: BIS

Note: Notional values.

Additionally, these types of trading venues have become more fragmented. Over the past 18 months, the market share of reported trading volume executed on undisplayed venues (composed of "dark pools" and broker-dealers executing trades internally) has increased to more than 30 percent ***(Chart 5.2.51)***. As of May 2011, no single publicly quoting exchange platform had more than one-fifth of market share.

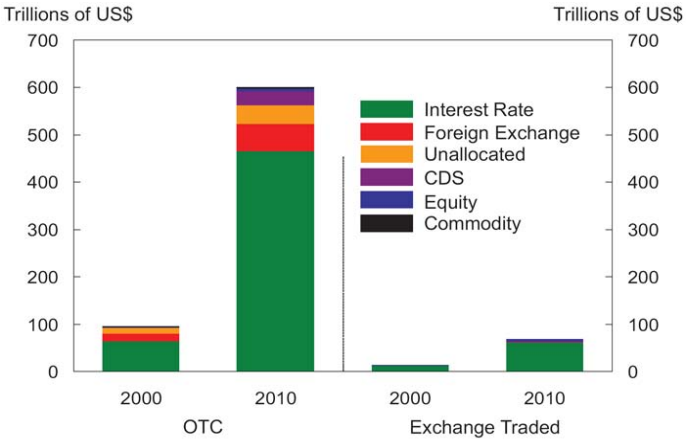
Infrastructure Supporting Derivatives Markets

Infrastructure supporting derivatives markets is also undergoing significant change, with certain asset classes—such as the interest rate swap market—driving these developments. Trading, central clearing, and reporting in OTC derivative trades are likely to undergo significant changes as regulators begin finalizing, adopting, and enforcing rules that further strengthen OTC markets through organized platform trading, central clearing of standardized products, and mandatory trade reporting.

Historically, because OTC derivatives instruments are designed to allow market participants flexibility in customizing transactions, they have been significantly less standardized and less liquid than their listed (or exchange traded) counterparts. The proportion of OTC relative to exchange traded derivatives varies widely by asset class. For example, virtually all credit derivatives are traded OTC, while in equities, there is significant liquidity in exchange traded futures and options globally ***(Charts 5.2.52***, ***5.2.53***, and ***5.2.54)***. For this reason, many OTC derivatives trading and risk management functions were conducted in a bilateral and distributed manner, without the use of organized trading platforms or centralized clearing arrangements. This made it difficult to quantify and characterize global activity and manage counterparty credit risk exposures.

Trends toward organized platform trading and central clearing are helping to address these challenges. In conjunction with increases in organized platform trading, the use of central counterparties in the United States, as well as the different types and volumes of derivatives cleared by them, is increasing ***(Chart 5.2.55)***. A central counterparty clearinghouse

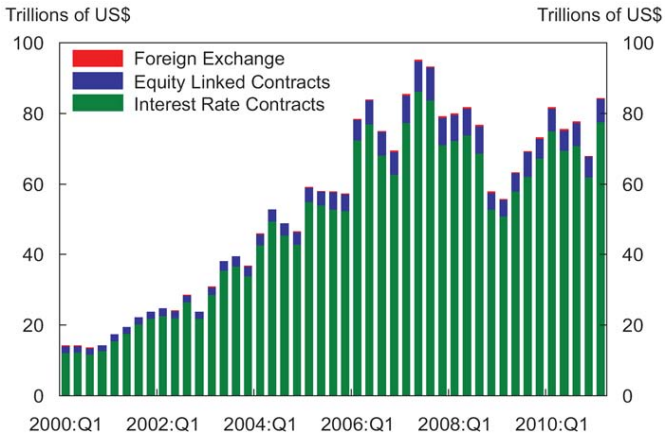
Chart 5.2.53 OTC and Exchange Traded Derivatives



Source: BIS

Note: Notional values.

Chart 5.2.54 Exchange Traded Derivatives



Source: BIS

Note: Notional values.

Chart 5.2.55 U.S. Regulated Derivatives Central Counterparties

Entity	Assets Cleared	Status
CME Group	Interest Rate, Credit, Commodities, Energy	Active
CME Group	Foreign Exchange	Active
ICE Clear Europe	Credit, Interest Rate, Energy	Active
ICE Clear Credit	Credit	Active
IDCG	Interest Rate	Active
LCH.Clearnet	Interest Rate, Energy	Active
NYPC	Interest Rate	Active
NGX	Energy	Active
Options Clearing Corp.	Equity	Proposed

Source: FSOC

Note: As of June 2011.

serves principally to ensure performance of the contractual obligations of the original counterparties to derivatives transactions and to manage the day-to-day risks and default risk associated with these obligations and counterparties, each of whom is a member of the clearinghouse. This is accomplished by interposing the central counterparty between bilateral participants, so that it becomes the buyer to every seller and the seller to every buyer ***(Charts 5.2.56*** and ***5.2.57)***. This arrangement allows the central counterparty to hold little or no net market exposure and to provide its core function of centrally managing the credit and operational risks arising from the obligations incurred by its members.

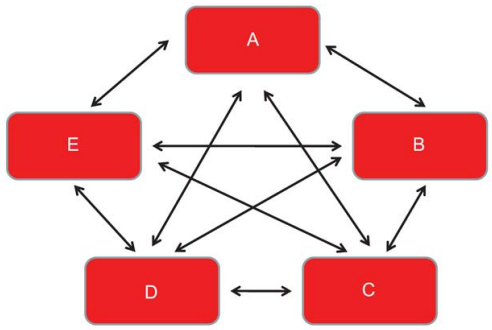
Efforts to enhance market transparency in the derivatives markets are also benefiting from advances in trade reporting. Three major OTC derivatives trade repositories currently operate and support credit, interest rate, and equity derivatives markets. In other asset classes, including commodity and foreign exchange markets, industry efforts to develop centralized trade repositories are under way, including the issuance of public requests for proposals.

Outside derivative markets, participants in fixed-income markets are also increasingly using trade reporting systems to track transactions as they occur. For example, since 2005, the Financial Industry Regulatory Authority, the self-regulatory organization for securities firms (formerly the National Association of Securities Dealers), has required that broker-dealers report virtually all secondary market transactions in U.S. corporate bonds to the Trade Reporting and Compliance Engine.

Payment and Settlement Systems

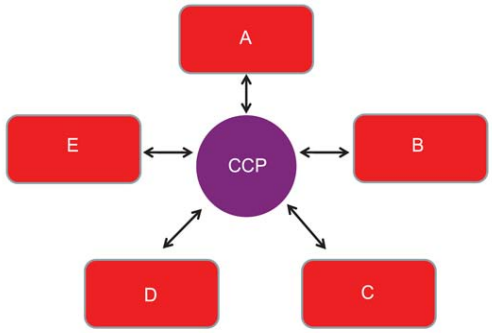
Wholesale financial infrastructure in the United States handles, on a daily basis, over $13 trillion in U.S. payment, settlement, and clearing activity—nearly the amount in dollar terms of the goods and services that the U.S. economy produces annually ***(Chart 5.2.58)***. This activity includes many types of transactions, such as multinational companies borrowing foreign currency to support international trade, brokers

Chart 5.2.56 Bilateral Execution



Source: FSOC

Chart 5.2.57 Execution Through Central Clearing



Source: FSOC

Note: CCP is a central counterparty.

Chart 5.2.58 Average Daily US$ Payment Flows in 2010

Category	Amount (Trillions of US$)
General Payments	
Fedwire Funds	2.4
CHIPS	1.5
Government Securities	
Fedwire Securities	1.5
FICC	4.8
Foreign Exchange (CLS)	1.9
Money Markets Instruments (DTC)	0.3
Equity, Bond, and ETFs (NSCC)	0.9
Total	**13.3**

Source: Federal Reserve Board

Note: CLS US$ settlement flows only

buying stocks or bonds on behalf of clients, and large financial institutions accessing short-term funding markets to borrow billions of dollars overnight to cover daily funding needs. The smooth functioning of these complex and interconnected systems, both privately and publicly run, is vital to the financial stability of the U.S. economy ***(Chart 5.2.59)***.

The settlement of money can occur on the books of a central bank, a commercial bank, or a private sector financial infrastructure. Fedwire Funds is a dedicated funds transfer network operated by the Federal Reserve Banks; it allows commercial banks to settle payment obligations for their own business purposes and on behalf of their clients on the books of the central bank. It is also a cash settlement agent for many other private sector systems to facilitate their payment, clearing, and settlement activity. Fedwire Securities Service, which allows for the transfer of securities, was implemented by the Federal Reserve to reduce risk, expense, and delay in the transfer of securities; it also plays a role in the clearing and settlement of U.S. Treasuries and other government-related securities. The Clearing House Interbank Payments System (CHIPS) is the largest private wholesale payment system for settling large payments between financial institutions ***(Charts 5.2.60*** and ***5.2.61)***. New private systems have emerged to meet the growth of cross-border payments. For example, CLS Bank International (CLS), which virtually eliminates the settlement risk associated with foreign exchange transactions, is the largest multicurrency cash settlement system in the world.

Since the 1990s, payment and settlement systems have gone through significant changes with the introduction of risk-reducing features such as real-time gross settlement (RTGS) for large-value payment systems and delivery versus payment (DVP) for securities settlement systems. Before this, most large-value payment systems operated as deferred net settlement systems, which settle at the end of the day. RTGS systems, which settle on a continuous basis, allow for payments to

Chart 5.2.59 U.S. Financial Infrastructure

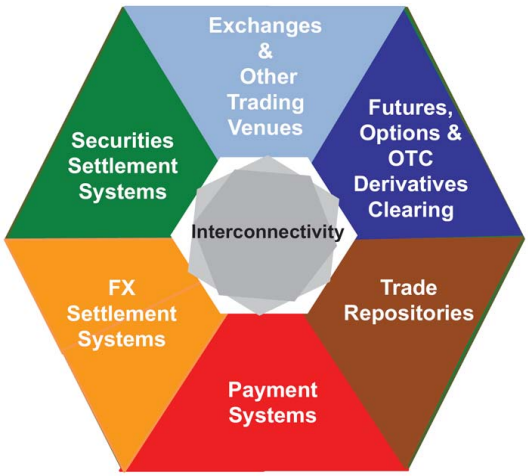
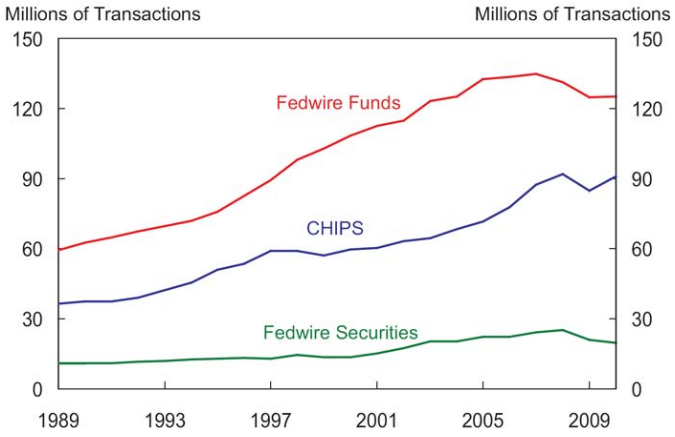
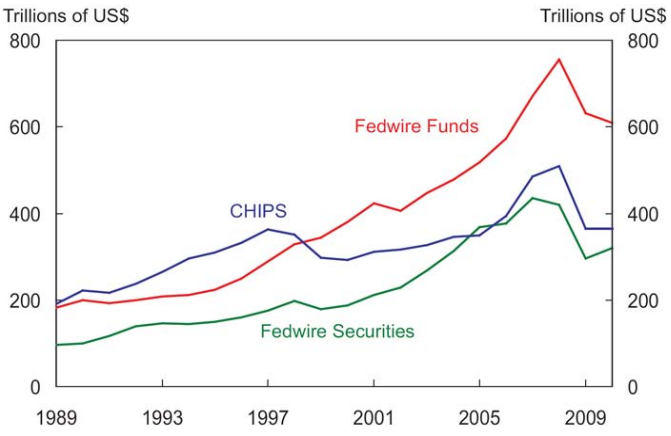


Chart 5.2.60 Annual Payment Clearing Volumes



Source: Federal Reserve, The Clearing House

Chart 5.2.61 Annual Payment Clearing Values



Source: Federal Reserve, The Clearing House

be finalized throughout the day. This reduces the buildup of potential intraday exposures, lowering the amount of liquidity used (mainly central bank money) while reducing costs. Similarly, DVP systems—which allow for the gross, simultaneous settlement of securities and funds—ensure that delivery occurs if, and only if, payment occurs. These changes were largely driven by advances in information and communication technology and have resulted in the immediate, final, and irrevocable settlement of funds and securities.

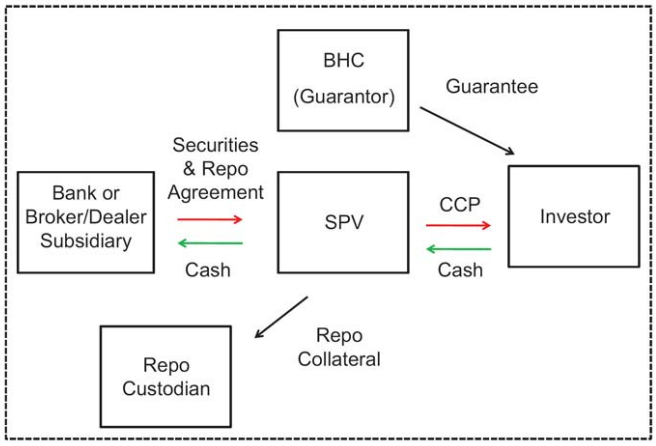
5.2.8 New and Emerging Financial Products

The introduction and growth of new products is partly driven by firms and markets seeking new avenues of funding and trading liquidity.

Against a backdrop of a slowdown in credit growth, the dominance of the GSEs in securitized mortgages, and uncertainty over new regulations, the introduction of new financial products has been limited. Nonetheless, innovation is already occurring in response to regulatory pressures designed to increase the strength and resilience of the system.

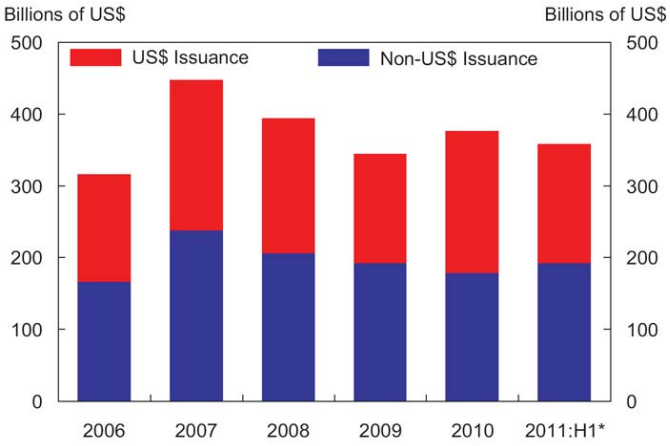
For example, prudential regulators are setting standards that will require banks and financial institutions to extend the maturity of their liabilities, while the SEC is requiring MMFs to shorten the term of the assets they hold. These new requirements have led to the introduction of collateralized commercial paper, which meets the liquidity requirements for investments by MMFs and satisfies the need for financial institutions to extend funding beyond one month to meet the new stressed funding ratio requirements. Collateralized CP is intended to expand funding sources for a variety of debt and equity securities currently funded via tri-party repo. The bank sets up a special purpose vehicle (SPV) to face the bank on repo transactions. The SPV funds itself with proceeds from CP issuance to cash investors, using the proceeds to enter into traditional repo agreements rather than to buy term assets, as an ABCP conduit would ***(Chart 5.2.62)***.

Chart 5.2.62 Collateralized Commercial Paper Market



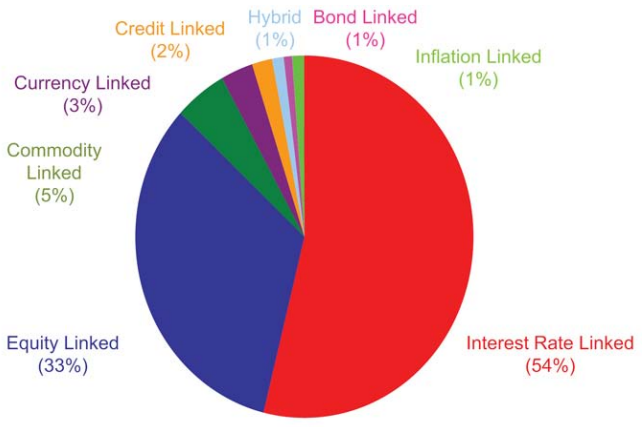
Source: FSOC

Chart 5.2.63 Global Structured Note Issuance



Source: mtn-i Note: Global issuance converted to US$, *2011:H1 annualized.

Chart 5.2.64 US$ Structured Notes by Asset Class



Source: mtn-i Note: January 2010–June 2011 Issuance.

For issues of collateralized CP to date, accounting treatment of the SPV limits the opportunity for regulatory capital arbitrage. Ratings of the structures are pegged to the rating of the sponsoring bank and do not receive a "ratings uplift" above the bank's rating based on support from potentially illiquid, difficult-to-price collateral or other structural features. Although collateralized CP issuance has been negligible, increased activity could give rise to potential vulnerabilities, particularly as the products evolve.

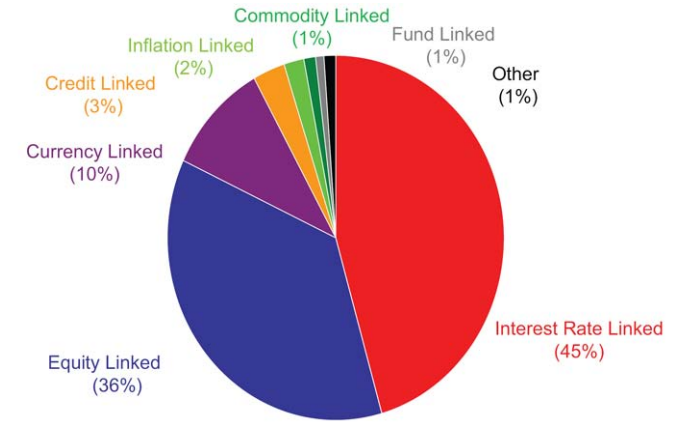
Financial innovation can also involve the evolution of existing products in new forms. Two examples are exchange traded funds (ETFs) and structured notes. ETFs have experienced rapid growth and offer an increasing diversity of fund types ***(see Box E: Exchange Traded Funds)***.

Structured notes, issued primarily by banking entities, are an important source of funding for some institutions. These notes are senior unsecured debt instruments that have a derivative element. The return on structured notes is based in part on the performance of one or more underlying reference assets, such as equities, commodities, or interest rates. While the return on a structured note depends on that of a reference asset, the structured note remains a recourse obligation of the issuer and is subject to default risk.

Unlike many other structured products, issuance of structured notes has been broadly maintained around pre-crisis levels ***(Chart 5.2.63)***. U.S. dollar-denominated structured notes are concentrated in interest-rate-linked and equity-linked products to a slightly greater extent than non-U.S. dollar-denominated notes ***(Charts 5.2.64*** and ***5.2.65)***.

For financial institutions, structured notes offer an alternative source of unsecured funding, fee income from design and distribution, and a potentially economical way to distribute trading book risk. Structured note designs are very heterogeneous and can embody a high degree of complexity, leverage, or optionality, presenting challenges for issuing

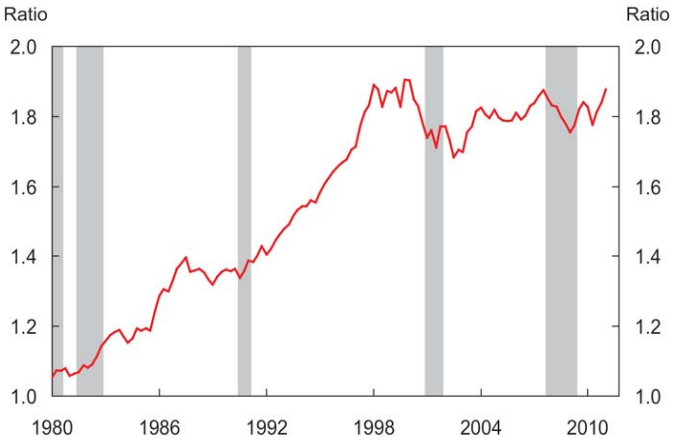
Chart 5.2.65 Non-US$ Structured Notes by Asset Class



Source: mtn-i

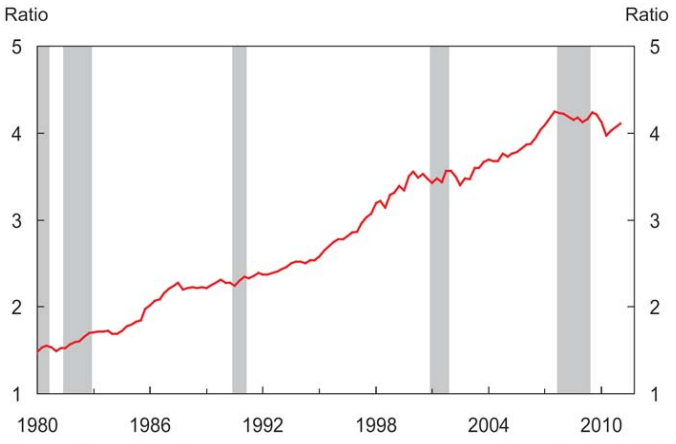
Note: January 2010–June 2011 Issuance.

Chart 5.3.1 Financial to Private Sector Gross Liabilities



Source: Flow of Funds

Chart 5.3.2 Financial Sector Gross Liabilities to GDP



Source: Flow of Funds

Note: Nominal GDP.

firms' market and liquidity risk management. Also, the embedded derivatives require firms to dynamically hedge most structured notes, exposing the issuer to gap risk—the potential of losses owing to a sudden and sustained movement in underlying prices. Firms may therefore need to rely on consistent access to liquid markets.

5.3 Resilience of the Financial System

Many parts of the financial system were not sufficiently resilient to function through the financial crisis without government support. Interconnections among financial institutions were complex and poorly understood. Improvements in capital, funding structures, transparency, and regulatory and accounting standards have been undertaken to enhance the resilience of the financial system, but further improvement is necessary in a number of areas.

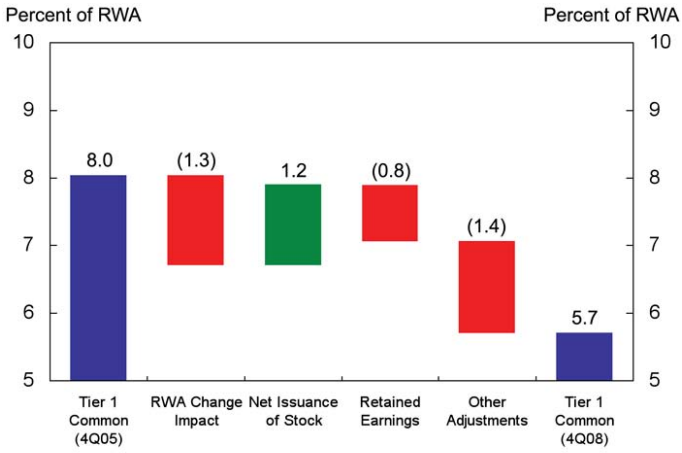
5.3.1 Capital

Capital levels and the capital quality of financial institutions have increased significantly since the financial crisis owing to a return to profitability, capital raising, regulatory changes, and a dramatic drop in distributions to shareholders.

For leveraged financial institutions, capital acts as a shock absorber for unexpected losses. Because the financial system is highly interconnected, low capital of institutions in one part of the system can have adverse effects on other parts of the system. Financial institutions have significant obligations to each other: the U.S. financial sector had gross liabilities of about $61.7 trillion at the end of first quarter 2011, almost twice the gross liabilities of the nonfinancial private sector ***(Chart 5.3.1)***. The gross liabilities of the financial sector, which were about one-and-a-half times GDP in the early 1980s, have been more than four times GDP in recent years ***(Chart 5.3.2)***.

As a result of the interconnections in the financial sector, the disorderly insolvency of a financial institution—or the fear of such an event—can impair the ability of the entire

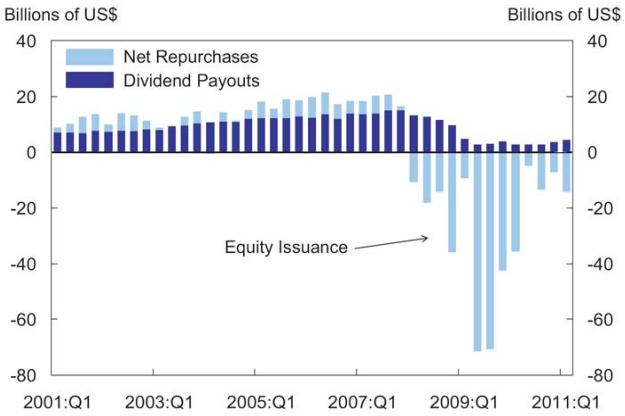
Chart 5.3.3 Change in Tier 1 Common Ratios for Large BHCs



Source: FR Y-9C

Note: Domestically owned BHCs.

Chart 5.3.4 Large BHC Dividends and Repurchases



Source: FR Y-9C

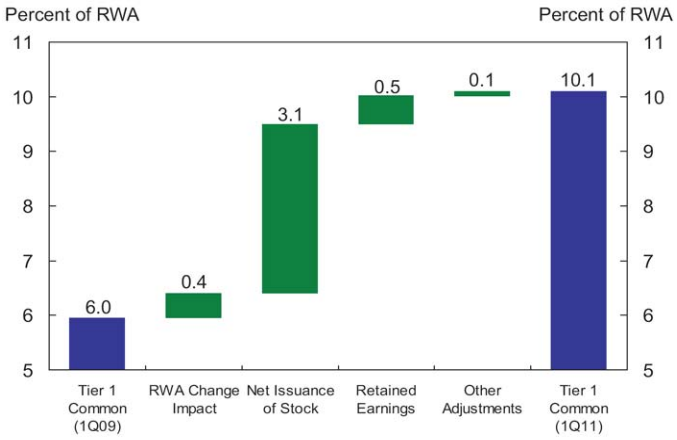
Note: Domestically owned BHCs.

financial system to provide its services to the real economy, which in turn can adversely affect the real economy. Therefore, a financial institution's insolvency can potentially have a more severe impact than the insolvency of a nonfinancial business. Consequently, because capital acts as a shock absorber for unexpected losses, it is central to the financial system's resilience to adverse developments and the resilience of the entire economy.

The crisis illustrated that many parts of the U.S. financial system were undercapitalized relative to the risk posed by unexpected losses in their assets ***(Chart 5.3.3)***. For example, a number of asset classes that had some of the lowest risk weights according to regulatory capital requirements experienced severe losses in the crisis ***(see Box F: Improvements in Regulatory Capital and Accounting Measures of Assets)***. These classes included residential mortgages, highly rated MBS and structured securities, and trading activities. Further, the crisis showed that some of the capital instruments held by banks to meet regulatory requirements were less able than anticipated to absorb the losses during this period.

The overall U.S. financial system now has a much higher level and quality of capital than it did in 2007 for several reasons. One source of improvement is the exigent assistance provided by the government to Fannie Mae and Freddie Mac. Another temporary source of the improvement was the preferred capital provided through the TARP, most of which has since been repaid to the government. A permanent source of improvement is the increase in privately sourced high-quality capital at regulated banking institutions ***(Chart 5.1.17)***. Many banks also lowered or suspended capital distributions during the crisis, some in response to government insistence ***(Chart 5.3.4)***. The rise in capital ratios for the system also partly reflects the failure of weak specialty mortgage finance institutions, which removes undercapitalized firms from the aggregate. The remaining specialty finance companies primarily are

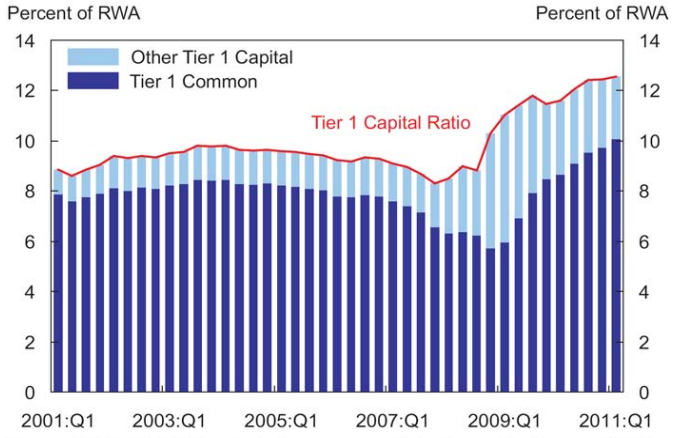
Chart 5.3.5 Change in Tier 1 Common Ratios for Large BHCs



Source: FR Y-9C

Note: Domestically owned BHCs.

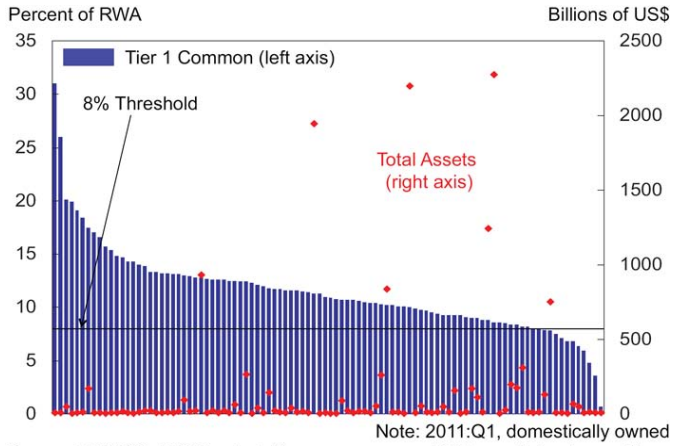
Chart 5.3.6 Aggregate Large BHC Capital Ratios



Source: FR Y-9C, FSOC calculations

Note: Domestically owned BHCs.

Chart 5.3.7 Tier 1 Common at the 100 Largest BHCs



Note: 2011:Q1, domestically owned BHCs, excludes two outliers.

Source: FR Y-9C, FSOC calculations

stronger, better-capitalized institutions focused on secured business and consumer lending.

The SCAP focused on the level of common equity of the 19 banking firms assessed using a measure based on common equity that was consistent with existing regulatory rules, referred to as tier 1 common, relative to risk-weighted assets. Tier 1 common is higher quality than other forms of capital. Under the SCAP, some firms were required to raise additional capital in 2009 so that their tier 1 common ratio would remain above 4 percent in a hypothetical, more adverse macroeconomic scenario.

The aggregate dollar amount of tier 1 common equity at BHCs increased by $333 billion to $912 billion from first quarter 2009 through first quarter 2011, and the tier 1 common ratio increased by 4.1 percentage points to 10.1 percent. These increases were due to private capital raising, conversion of preferred equity to common equity, and retained earnings ***(Chart 5.3.5)***. In addition, reserves for expected loan losses increased by $22 billion to $200 billion over this period. Consequently, as of first quarter 2011, the banking system had $1.11 trillion of tier 1 common equity plus loan loss reserves to absorb losses.

The vast majority of the top 100 U.S. BHCs now hold sufficient amounts of high quality tier 1 common equity, to easily exceed regulatory minimums for all forms of capital ***(Charts 5.3.6*** and ***5.3.7)***.

Stronger bank capital and liquidity standards have been a key element of the G-20 financial sector reform objectives, and the United States has been significantly involved with the Basel Committee on Banking Supervision and its oversight body, the Group of Governors and Heads of Supervision, to help this work progress. This global regulatory framework for bank capital (often referred to as "Basel III") was published on December 16, 2010. The new framework strengthens the resilience of the banking system through a number of prudential measures ***(see Box G: Analytical Basis for Basel III Capital Standards)***. Staff at the federal banking agencies are currently working

Box G: Analytical Basis for Basel III Capital Standards

Capital—the excess of assets over liabilities—is the most important measure of a bank's viability. Banks need to hold sufficient capital to handle financial stress, since the owners of a bank's capital must bear unexpected losses. Determining the appropriate level of capital is a challenging task for banks and their supervisors. Since the global financial crisis, international supervisors have introduced new standards that will lead to much higher capital levels.

Highlighting the importance of capital and the need for consistency, international supervisors on the Basel Committee on Banking Supervision have agreed to an international standard since 1988 (Basel I). The standard was revised significantly in 2004 (Basel II).

During the financial crisis, many banks and other large financial institutions did not have sufficient capital to reassure creditors and other counterparties that they would survive as going concerns. Supervisors launched a range of analytical projects to determine the appropriate level for a new capital standard.

The result of those efforts was the Basel III accord, which was agreed to in late 2010. The new standard includes a higher minimum capital requirement of 4.5 percent of risk-weighted assets, which is the amount of capital that a bank would generally need to be regarded as a viable concern; a new "capital conservation buffer" of 2.5 percent to provide a cushion during financial shocks and enable banks to remain above the 4.5 percent minimum; and more stringent risk-weights on certain types of risky assets, particularly securities and derivatives.

Crucially, Basel III also defines capital more narrowly than the previous Basel agreements. The new tier 1 common capital measure is limited mainly to common equity, because common stockholders are the only investors who are reliably available to absorb losses during a financial crisis.

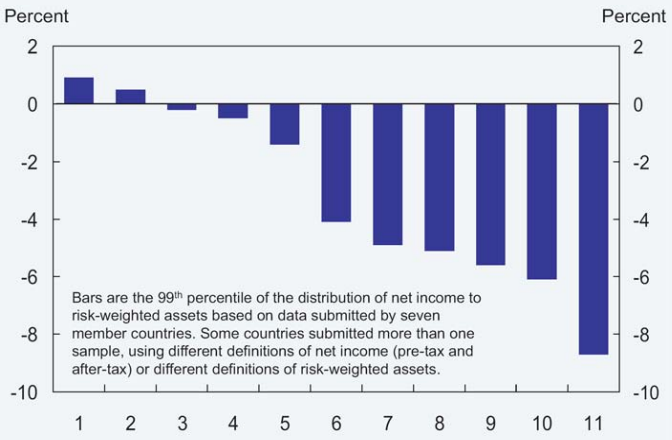
Banks will be significantly more resilient to financial shocks under the new standard.

To determine the 2.5 percent conservation buffer, supervisors examined stress test results from several jurisdictions as well as historical data on the experience of banks during the recent financial crisis and earlier stress episodes. The buffer is designed to partly mitigate the impact of pro-cyclicality on bank balance sheets: building capital in good times and shrinking during periods of stress.

To determine the 4.5 percent minimum standard, supervisors analyzed the historical distribution of net income in the banking industry relative to risk-weighted assets. Unlike the calibration of the conservation buffer, which was based on periods of stress, the calibration of the minimum was meant to apply across all points in time.

The analysis provided important insights into the scale of losses experienced historically by banks in various countries. The chart illustrates the 99th percentile of losses experienced by banks in the countries that participated in the Basel discussions. In other words, 99 percent of the time, banks performed better than these levels ***(Chart G.1)***. The assumption underlying this

Chart G.1 Return on Risk-Weighted Assets: 99th Percentile



Source: Basel Committee on Banking Supervision

analysis is that if capital were set at a level that could absorb a high-percentile net loss realization during a period of stress, creditors and counterparties would view the bank as a viable concern. The table shows the same calculations for U.S. bank holding companies, looking at different periods, samples of banks, and percentiles ***(Chart G.2)***.

There are some reasons to treat these numbers with caution as to the true extent of possible losses. First, if a bank failed, its last quarters of (presumably) very large losses might not be captured in the data. In addition, any losses that were avoided as the result of interventions—including actions such as guarantees, loss-sharing arrangements, and resolution funds—would not be reflected in these data.

According to these results, the 99th percentile experience for net income relative to risk-weighted assets ranged from a 1 percent gain to a loss of more than 8 percent. The median value across all countries was a loss of 4 percent. Taking various adjustments into account (under the new standard, risk-weighted assets will generally be higher than under the old standard), the committee viewed these results as confirming the new 4.5 percent regulatory minimum.

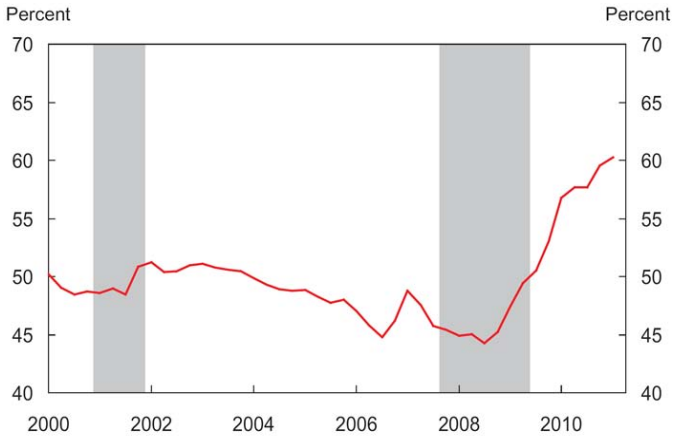
Chart G.2 Percentile of the Distribution of After-Tax Net Income to RWA for U.S. BHCs

		Percentile						
	Number of Observations	*95/5*	*99/1*	*99.5/0.5*	*99.9/0.10*	*99.95/0.05*	*99.97/0.03*	*99.99/0.01*
Annual, 1981-2009								
Sample	9,534	-1.01	-5.44	-7.45	-13.07	-17.30	-19.41	-29.18
Top 20	580	-1.35	-4.08	-4.91	-6.50	-6.50	-6.50	-6.50
Below Top 20	8,954	-0.93	-5.52	-7.53	-13.08	-17.30	-19.41	-29.18
Rolling four quarters, 1986-2009								
Sample	26,862	-1.13	-5.77	-7.89	-14.86	-20.35	-24.23	-28.48
Top 20	1,775	-1.36	-2.95	-4.76	-6.50	-11.32	-11.32	-11.32
Below Top 20	25,087	-1.10	-5.95	-8.11	-14.90	-21.30	-24.35	-28.48
Rolling six quarters, 1986-2009								
Sample	25,039	-1.38	-7.33	-10.31	-18.33	-25.18	-28.59	-34.35
Top 20	1,711	-1.15	-3.74	-4.81	-7.76	-11.22	-11.22	-11.22
Below Top 20	23,328	-1.42	-7.51	-10.59	-19.67	-30.04	-30.04	-34.35
Rolling eight quarters, 1986-2009								
Sample	23,335	-1.33	-7.94	-11.72	-21.34	-29.22	-33.33	-39.18
Top 20	1,652	-0.62	-3.96	-5.64	-7.99	-8.87	-8.87	-8.87
Below Top 20	21,683	-1.42	-8.37	-11.99	-21.88	-29.96	-34.89	-39.18

Source: Federal Reserve, FR Y-9C Reports

Note: Figures are the ratio of net income after taxes to risk-weighted assets. Risk-weighted assets are estimated for 1981 to1992 based on the average relationship of RWA to total assets during the period when both variables are available. The sample consists of all top-tier BHCs with total assets greater than $1 billion (in 2005 dollars) at the beginning of each year. Top-twenty BHCs are by assets in each year.

Chart 5.3.8 Core Deposits as a Percent of Total Liabilities



Source: FDIC, FSOC calculations

Note: FDIC-insured institutions.

together to implement Basel III standards in the United States.

As bank balance sheets have improved, regulators have been assessing requests by banks to resume or increase capital distributions to shareholders. The Federal Reserve evaluated these requests as part of its efforts to ensure that large complex banking institutions improve their capital planning ***(see Box H: Improving Capital Planning)***.

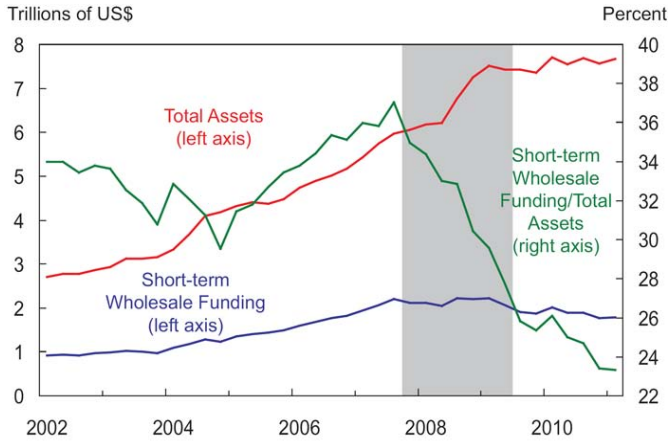
5.3.2 Liquidity

Since the financial crisis, financial institutions have taken steps to manage their liquidity more conservatively. Banks and other financial institutions have reduced their reliance on short-term wholesale funding markets and have extended the maturity of their liabilities.

The liquidity risk faced by a financial institution is a function of the liquidity of its assets relative to the term and reliability of its funding. A greater reliance on wholesale funding markets, particularly those for short-term debt ***(see Section 5.2.6)***, can potentially place significant strains on financial intermediaries during periods of market stress. If liquid assets are not sufficient to meet an abrupt withdrawal of less stable short-term liabilities, then an institution may be forced to sell less-liquid assets at a discount. Losses from such asset "fire sales" and broader price declines can undermine the financial condition of even healthy institutions, potentially leading to contagion effects that are quickly transmitted to the broader financial system.

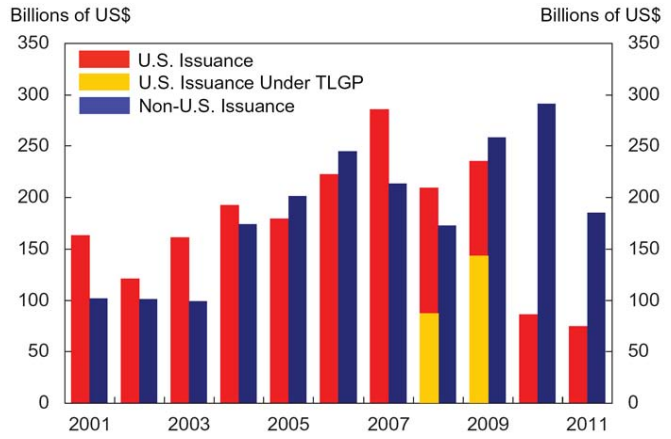
One of the key factors that contributed to the financial crisis was insufficient analysis and management of liquidity risk by participants in short-term money markets. During the crisis, weaknesses in the liquidity risk profiles of financial institutions became evident and required a significant expansion of government support that went well beyond the traditional safety net extended to regulated depository institutions ***(see Section 5.1).*** Exposure of these weaknesses has given financial institutions and market participants a better

Chart 5.3.9 Short-Term Wholesale Funding at Large BHCs



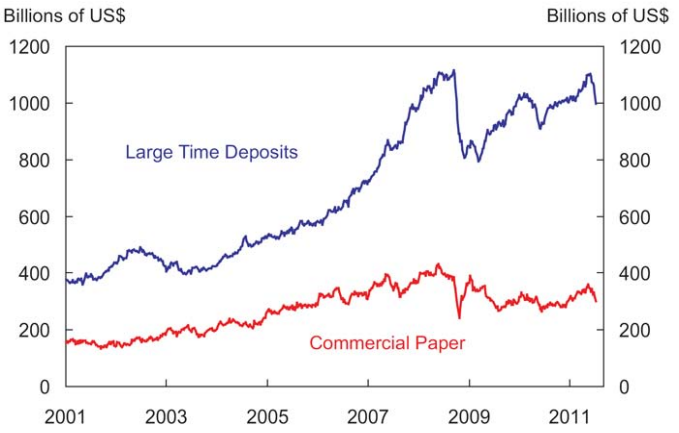
Source: FR Y-9C Note: Aggregation of BAC, C, JPM, and WFC.

Chart 5.3.10 Domestic vs. Foreign US$ Bank Debt Issuance



Source: Dealogic Note: 2011 YTD as of 7/11/2011.

Chart 5.3.11 Foreign Bank Issuance of US$ Short-Term Debt



Source: Federal Reserve Note: CP includes domestic issuers w/ foreign parent.

understanding of the vulnerabilities in these markets and, in particular, of the importance of liquidity risk management.

Liquidity risk in the U.S. financial sector has fallen since the crisis, as financial institutions have more liquid assets and more stable liabilities on their balance sheets. On the liability side, short-term wholesale debt outstanding has declined since the crisis while retail deposits have increased. Indeed, core deposits now make up a larger percentage of the total liabilities of FDIC-insured institutions and support a greater portion of their less liquid loan assets ***(Chart 5.3.8)***. The reduced reliance on short-term wholesale debt for funding also has been notable among larger U.S. institutions ***(Chart 5.3.9)***. This shift has been driven in part by a general "flight-to-quality" away from riskier investments as well as higher levels of deposit insurance coverage. In addition, the low short-term interest rate environment of recent years has lowered incentives for nonfinancial corporations to sweep their cash balances out of banks into overnight investments.

The long-term debt profile of U.S. financial institutions has also improved, in part because longer term funding needs have been modest given strong deposit inflows and subdued private nonfinancial credit growth. New issuance of longer term debt by financial institutions has been low despite the large volumes of maturing government-guaranteed and nonguaranteed debt ***(Charts 5.3.10*** and ***5.1.12)***. On the asset side, U.S. financial institutions have enhanced their liquidity profile by increasing balances of highly liquid securities such as Treasuries, agency debt, and agency MBS on their balance sheets.

In contrast to domestic institutions, foreign financial institutions continue to have elevated levels of short-term wholesale debt outstanding ***(Chart 5.3.11)***. Their issuance of long-term U.S. dollar denominated debt also remains elevated. Outside of a decline in foreign-bank support of ABCP conduits, the composition of foreign bank short- and long-term wholesale U.S. dollar-denominated debt appears to

Box H: Improving Capital Planning

Financial institutions' processes for managing and allocating their capital resources are critical to their individual health and performance, and to the stability and effective functioning of the U.S. financial system. In the recent Comprehensive Capital Analysis and Review (CCAR), the Federal Reserve conducted a forward-looking evaluation of the internal capital planning processes of large complex bank holding companies (BHCs). The evaluation found that all of the large firms needed to bolster their capital planning.

The CCAR was the first in-depth and cross-sectional investigation of the capital planning process of large U.S. financial institutions ever conducted. Nineteen large U.S. BHCs were required to submit comprehensive capital plans and additional supervisory information, and these submissions were evaluated across five areas:

1. Capital assessment and planning processes
2. Capital distribution policy
3. Plans to repay any government investment
4. Ability to absorb losses under several scenarios
5. Plans for addressing the expected impact of Basel III and the Dodd-Frank Act

The CCAR was a substantial strengthening of previous approaches to ensure that large BHCs have thorough and robust processes for managing and allocating their capital resources. The CCAR built on lessons regulators learned during the financial crisis about the importance of a forward-looking and comprehensive approach to capital adequacy. This includes an assessment of the level and composition of a banking organization's capital resources under stressed economic and financial market conditions. The CCAR's forward-looking evaluation encompassed both quantitative assessments and qualitative reviews of large BHC's processes for assessing, and strategies for managing, their capital resources. This analysis complements comparisons of current capital amounts relative to regulatory minimum requirements, internal management targets, and capital levels at peer institutions. In addition, while traditional approaches have tended to evaluate individual capital actions in isolation, the CCAR took a longer run, holistic view of a firm's strategy and management of its capital resources over a two-year period. Finally, the CCAR expanded on traditional practices by undertaking this assessment of the largest BHCs simultaneously, thus allowing the process to be informed by a horizontal perspective of the financial condition of and outlook for these firms.

An important innovation in the CCAR is the expectation that large BHCs will submit annual comprehensive capital plans to the Federal Reserve. These plans will describe their strategies for managing their capital over a minimum 24-month forward-planning horizon. While the specific elements of the plan may evolve over time, the following are some of the key components:

- A description of the firm's current regulatory capital base, including key contractual terms of its capital instruments and any plans to retire, refinance, or replace the instruments over the planning horizon.
- A description of all planned capital actions (e.g., dividends, share repurchases, and issuance), as well as anticipated changes in the firm's risk profile, business strategy, or corporate structure over the planning horizon.
- A description of the firm's processes and policies for determining the size of dividend and common stock repurchase programs under various conditions.
- The firm's assessment of potential losses, earnings, and other resources available to absorb such losses in stressed economic and financial market environments, and the resulting impact on a firm's capital adequacy and capital needs over the planning horizon.
- An assessment, accompanied by supporting analysis, of the post-stress capital needed by the firm to continue operations, including its functions as a credit intermediary.

The CCAR is a key method through which the Federal Reserve will hold BHCs—and their boards—to high standards in the critically important areas of assessing capital needs on the basis of all a firm's activities and firm-wide risk exposures, and ensuring that the firm uses strong capital planning and management practices to make decisions that can affect capital. While many of the firms have made significant progress in enhancing their capital planning practices over the past 18 to 24 months, the evaluation found that all of the large firms needed to continue efforts to bolster their capital planning.

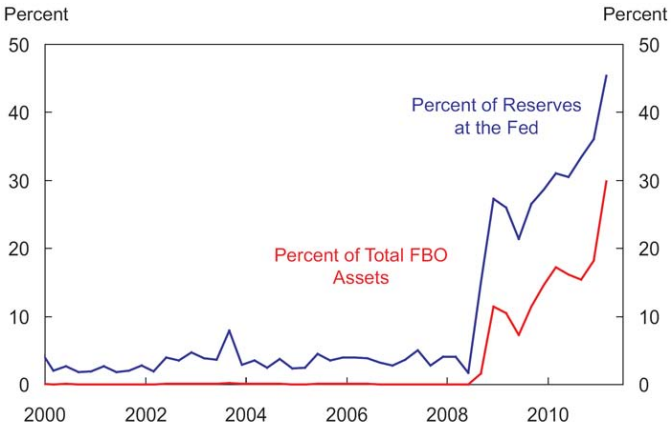
A large majority of the 19 firms that participated in the CCAR proposed some form of capital distribution in 2011; most of the proposals involved a common dividend increase at some point in 2011. Some of the proposed increases were extremely modest, while others were more substantial. In nearly all cases, however, the levels of proposed dividend payments remained well below the levels that prevailed before the recent crisis. A number of firms proposed common share repurchase programs; in many cases, these repurchase programs were accompanied by proposed dividend increases. Several firms also requested the early redemption or retirement of trust-preferred securities that currently qualify as tier 1 capital but will be phased out as a result of the Dodd-Frank Act.

Each of the participating firms that requested increased capital distributions in 2011 was informed in March 2011 whether the Federal Reserve had any objection to the proposed increases. If the Federal Reserve did not object to the distributions proposed in a firm's plan, the firm was free to make the distributions, subject to ongoing monitoring of its financial condition and operating environment.

In the case of an objection, the firm had the option of submitting a revised plan for consideration as early as second quarter 2011. BHCs are expected to address any supervisory concerns with the initial plans as part of their resubmissions.

Consistent with the overall supervisory goals of the CCAR, the focus of the stress scenario used in the evaluation was on assessing the sensitivity of the firms' own projections of capital under both baseline and stress scenarios to alternative assumptions and estimates. The Federal Reserve's development of independent supervisory estimates for losses and available resources was central to the evaluation of the firms' capital plans. However, the intensity and comprehensiveness of the analysis was tailored to each firm and portfolio, depending on several factors. These included the materiality of the estimate to the firm's post-stress capital position, the Federal Reserve's assessment of the reliability of the firm's internally generated estimates, and the width of the margin by which the firm's estimates indicated it would meet the CCAR's quantitative criteria.

Chart 5.3.12 Reserves Held by Foreign Bank Branches



Source: FFIEC 002, Flow of Funds Note: U.S. branches and agencies of foreign banks.

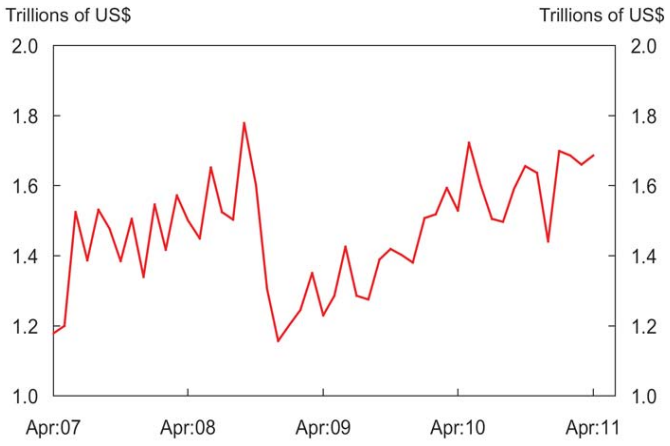
have changed little in the past couple of years. However, the liquidity risks from these institutions may be mitigated because of greater asset liquidity on their balance sheets. Indeed, at the end of first quarter 2011, FBOs held nearly 30 percent of their assets in the form of reserves at the Federal Reserve ***(Chart 5.3.12)***. While somewhat elevated, spot and forward-looking indicators of dollar funding market stress remain well below levels reached during the crisis and mid-2010.

A number of reforms will strengthen the liquidity profiles of financial institutions and thus enhance their ability to withstand a severe stress scenario without government support. The Basel III agreement includes new liquidity standards for banks and BHCs—the latter encompassing the largest U.S. broker-dealers—that will require financial firms to finance more of their assets and activities with more stable sources of funding.

This new liquidity framework has two new minimum requirements. First, the Liquidity Coverage Ratio (LCR) seeks to promote the short-term resilience of a bank's liquidity risk profile through a standard for high-quality liquid resources sufficient to survive an acute stress scenario lasting 30 days. Second, the Net Stable Funding Ratio (NSFR) addresses resilience over a longer, one-year horizon by setting a minimum level of stable funding sources relative to the liquidity profile of a bank's assets, taking into account contingent liquidity needs associated with, for example, off-balance sheet commitments. After an observation period, the LCR is scheduled to be introduced in 2015 and the NSFR is scheduled to be introduced by the start of 2018.

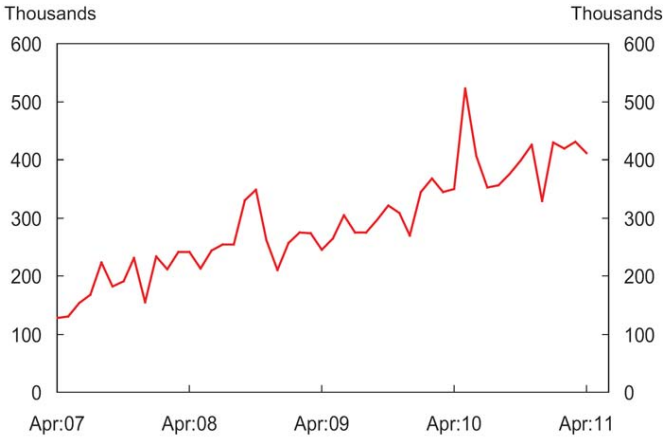
In their oversight of BHCs and broker-dealers, supervisors are reviewing the dedicated liquidity facilities of each business line. In addition, accounting standards have been revised so that financial institutions can no longer treat certain short-term funding structures as off-balance sheet. These changes should limit the possibility that these structures will receive "favorable" regulatory and financial statement treatment that

Chart 5.3.13 Average Daily Value of CLS Transfers



Source: CLS

Chart 5.3.14 Average Daily Volume of CLS Transfers



Source: CLS

obscures the risks posed to the institution and the financial system ***(see Box F: Improvements in Regulatory Capital and Accounting Measures of Assets)***.

5.3.3 Financial Infrastructure

Financial infrastructure functioned relatively well during the crisis, although the crisis revealed weaknesses and potential stresses, notably in tri-party repo and mortgage servicing, that a number of public- and private-sector initiatives have begun to address. While these initiatives should improve efficiency and market functioning, they also could increase the concentration and interconnectedness of financial markets in the global economy.

Large-value payment, clearing, and settlement systems were tested by the significant disruptions and shocks in financial markets during the crisis and its aftermath, but they generally continued to operate smoothly throughout this period. Robust risk management helped to ensure that market infrastructure operated both safely and efficiently. In addition, the government's support for financial firms and markets, especially the Federal Reserve's liquidity provisions, also indirectly eased liquidity pressures faced by financial infrastructure.

A good example of the smooth operation of financial infrastructure was in the global foreign exchange market. CLS, a system that began operating in 2002 with the purpose of addressing settlement risk in the foreign exchange market, is widely credited with maintaining confidence for continued interbank trading and settlement of foreign exchange. In fact, CLS was able to handle successfully heightened values and volumes of transactions during the 2008 financial crisis as well as during the 2010 peripheral European sovereign debt crisis ***(Charts 5.3.13*** and ***5.3.14)***.

Many of the new developments and trends in infrastructure are expected to help mitigate pre-settlement risk, while enhancing efficiency as well as market and regulatory transparency. One such development is the use of central

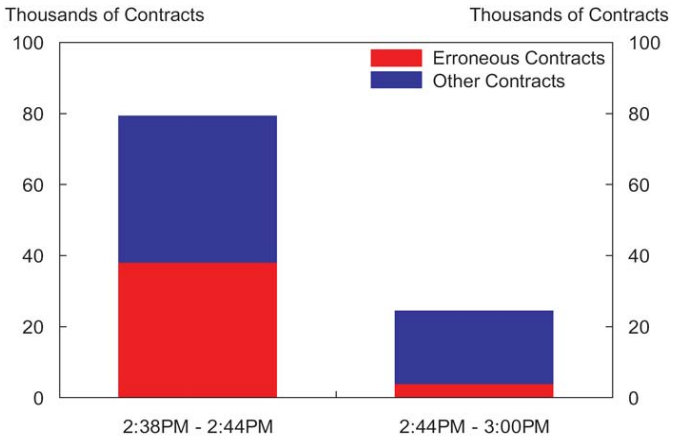
counterparty clearinghouses for facilitating trades in various derivatives and other financial products. In such arrangements, a central counterparty clearinghouse acts as a guarantor while providing multilateral netting efficiencies to reduce the counterparty credit and liquidity risks faced by market participants. Although central counterparties are principals to the transactions they clear, they do not stand to profit from changes in the market value of those transactions, and thus have stronger incentives to develop effective risk management measures and to monitor their members for potential stress. Central counterparties also can play an important role in safely managing a default of a major counterparty.

Mandatory reporting requirements, which apply to both exchange traded and centrally cleared derivatives as well as OTC derivatives, are expected to help increase the transparency of open positions in these markets. Pre-trade transparency will be enhanced through the publication of quotes and pre-trade interest for transactions; post-trade transparency will be improved through detailed reporting to regulators and the release of basic transaction information to the public.

Among its other potential benefits, electronic trading allows for wider participation and reduced costs for many financial intermediaries and other market participants. Also, through established standards for trading procedures and record keeping, electronic trading reduces the opportunities for market manipulation.

However, electronic and complex trading practices also can increase the likelihood of operational failures and malicious attacks that could threaten the stability of financial markets. In one case of an operational error, on September 13, 2010, data intended to be placed into the Globex test environment as part of the CME Group's normal testing regimen was inadvertently introduced into the live trading system. This mistake resulted in a large number of erroneous trades in a six-minute period, with additional errors occurring subsequently ***(Chart 5.3.15)***. These erroneous orders moved prices by a significant amount

Chart 5.3.15 Globex CME September 13, 2010 Incident



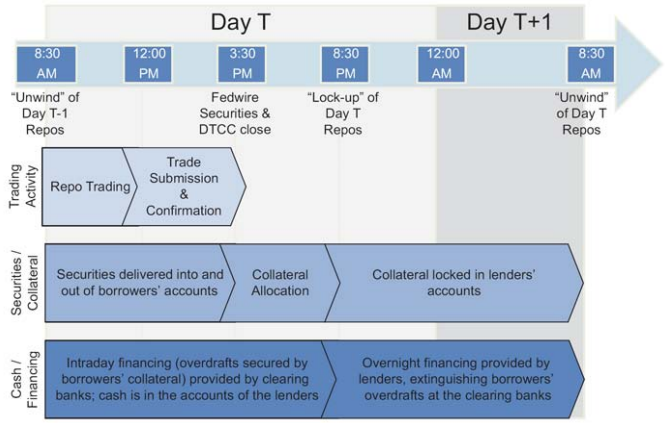
Source: CME

in six of the eight energy and metals markets that had significant trading volume, highlighting the potential for operational errors to affect market behavior. The potential for a malicious attack was illustrated when, on February 5, 2011, suspicious files were detected on the U.S. servers hosting a NASDAQ OMX web-facing application. While these suspicious files were removed immediately and there was no evidence that customer information was accessed or acquired by unauthorized parties, the incident serves as an important reminder that trading and clearing infrastructures are susceptible to intentional disruption and must be safeguarded accordingly.

The advent of global trade repositories and central clearing in OTC markets along with trends in consolidation among existing clearinghouses and exchanges is likely to increase the concentration in financial markets and the interdependencies across multiple systems and markets. For example, the financial environment that once had numerous independent clearinghouses now has fewer and larger clearinghouses, each with a global footprint. Many of the same globally-active banks participate in all of the major clearinghouses, or act as agent banks and liquidity providers to these clearinghouses. As a result of these developments, financial infrastructure is becoming more interconnected, highlighting the need for careful supervision.

In the international arena, G-20 leaders agreed to reforms of the derivatives regulatory frameworks, including requiring standardized derivatives to be centrally cleared and, where appropriate, traded on regulated platforms. U.S. regulators have also been key participants in revising CPSS-IOSCO standards on financial market infrastructures to enhance standards for payment, clearing, and settlement systems supporting global financial markets. These proposed principles will help to address the potential risks resulting from increased use of infrastructure such as central counterparties. In addition, the United States is leading a global effort to develop minimum standards for margins on derivatives that are not centrally cleared.

Chart 5.3.16 Current Tri-party Repo High Level Process Flow



Source: FRBNY White Paper

Chart 5.3.17 Tri-party Concentration by Asset Class

Collateral	Concentration of Top 3 Dealers
ABS Investment Grade and Non Investment Grade	39.9 %
Agency CMOs	43.4 %
Agency Debt and Strips	40.6 %
Agency MBS	33.2 %
CMO Private Label Investment Grade	45.3 %
CMO Private Label Non Investment Grade	**53.3 %**
Corporate Investment Grade	41.5 %
Corporate Non Investment Grade	43.1 %
Equities	45.0 %
Money Market	**60.5 %**
US Treasuries excluding Strips	44.8 %
US Treasury Strips	**53.4 %**

Source: Tri-Party Repo Infrastructure Reform Task Force Note: as of 6/2011.

Tri-party Repo

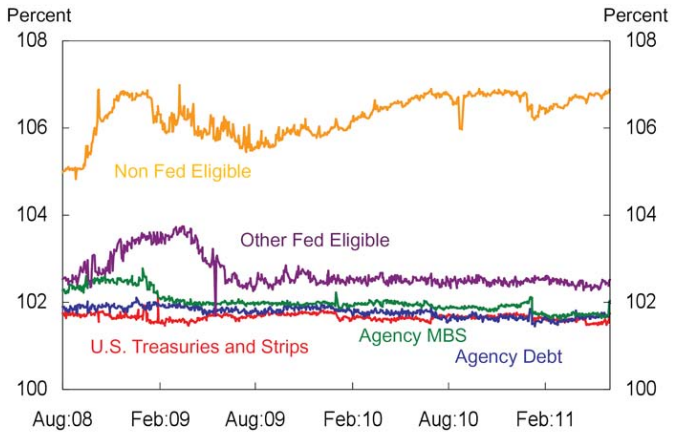
A notable exception to the smooth operation of payment, clearing, and settlement systems through the financial crisis was the tri-party repo market. The weaknesses in the settlement infrastructure in this market and the attendant flaws in the risk management practices of borrowers, lenders, and the two clearing banks significantly amplified market instability. These weaknesses, if they are not addressed, will continue to have the potential to exacerbate volatility in the overall financial system during times of stress.

Currently, all tri-party repo contracts, including those that are not scheduled to mature that day, are "unwound" each morning. This process returns cash to the repo buyers (lenders) and allows the repo sellers (borrowers, who are typically broker-dealers) to use the securities in their portfolios to settle other trades outside the tri-party repo market during the trading day. New repo contracts are not settled until the early evening. Under these arrangements, for most of each business day, the clearing banks extend hundreds of billions of dollars of intraday credit to individual dealers between the morning contract unwind and the evening settlement, at which time lender funds from the new repo contracts can be credited to the borrowers' accounts. Thus, there is an ongoing handoff of dealer exposure between lenders who bear it overnight and clearing banks that bear it during the business day ***(Chart 5.3.16)***.

This arrangement proved to be extremely destabilizing during the crisis, particularly in light of the significant concentrations of dealer collateral being financed ***(Chart 5.3.17)***. As the financial condition of some major securities dealers deteriorated, large lenders to these institutions began to withdraw their cash. Lender withdrawals thus contributed to an adverse feedback loop that exacerbated counterparty credit risk and asset price volatility, and eroded the capital and funding capacity of many financial institutions.

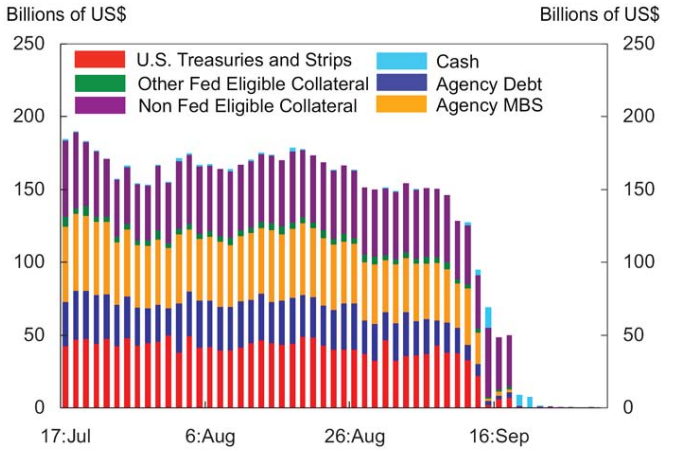
Within the tri-party repo market infrastructure, the role of the two clearing banks further intensified these dynamics. As some major

Chart 5.3.18 Tri-party Repo Aggregate Median Haircut



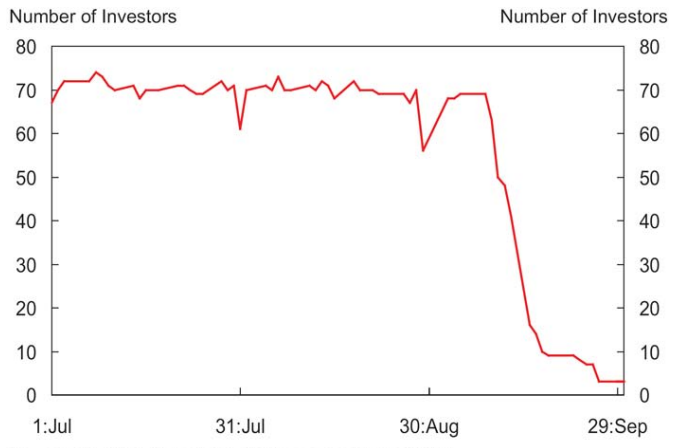
Source: FRBNY, Copeland, Martin and Walker (2010)

Chart 5.3.19 Lehman Tri-party Repo Assets in 2008



Source: FRBNY, Copeland, Martin and Walker (2010)

Chart 5.3.20 Lehman Tri-party Repo Cash Investors in 2008



Source: FRBNY, Copeland, Martin and Walker (2010)

securities dealers faced greater difficulty financing their securities portfolios overnight, clearing banks became more concerned about assuming exposure to these dealers by unwinding their trades and providing intraday credit to them. Many market participants had assumed that the clearing bank would always be available to unwind repo contracts, return cash to lenders, and finance dealers during each trading day. They were not prepared for the possibility that it would refuse to do so. This belief, and the market's reliance on clearing bank intraday credit to fund 100 percent of market activity during the trading day, obscured the credit and liquidity risks faced by participants in these transactions. Dealers were exposed to significant rollover risk because of their heavy reliance on short-term funding, which translated to a large concentration of repos maturing on any given day that needed to be replaced by new borrowings. And because these risks were not well understood beforehand, neither lenders nor clearing banks were well prepared to dispose of the collateral they would have to take on in the case of a dealer default. Given the severe strains at that time and the lack of preparedness, many cash lenders behaved like unsecured investors and rapidly closed out their repo books with troubled dealers rather than managing the credit risk exposure by raising haircuts, narrowing eligible collateral, and decreasing counterparty limits ***(Charts 5.3.18***, ***5.3.19***, and ***5.3.20)***.

The Tri-Party Repo Infrastructure Reform Task Force was launched to address some of these vulnerabilities in the tri-party repo market. The Task Force is an industry working group formed under the auspices of the Payments Risk Committee, a private-sector body sponsored by the Federal Reserve Bank of New York. The group includes representatives from institutions that are significant participants in the tri-party market, including lenders, borrowers, and the two clearing banks.

Since the Task Force issued initial recommendations in May 2010, the industry has made significant progress in improving market transparency through its monthly reporting of market volume, collateral composition, and

margin ranges charged by tri-party repo lenders for each type of collateral, which should help lay the groundwork for additional reforms. On June 27, 2011, the two clearing banks implemented collateral substitution functionality. Allowing dealers access to collateral needed to settle trades without requiring an unwind of all tri-party repo transactions each morning represents an important prerequisite for a meaningful reduction in the market's dependence on intraday credit.

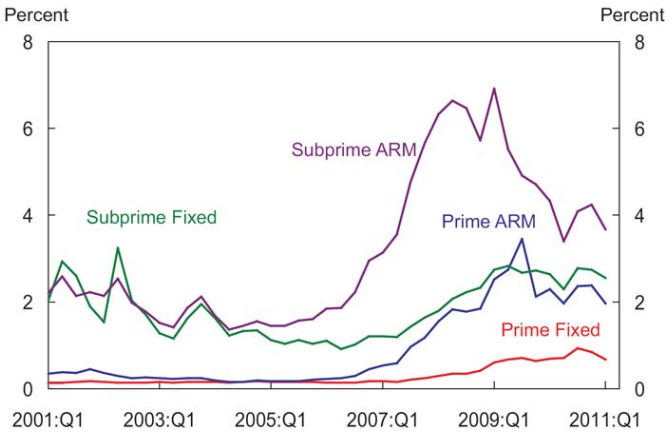
Additionally, the Task Force is on track to shorten the daily period during which clearing banks are providing intraday credit: the settlement time was moved back from 8:30 am to 10:00 am on July 25 and will be moved back further to 3:30 pm on August 22. It will also require three-way post-trade confirmation of deal details such as trade tenor as a prerequisite for settlement, starting on August 29.

However, much work remains to implement other recommendations, particularly moving market participants away from relying on clearing banks for extensions of intraday credit. The complications in addressing these issues reflect the complexities associated with compressing an end-of-day settlement process to one hour, implementing technology to support collateral substitution, and enforcing a cap on intraday credit provided by clearing banks. Consequently, the Task Force recently acknowledged that it will need time beyond 2012 to achieve these objectives. In addition to technological and infrastructure challenges, the Task Force's composition, which spans a diverse array of market participants with varied economic interests, likely has affected its timetable.

Mortgage Servicing

Another weakness in the financial infrastructure revealed during the financial crisis and after was in the systems that handled the servicing of residential mortgages. As the rate of foreclosure originations increased, disclosures of widespread irregularities in foreclosure paperwork prompted an interagency investigation ***(Chart 5.3.21)***. Evidence emerged during lawsuits brought by borrowers

Chart 5.3.21 Residential Mortgage Foreclosure Starts Rate



Source: Mortgage Bankers Association Note: NSA.

facing foreclosure that critical paperwork was deficient. For example, reports surfaced of foreclosure affidavits sworn without document review and of improper notarizations, coupled with allegations of falsified documents used in foreclosure proceedings. The matter became known as "robosigning" for the rapid, seemingly automated, manner in which flawed paperwork was generated by some mortgage servicers initiating foreclosures.

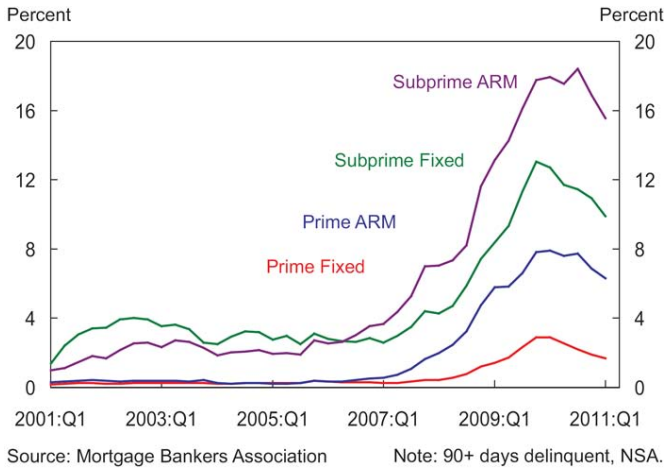
Some of the nation's largest servicers conceded possible flaws in their foreclosure procedures and, by mid-October 2010, had instituted self-imposed moratoriums on foreclosures while they conducted reviews. The federal banking regulatory agencies examine the banks' internal assessments, compliance with state foreclosure laws, and adequacy of controls and governance. Subsequently, some agencies took enforcement action against a number of servicers. Additionally, state mortgage regulators are conducting examinations of state licensed mortgage servicers.

Questions also arose from borrowers facing foreclosure about whether the parties seeking foreclosure actually owned the loans and if they had legal standing to pursue foreclosure. Issues related to the transfer of ownership of a mortgage, either as a whole loan or as part of the securitization process, and procedures for recording such transfers were factors contributing to these questions.

An additional risk is that mortgage security investors could challenge whether mortgages were transferred to securitization trusts in accordance with contractual and legal requirements. The primary concern is that document custody and transfer issues with notes and mortgages could render many private securitizations invalid.

Another ongoing issue is that many loans underlying securitizations might not meet the representations and warranties made at the time the mortgages were initially securitized or sold. This has led to requirements that mortgage originators or their successors repurchase mortgages from investors in MBS

Chart 5.3.22 Residential Mortgage Delinquency Rate



Source: Mortgage Bankers Association Note: 90+ days delinquent, NSA.

or from Fannie Mae and Freddie Mac. This risk has risen significantly as a result of high mortgage delinquencies ***(Chart 5.3.22)***. A few banks have reached settlements with the GSEs but mortgage repurchases are likely to remain elevated in the years to come.

5.3.4 Market Functioning

When markets function well, the pricing of risks and flows of funds occur unimpeded. Overall, since the major market dislocations experienced in late 2008, most markets have facilitated orderly trading and price discovery. However, certain markets have exhibited short-term dislocations, in part owing to a variety of factors pertaining to technological change and interconnectedness.

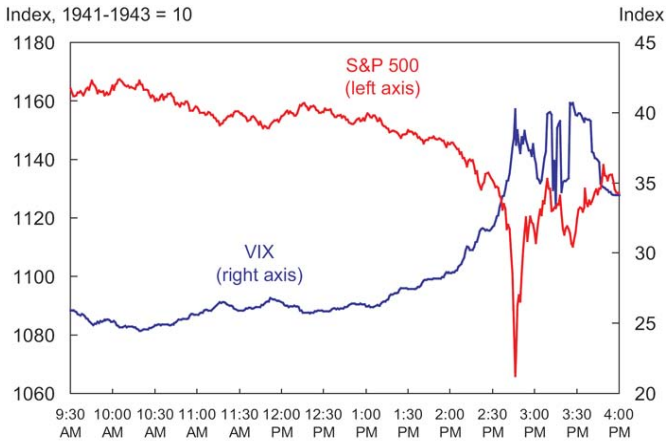
Technology has significantly altered the landscape of financial markets over recent years, with implications for the resilience of market functioning. Electronic trading, which enables extremely fast execution of orders, has led to a sizable shift in market structure, allowing for wider participation, reduced trading costs, and very short-term trading strategies that take advantage of arbitrage opportunities.

In a normal market environment, and for an investor seeking to execute a small order, the result of increased electronic trading is near-immediate execution. However, even though technology leads to fast trade execution, it can also contribute to shrinking liquidity in times of market dislocation. A number of these market developments were featured prominently during a period of extreme market volatility on May 6, 2010.

The Flash Crash

On May 6, 2010, between 2:40 pm and 3:00 pm, major indexes in both the futures and equities markets plummeted more than 5 percent in a matter of minutes before rebounding almost as quickly ***(Chart 5.3.23)***. Approximately two billion shares traded during this time with a total volume exceeding $56 billion. Over 98 percent of all shares were executed at prices within 10 percent of their 2:40 p.m. value. However, some equities experienced more severe upward and

Chart 5.3.23 S&P 500 and VIX on May 6, 2010



Source: Bloomberg

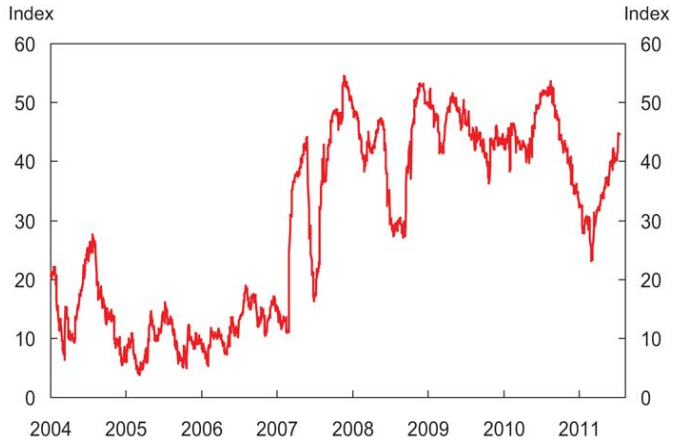
downward price movements. In particular, more than 20,000 trades in more than 300 securities were executed at prices more than 60 percent away from their values just before the onset of the flash crash. These trades were subsequently labeled erroneous and thus cancelled by the exchanges and Financial Industry Regulatory Authority.

The rapid decline in major market indexes initially began in the Chicago Mercantile Exchange S&P 500 E-mini futures contracts (S&P 500 E-mini), as a large sell order coupled with subsequent selling pressure from high-speed algorithms overwhelmed the immediately available demand. Cross-market arbitragers who bought the S&P E-mini as it declined offset their exposures through sales of individual equities or ETFs, thereby transmitting the selling pressure to other markets. With selling pressure increasing in many markets and prices dropping rapidly, many electronic market makers who were simultaneously active in several markets either widened their spreads or withdrew from trading entirely, leading to an evaporation of liquidity in many securities. Issues with data feeds resulting from delays at some exchanges also prompted participants to withdraw from markets, reducing potential purchasers and helping to allow the price declines to accelerate.

ETFs accounted for 70 percent of the 326 securities for which trades were reversed, meaning their share prices fell by at least 60 percent from the previous day's close. Bid-offer quotes from dealers widened significantly and market makers were unable to transact efficiently in the underlying basket and maintain the price of an ETF share close to the net asset value of its underlying securities. This highlights the importance of liquid markets for the efficient operation of this product.

A number of points pertaining to the functioning of markets can be drawn from this incident. First, under stressed market conditions, the automated execution of a large sell (or buy) order can trigger extreme price movements. Second, the interaction between automated execution programs and algorithmic trading strategies, which ordinarily would reduce

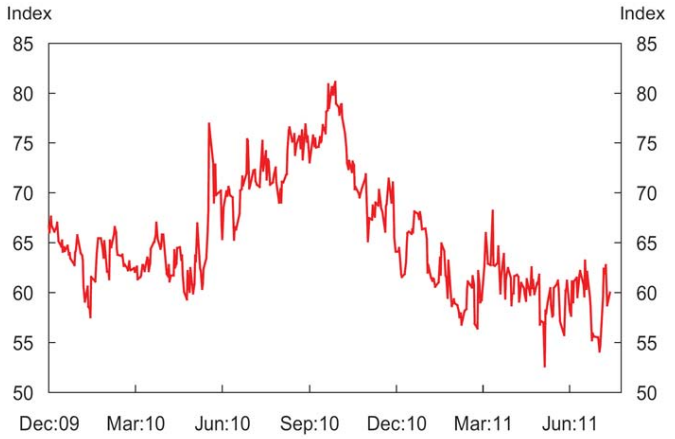
Chart 5.3.24 Citi FX/Equity Realized Correlation Index



Source: Bloomberg

Note: 3-month correlations.

Chart 5.3.25 S&P 500 Implied Correlation Index



Source: CBOE and Bloomberg

asset mispricing through exploiting temporary arbitrage opportunities, can under some circumstances quickly erode liquidity and result in disorderly markets. In particular, during the flash crash, high-speed trading algorithms chased market orders to the level of stub quotes—bids to buy or offers to sell a stock at a price so far away from the prevailing market that it is not intended to be executed, such as a bid to buy at $0.01 or an offer to sell at $100,000. Such transactions, clearly outside the scope of rational pricing, were later canceled, and the SEC later approved rules to eliminate stub quotes. In another response to the flash crash, regulators added new circuit breakers to halt trading under disorderly market conditions, with the aim of restoring investor confidence by helping to ensure that markets operate only when they can effectively carry out their critical price-discovery functions.

Heightened Correlations Across Assets

Tighter linkages between some markets were evident during the crisis. For example, on many occasions investors pulled away from assets perceived to be risky, such as equities, in favor of U.S. Treasuries and other assets perceived to provide a safe haven. Beyond the developments associated with the financial crisis, there have been a number of developments that potentially could lead to stronger linkages and higher correlation between assets and across markets. These developments include the rapid spread of information, economic integration, and globalization of capital flows.

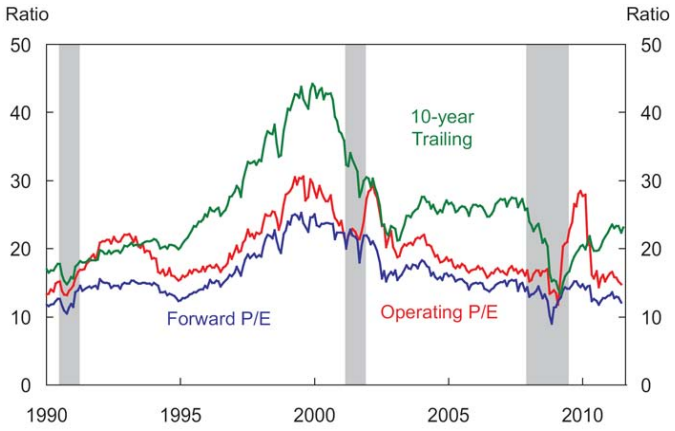
As one example of stronger linkages across financial markets, correlations across equity markets and currencies generally remain at elevated levels relative to those of the mid-2000s ***(Chart 5.3.24)***. Even so, another measure shows that correlations among equities have declined since mid-2010 ***(Chart 5.3.25)***.

Chart 5.4.1 Dow Jones U.S. Total Stock Market Index

Source: Dow Jones

Note: 12/31/1970 = 830.27.

Chart 5.4.2 Price-to-Earnings Ratio for Corporate Equities



Source: Thomson Financial

5.4 Prices and Incentives

Appropriate pricing of financial assets and instruments, along with proper incentives to take on risk, are central to maintaining financial stability. For example, the two large GSEs encouraged housing purchases and real estate investment over other sectors, which misaligned incentives in the financial system. Currently, the pricing of risk in a number of important markets—including corporate equities, corporate bonds, and real estate—appears to be in line with historical averages. Compensation for risk in the market for loans to low-rated, high-yield corporate borrowers remains in the range experienced in the last credit cycle. While the values of commodities and agricultural land are at long-run highs, there does not appear to be substantial leverage in those markets.

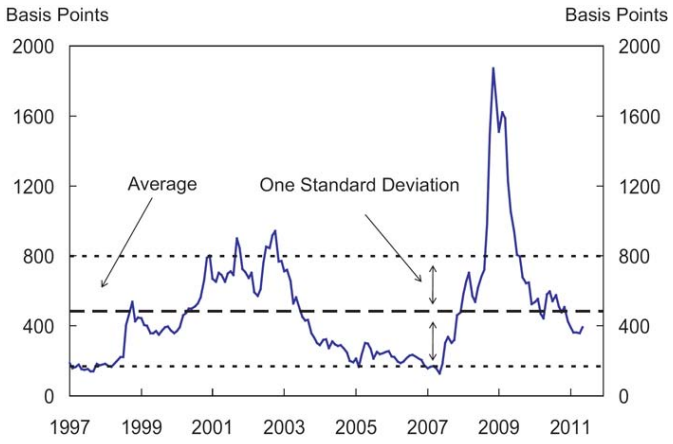
5.4.1 Securities Markets

Prices of securities reflect a variety of factors, including investors' outlook for future cash flows from a particular asset and the premium they demand to compensate for the risks associated with that asset. When the price of an asset rises, it could be because investors raised their forecast of future cash flows or because they lowered the risk premium. Distinguishing between these two reasons is empirically challenging. When an asset's valuation is high, it may be vulnerable to reduced investor willingness to hold risk or to a decline in investors' evaluation of the asset's future outlook.

Equities

Equity market values have rebounded considerably from their March 2009 lows ***(Chart 5.4.1)***. A valuation measure of corporate equities typically used by analysts is the ratio of a stock's price to the earnings of the corporation. This measure can be computed using realized current operating earnings, forward-looking estimates of future earnings, or trailing earnings. The price-to-earnings (P/E) ratios for the S&P 500 index appear in line with their average over the past 20 years ***(Chart 5.4.2)***. Investors also

Chart 5.4.3 High-Yield Credit Risk Premium



Source: FSOC calculations based on market consensus

compare the return on a risky investment asset such as stocks to a low-risk asset such as Treasury bonds to determine the risk premium. With interest rates currently very low, this second measure suggests that the valuation of corporate equities could still be somewhat below historical norms.

Corporate Bonds

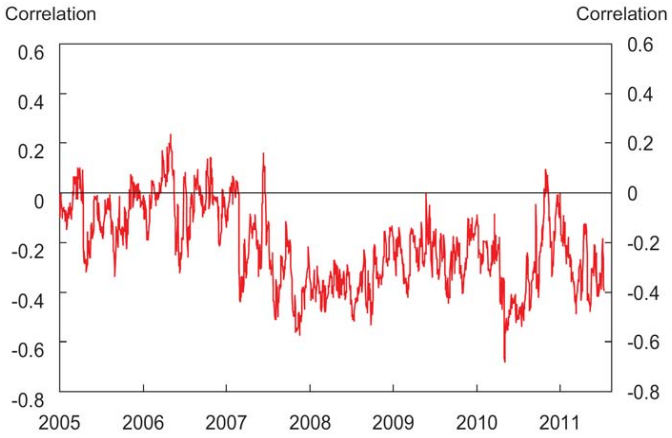
In corporate credit markets, the high-yield credit risk premium can be viewed as a proxy for risk appetite. The premium rises when investors are less willing to take on risk and demand higher compensation for a given level of risk; conversely, the premium declines when investors are more willing to take on risk. Calculation of the credit risk premium using estimates of the consensus default rate, which in early 2011 was approximately 2 percent, reveals that the credit risk premium is below its historical average but within recent ranges ***(Chart 5.4.3)***. As discussed in Section 4.2, there are several reasons why corporate defaults have been lower than expected since the beginning of the financial crisis, including improved fundamentals of high-yield companies and the ability of companies to refinance near-term maturing debt in capital markets.

U.S. Treasuries

Investors in long-term Treasuries must consider the risk associated with movements in nominal interest rates over the life of the security. In particular, if nominal rates rise, the secondary market price of the security will fall. Because this interest rate risk is greater for longer maturity bonds, investors generally require additional compensation to hold longer-maturity debt. That compensation is often referred to as the "term premium."

Investors have tended to increase their investment in U.S. Treasuries in periods of financial stress because they see Treasuries as relatively safe and liquid—in other words, a safe-haven investment. In these periods, investors appear to be more willing to accept a lower risk premium for longer maturity Treasuries. The correlation between stock prices and Treasury returns—a measure of this safe-haven demand—

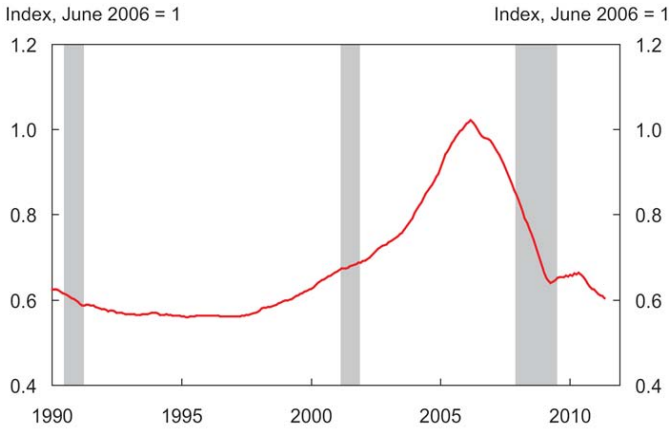
Chart 5.4.4 Correlation of Stock Prices and Treasury Returns



Source: FRB staff calculations

Note: S&P 500 Index and 5-minute returns of 10-year Treasuries used in exponentially weighted moving average.

Chart 5.4.5 Price-to-Rent Ratio for Residential Property



Source: CoreLogic and BLS

turned sharply negative as the financial crisis started to unfold in 2007. The correlation turned sharply negative again in early 2010 and in early 2011, periods when European sovereign debt problems escalated, also suggesting safe-haven demands ***(Chart 5.4.4)***.

5.4.2 Real Estate Markets

Rapid growth in credit for real estate purchase and investment can produce large imbalances. Assessments of valuations are challenged by the illiquidity inherent in real estate and the lack of comparability among property types.

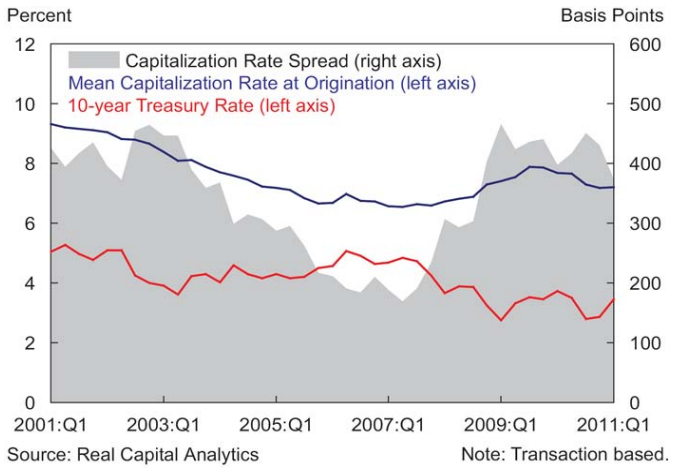
Residential Real Estate

In evaluating residential real estate prices, the ratio between the price of a single-family house and the rent it could obtain is analogous to the P/E ratio for stocks. However, calculating this ratio in the case of real estate is more difficult because, unlike stocks, residential property is very illiquid, real estate provides significant nonmonetary returns to households, and properties are seldom exactly comparable. Moreover, aggregate indexes of home prices and rents probably measure the prices and rents of different properties. Despite these qualifications, indexes based on price-to-rent ratios for residential real estate can still provide information about broad trends in the valuation of housing. One such index reached a record high in 2006, at the peak of the housing boom, but has since reversed essentially all of the increase between the late 1990s and 2006. The most recent readings put this residential real estate valuation metric about in line with its average over the 1990s ***(Chart 5.4.5)***.

Commercial Real Estate

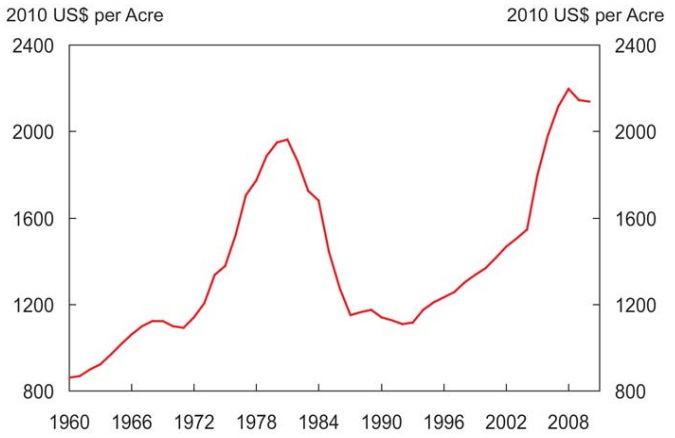
Notwithstanding that commercial real estate (CRE) values have broadly declined, it is useful to observe trends in capitalization rates—the ratio of income produced by a property to the property value—on newly originated loans ***(Chart 4.1.15)***. Capitalization rates broadly fell over the course of 2010 and the first part of 2011, signaling higher CRE valuations. The bulk of recent commerical property sales have involved higher quality properties in major cities, where valuations have increased

Chart 5.4.6 Capitalization Rate and Spread



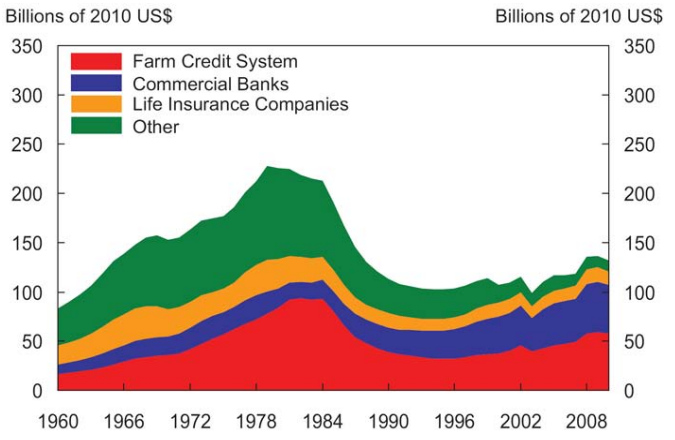
Source: Real Capital Analytics Note: Transaction based.

Chart 5.4.7 Farm Land Prices



Source: USDA, FRB staff estimates

Chart 5.4.8 Agricultural Real Estate Debt Outstanding



Source: USDA, FRB staff estimates

relative to the rest of the market. Valuations in these markets have also benefited from a lower interest rate environment, which has contributed to the decline in capitalization rates. However, the spread between the capitalization rate and the risk-free rate remains elevated compared with pre-crisis levels, signaling that investors are currently applying a higher risk premium ***(Chart 5.4.6)***.

Agricultural Land

Agricultural land values have increased, driven by rising commodity prices, favorable export conditions, and low interest rates. On an inflation-adjusted basis, agricultural land values are now near the highest levels of the past 50 years ***(Chart 5.4.7)***. Currently, in the aggregate, incomes in the U.S. farm sector are performing well, forecasts for production and demand are positive, and debt levels in general do not appear excessive. However, if farm incomes fall owing to a decline in either domestic or export demand, or an increase in operating costs, then agricultural land values may be susceptible to a decline.

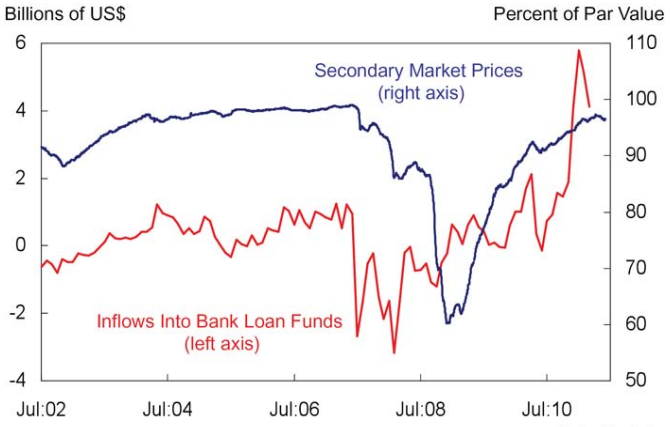
Adjusting for inflation, current agricultural real estate debt levels remain significantly below the levels of the late 1970s ***(Chart 5.4.8)***. The Farm Credit System and community banks that specialize in agriculture lending have the bulk of exposures to agricultural land. While the extent to which high agricultural land prices reflect their underlying fundamentals is uncertain, a sizable decline in land values could have an adverse impact on the financial institutions that hold farm loans. These institutions will need to maintain prudent lending standards in the face of high and rising land values.

5.4.3 Loans

During a prolonged period of low interest rates, some institutions may reach for yield by increasing duration, lending to lower rated borrowers, or employing more leverage. Such concerns today are focused in the market for low-rated corporate credits, referred to as the leveraged loan market.

Leveraged loans—a form of floating rate instrument that would provide protection

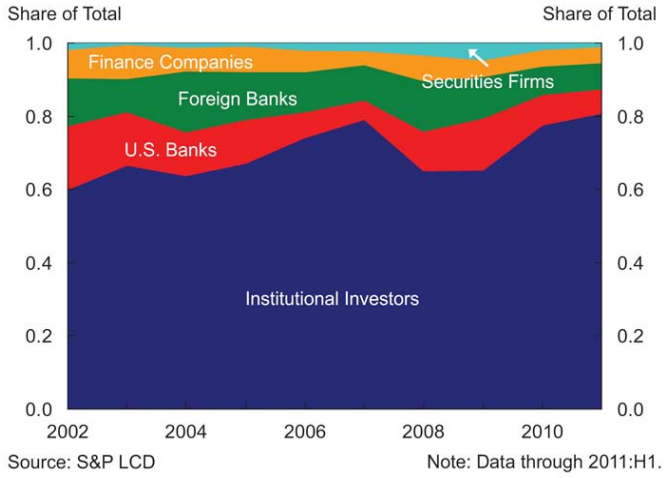
Chart 5.4.9 Syndicated Leveraged Loan Market



Source: ICI, LSTA/Thomson Reuters LPC MTM Pricing

Note: Mark-to-Market Pricing.

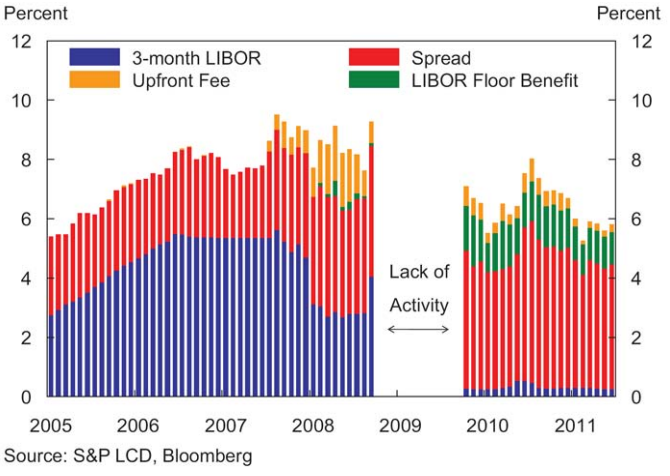
Chart 5.4.10 Composition of Leveraged Loan Investors



Source: S&P LCD

Note: Data through 2011:H1.

Chart 5.4.11 All in Cost of Leveraged Loans



Source: S&P LCD, Bloomberg

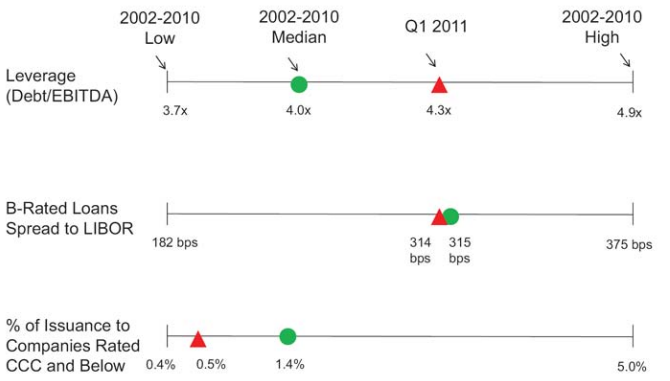
against interest rate risk relative to fixed rate instruments in a rising rate environment—have attracted strong investor interest. Bank loan funds, for example, have experienced record high inflows, bolstering secondary market prices and filling the gap left by maturing collateralized loan obligation vehicles ***(Chart 5.4.9)***. Most leveraged loans are not retained by bank arrangers; rather, they are increasingly sold to institutional investors ***(Chart 5.4.10)***. Unlike the peak of the market in 2006–07, little evidence exists that leverage is being employed on any significant scale in the funding of loans through repos or total return swaps, suggesting that the potential for a rapid and disorderly deleveraging in this market is limited.

The all-in cost of leveraged loans has been driven lower by the low-rate environment, although the average spread required by investors is higher ***(Chart 5.4.11)***. The lower cost has facilitated heavy loan refinancing: nearly three-quarters of issuance in early 2011 and more than half of issuance in 2010 was for this purpose. While issuance of leveraged loans has been robust, outstanding loans have declined, in part reflecting paydowns from robust bond issuance ***(Chart 4.1.3)***.

Most metrics for leveraged loan and high-yield bond deals remain in the middle of the range experienced through the last credit cycle, from 2002 to 2010 ***(Chart 5.4.12)***. Issuance by the lowest rated borrowers (for example, those rated CCC by S&P) remains muted compared with levels seen during 2006 and 2007.

Relative to overall total loan issuance, there is less issuance of loans for leveraged buyouts, and those issued tend to require higher equity contributions. However, issuance of certain loan structures has been increasing since 2009. Loan issuance for the purpose of financing a dividend or shareholder buyback, also known as a dividend recapitalization, reached historically high levels in early 2011 owing to low interest rates and strong demand for loan assets. Additionally, covenant-lite loans—those that do not provide investors with the traditional protection of maintenance covenants—have recently made up a high percentage of issuance

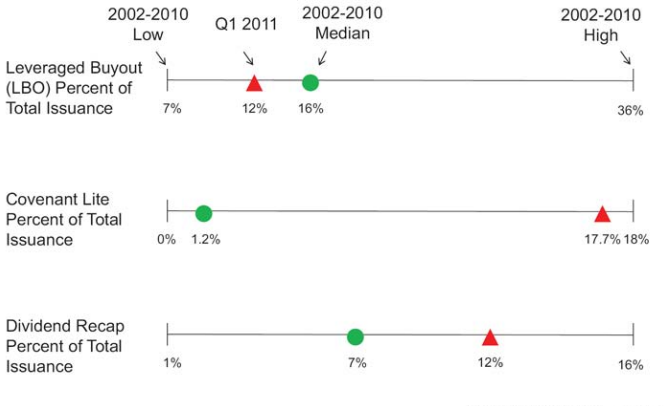
Chart 5.4.12 Leveraged Loan New Issuance Metrics



Source: S&P LCD, FSOC calculations

Note: 2002-2010 annual average of all deals.

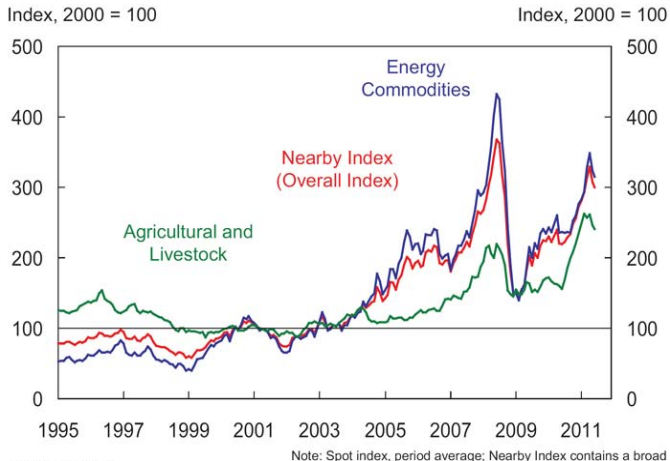
Chart 5.4.13 Leveraged Loan New Issuance Characteristics



Source: S&P LCD, FSOC calculations

Note: 2002-2010 annual average of all deals.

Chart 5.4.14 Commodity Prices



Source: S&P

Note: Spot index, period average; Nearby Index contains a broad cross-section of commodities, including industrial metals.

(Chart 5.4.13). While neither of these issuance types may be indicative of a new vulnerability, they do reflect an increase in investor risk appetite as well as the dynamics of market competition, including pressures on fund managers to invest inflows and on arranging banks to maintain market share.

Mitigating these trends, bank underwriters have lower warehouse risk, that is, the risk of losses on assets that they are holding prior to sale. This is partly because deals are smaller than they were before the financial crisis. Also, unlike the fully committed transactions seen during 2006 and 2007, banks report that financings are currently arranged on a "best efforts" basis, in which underwriters do not commit to take on the risk of the entire loan before syndication but maintain contractual flexibility after the commitment to adjust the pricing and structure of loans (at the expense of borrowers) to market-clearing levels if necessary.

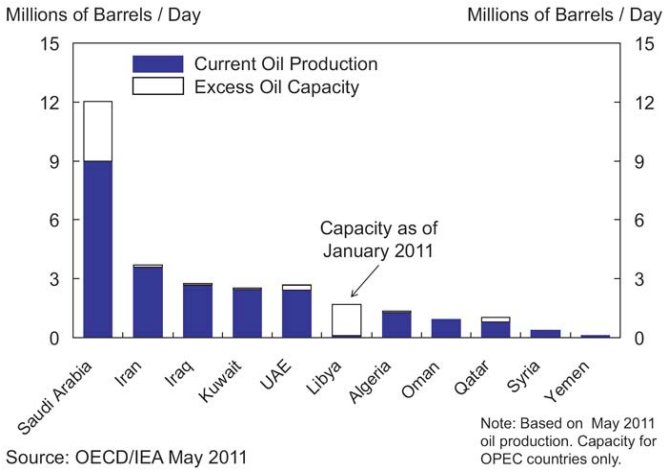
5.4.4 Commodities

Commodities prices are subject to standard demand and supply factors. Additionally, financial instruments that track commodities play an increasing role in the market.

Commodity prices rose in 2010 and early 2011. Energy prices rose strongly in the first half of 2011, but they have not reached the levels seen in mid-2008. Prices for a number of agricultural and industrial commodities have reached record levels in nominal terms ***(Chart 5.4.14)***. The global economic recovery, particularly the robust growth in many major emerging market economies, has been a major factor behind the recent strength in commodity prices.

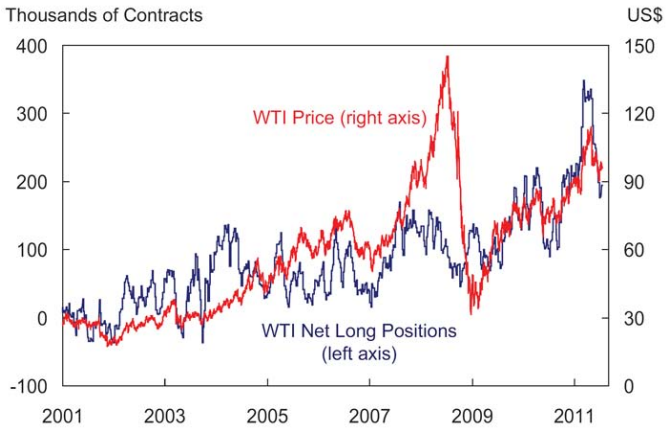
Oil prices generally have tracked the improving world economy, with the spot price of Brent crude oil, a standard for world oil prices, rising from a low of just under $34 per barrel in December 2008 to over $120 per barrel in spring 2011 before falling a little more recently. The price of West Texas Intermediate, a standard in the United States, has followed a similar pattern. Demand growth since the recession has come largely from emerging economies, as consumption in the Organisation for Economic Co-operation and Development

Chart 5.4.15 Middle East Producers: Production and Capacity



Source: OECD/IEA May 2011

Chart 5.4.16 Oil Market Price and Net Long Positions



Source: CFTC, Bloomberg

countries has grown very little during this period. Price movements in early 2011 reflected events in Libya and elsewhere in the Middle East and North Africa. While Libya accounted for only 2 percent of global supply in 2010, concerns focus on the uncertainty regarding the long-term damage to Libya's production infrastructure and to further supply impacts from the political unrest across the region. The lack of spare capacity among foreign oil producers and concerns about future long-run production growth have also added to price pressures ***(Chart 5.4.15)***.

The increased financialization or trading of liquid, synthetic financial products based on less liquid physical commodities is evidenced by the growth in commodity ETFs ***(Chart E.1)***. Additionally, the liquidity of commodity futures markets, which provide a critical price-discovery function for physical markets, is supported by speculative market makers. A rapid sell-off and spike in volatility in crude oil, refined energy, and silver markets in May 2011 coincided with an unwinding of speculative positions, which had reached record levels in a number of commodities ***(Chart 5.4.16)***. In a dynamic similar to that of the flash crash, the speed and magnitude of price declines in these markets revealed that the automatic liquidation of positions may have contributed to reduced liquidity and downward price pressure.

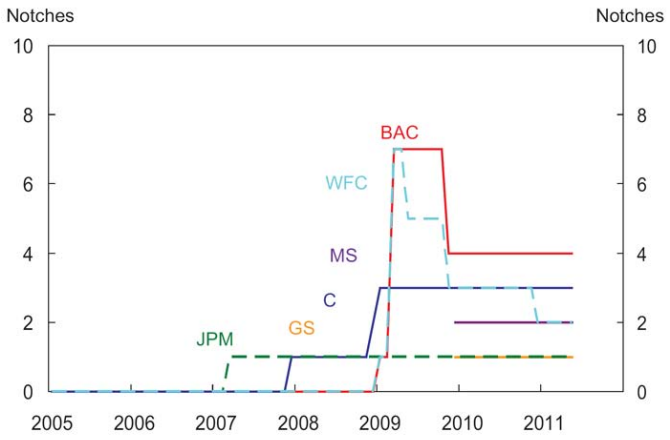
5.4.5 Incentives

Programs and policies can affect incentives for risk taking in financial markets. It is crucial that programs and policies are designed with appropriate safeguards, such as with deposit insurance, to provide financial system participants with proper incentives to help maintain a well-functioning financial system.

Deposit Insurance

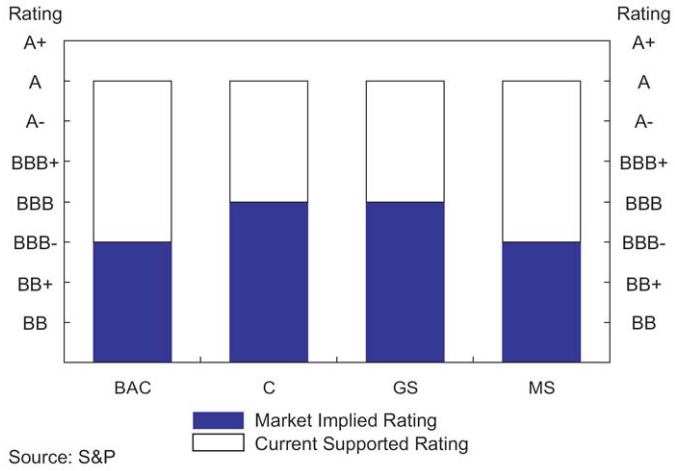
Congress created federal deposit insurance in 1933 in response to the thousands of bank failures that occurred in the 1920s and early 1930s. Deposit insurance promotes financial stability by maintaining public confidence in the banking system, ensuring that depositors continue to place their money in the system, and limiting the incentives for depositors to

Chart 5.4.17 BHC Systemic Uplift



Source: Moody's, FSOC calculations

Chart 5.4.18 S&P Current Actual & Market Implied Rating



Source: S&P

Chart 5.4.19 Current Long-Term Ratings and Uplift

	S&P Ratings		Moody's Ratings		
	HoldCo SR LT-Rating	Notches Uplift	HoldCo SR LT-Rating	LT-Rating Status	Notches Uplift
BAC	A	2	A2	On Review for Downgrade	4
C	A	2	A3	On Review for Downgrade	3
GS	A	1	A1	Stable	1
JPM	A+	0	Aa3	Stable	1
MS	A	2	A2	Stable	2
WFC	AA-	0	A1	On Review for Downgrade	2

Source: Moody's, S&P

quickly withdraw their money when banks become troubled. During the most recent crisis, depositors remained confident that their money was safe and insured deposits provided a stable source of funding for individual banks and the banking system as a whole.

Still, government-provided deposit insurance has the potential to lead to excessive risk-taking at banks. Insured depositors do not have an incentive to monitor the decisions management makes on behalf of the equity holders, who reap the gains on the upside but have limited liability on the downside. To address this moral hazard, banks are subject to prudential supervision, capital regulation, activity restrictions, and risk-based pricing of deposit insurance.

The enactment of the Dodd-Frank Act has led to a number of significant changes to FDIC deposit insurance and, to a lesser extent, NCUA share insurance. The Act permanently raised the deposit insurance limit from $100,000 to $250,000 and temporarily extended deposit insurance coverage to the full balance of non-interest-bearing transaction accounts through the end of 2012.

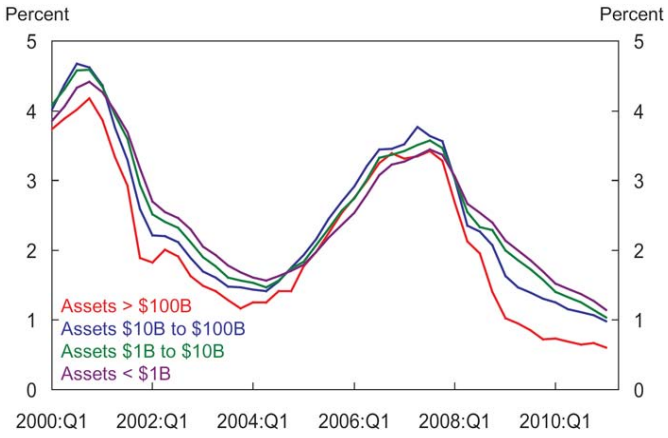
The Dodd-Frank Act made a number of other significant changes to FDIC deposit insurance. First, it changed the basis for calculating the assessment that insured depository institutions pay the FDIC from domestic deposits to a measure of total assets less shareholder equity. This change generally will shift the overall assessment burden away from community banks and toward the largest banks, which rely less on domestic deposits for their funding. This change will better align an institution's deposit insurance assessment with the impact that its failure would have on the FDIC's Deposit Insurance Fund (DIF). Second, the Dodd-Frank Act raised the minimum reserve ratio for the DIF balance from 1.15 percent to 1.35 percent of insured deposits and requires the FDIC to achieve the minimum reserve ratio by September 30, 2020. Third, the Act provided new flexibility to the FDIC in setting a long-run target reserve ratio for the DIF, which the FDIC has set at 2 percent. This should enable the FDIC to build

Chart 5.4.20 Current Short-Term Ratings

	S&P Ratings		Moody's Ratings	
	HoldCo SR ST-Rating	ST-Rating Status	HoldCo SR ST-Rating	ST-Rating Status
BAC	A-1	Stable	P-1	On Review for Downgrade
C	A-1	Stable	P-1	On Review for Downgrade
GS	A-1	Stable	P-1	Stable
JPM	A-1	Stable	P-1	Stable
MS	A-1	Stable	P-1	Stable
WFC	A-1+	Stable	P-1	Stable

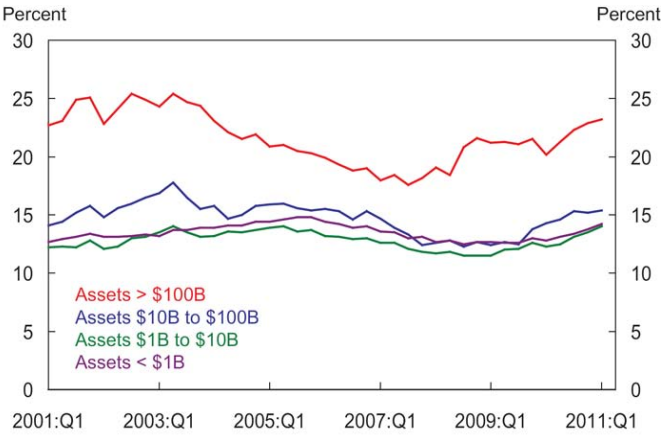
Source: Moody's, S&P

Chart 5.4.21 Interest Expense as a Percent of Total Liabilities



Source: FDIC Note: Data for FDIC-Insured banks and thrifts.

Chart 5.4.22 Noninterest-Bearing Liabilities to Total Liabilities



Source: FDIC Note: Data for FDIC-Insured banks and thrifts.

up a larger balance during better economic times, maintain a positive balance during periods of stress, and establish more stable assessment rates over the economic cycle.

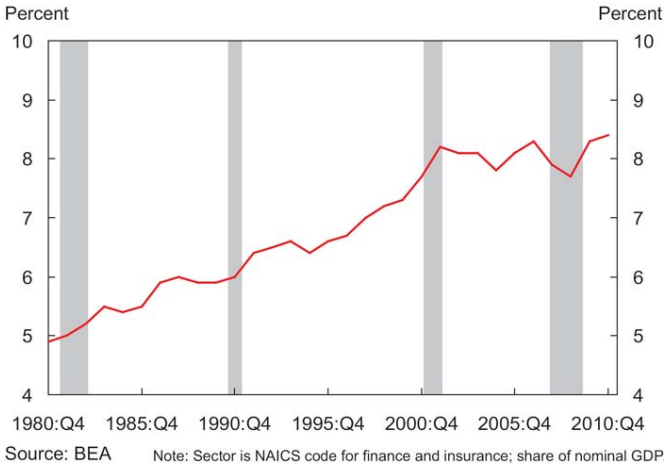
Large Complex Financial Institutions

Some large complex financial institutions can derive benefits from the perception that they are "too big to fail." Institutions that are perceived to be difficult to resolve in an orderly manner if they fail can undermine market discipline. The distortions induced by "too big to fail" may be evident in the creditworthiness assigned to these firms by credit rating agencies and more directly in their funding costs.

Credit rating agencies factor an explicit "uplift" into the ratings of certain financial institutions over their stand-alone credit ratings on the basis of perceived government support. The support embedded in firms' uplifted ratings increased dramatically in 2008 and persists. However, analysis based on credit default swap pricing for these large complex financial institutions suggests that markets are not factoring the ratings uplift into their evaluation of these companies' long-term debt ***(Charts 5.4.17***, ***5.4.18***, and ***5.4.19)***. The uplift does have a direct benefit for the short-term funding rating for these firms, which is currently the top tier A-1/P-1 rating ***(Chart 5.4.20)***. This rating allows these firms to access certain short-term wholesale funding markets that they would not be able to access with a lower rating.

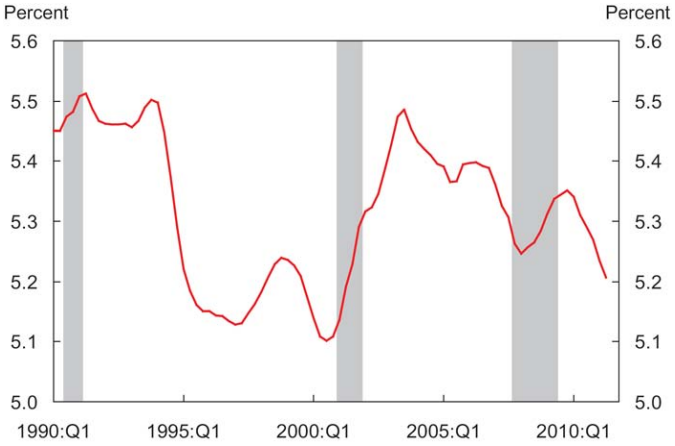
Large banks with over $100 billion in assets have greater access to market funding and a lower total funding cost than smaller institutions, as measured by the interest expense on total liabilities ***(Chart 5.4.21)***. The lower funding cost for larger banks is partly due to their greater ability to bundle a range of services to attract low-cost deposits; larger banks have also benefitted from the full guarantee on transaction accounts ***(Chart 5.4.22)***. Market-based factors also play a role. Larger institutions have access to market-based short-term sources of funding, such as through MMFs, which are currently providing funding at historically low rates.

Chart 5.4.23 Value Added Share of Financial Sector



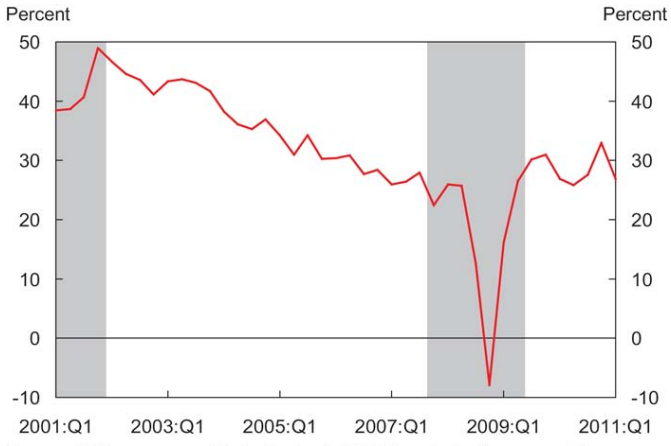
Source: BEA Note: Sector is NAICS code for finance and insurance; share of nominal GDP

Chart 5.4.24 Financial Sector Share of Nonfarm Payroll



Source: BLS Note: SA, Sector is NAICS code for finance and insurance.

Chart 5.4.25 Financial Sector Share of Corporate Profits



Source: BEA Note: Sector is NAICS code for finance and insurance.

Credit rating agencies have said they will review their U.S. bank support assumptions in the coming year on the basis of the enhanced resolution authority established under the Dodd-Frank Act ***(see Box I: Addressing Issues Related to Large Complex Financial Institutions*** and ***Section 6.1.2)***. As credit rating agencies consider the likelihood and potential impacts of a reduction in official support, they have placed certain firms' ratings on review for potential downgrade.

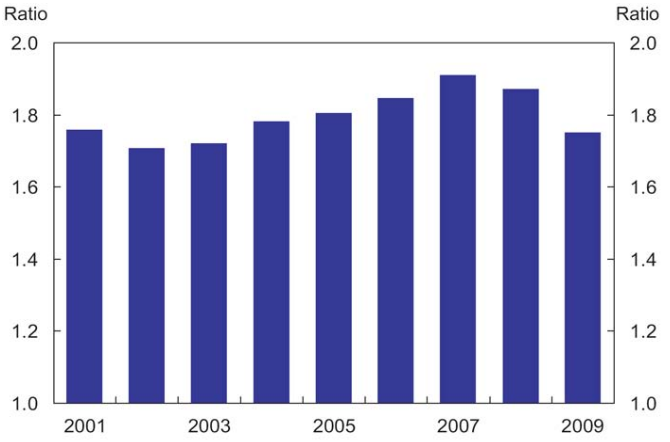
Compensation

As the financial system became more complex and globalized, the contribution of the financial sector to U.S. output increased by about 60 percent from 1980 to 2000 ***(Chart 5.4.23)***. This increased contribution was achieved with little change in the share of employment in the financial sector ***(Chart 5.4.24)***. Since 2000, its share of GDP has remained around 8 percent and its employment share just above 5 percent. With the exception of the recent recession, finance accounted for 25 percent to 50 percent of all corporate profits over the past decade ***(Chart 5.4.25)***.

Labor compensation in the financial sector is considerably higher than in many other industries and also tends to depend more heavily on complicated incentive structures. Average annual compensation in finance between 2001 and 2010 was 70 percent to 90 percent higher than in other industries ***(Chart 5.4.26)***. Specifically, average compensation in investment banking and securities dealing was 300 percent to 450 percent higher ***(Chart 5.4.27)***. The labor compensation share of value added in finance has fallen abruptly as many firms have made substantial changes to their compensation structures, partly to increase capital buffers through retained earnings ***(Chart 5.4.28)***.

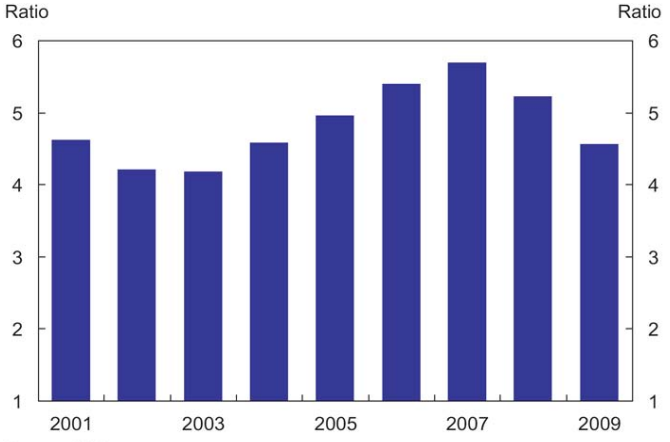
Compensation has grown dramatically for senior executives at the largest, most complex financial institutions. For example, in 1989, the chief executives at the seven largest BHCs earned an average of $2.8 million, or 97 times the median U.S. household income of $28,906 for that year. In 2007, the CEOs at the six largest BHCs earned an average of $26

Chart 5.4.26 Financial Sector Wages to All Wages



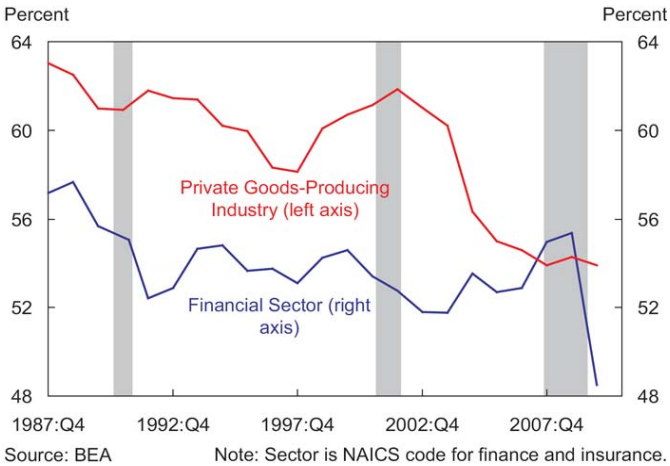
Source: BLS Note: Sector is NAICS code for finance and insurance.

5.4.27 Investment Banking Wages to All Wages



Source: BLS Note: Sector is NAICS code for investment banking and securities dealing.

5.4.28 Compensation Share of Industry Value Added



Source: BEA Note: Sector is NAICS code for finance and insurance.

million, or 516 times the median household income of $50,233 for that year. In 2007, these CEOs earned 2.3 times the average total compensation of the CEOs at the top 50 nonbank companies.

Because they affect the incentives of current and prospective employees, compensation programs are critical tools that can contribute to the success of financial institutions. If they are properly structured, they can help to attract and retain qualified staff and to align employee performance with organizational objectives. However, if they are not properly structured, compensation practices can lead to excessive risk taking by an institution's employees and have the potential to undermine the safety and soundness of the financial institution as well as that of the financial system itself. The G-20 leaders called for reform of compensation and endorsed the Principles for Sound Compensation Practices issued by the Financial Stability Board (FSB) in April 2009. Since then, many financial institutions have reexamined their compensation practices and are reevaluating possible links between incentive compensation and risk-taking behavior.

In June, 2010, the U.S. federal bank regulatory agencies issued supervisory guidance to ensure that incentive compensation arrangements at banking organizations take risk into account and are consistent with safe and sound practices. The guidance stated that incentive compensation programs should provide employees incentives that appropriately balance risk and financial results; they should be compatible with effective controls and risk-management; and they should be supported by strong corporate governance.

Subsequently, on March 30, 2011, as required by the Dodd-Frank Act, a broader set of financial regulatory agencies issued a proposed rule on incentive compensation that will apply to investment advisers, broker-dealers, and other entities, as well as banking organizations. The proposed rule, which is discussed more fully in Section 6.3.5, would apply to certain financial institutions with more than $1 billion in assets and would prohibit compensation arrangements that could encourage inappropriate risks.

Box I: Addressing Issues Related to Large Complex Financial Institutions

Large complex financial institutions (LCFIs) can be an efficient means of providing financial services to the economy. However, in the absence of an appropriate regulatory structure and robust risk management practices, the benefits of LCFIs can be outweighed by the risk they pose to the stability of the financial system, especially in times of severe market stress. The Dodd-Frank Act puts in place a number of measures to mitigate this risk.

In the years preceding the crisis, the structure of many commercial banks, investment banks, and insurers had become increasingly complex, with numerous subsidiaries that spanned the globe ***(Chart I.1)***.

Chart I.1 Complex Financial Institutions in 2007

Institution	Total Subsidiaries	% Foreign Subsidiaries	Countries of Operation
Citigroup	2,435	50%	84
Bank of America	1,407	28%	29
Morgan Stanley	1,052	47%	46
JPMorgan	804	51%	36
Lehman Brothers*	433	45%	20
Goldman Sachs	371	51%	21
Merrill Lynch*	267	64%	25

Source: Bankscope, 2007. Note: *Parent company inactive.

The LCFIs at the center of the 2008 crisis could not be wound down in an orderly manner when they became nonviable. Major segments of these companies' operations were subject to the U.S. Bankruptcy Code, as opposed to bank receivership or other specialized insolvency laws, or they were located abroad and therefore outside U.S. jurisdiction for insolvency purposes. In the midst of the crisis, policymakers in several instances provided government assistance instead of letting these companies file for bankruptcy. They were concerned that creditor losses and other uncertainty associated with the bankruptcy process would cascade through the global financial system. These concerns were realized when the prime brokerage assets of Lehman Brothers in the U.K. were frozen following that firm's bankruptcy.

Among the goals of the Dodd-Frank Act are to work toward ensuring that the risks posed by LCFIs are prudently managed and subject to adequate oversight, and eliminating the "too big to fail" risk and the necessity for government assistance to nonviable financial companies. The law, including provisions in Title I and Title II, uses the following tools to accomplish these goals.

Designation of Nonbank Financial Companies

The Council is authorized to designate nonbank financial companies as subject to enhanced prudential standards and supervision by the Federal Reserve. The Council must consider various factors in determining whether to make this designation, including leverage; off-balance-sheet exposures; and the nature, scope, size, scale, concentration, interconnectedness, and mix of activities of the company.

Enhanced Prudential Standards and Supervision

Major financial companies—bank holding companies with assets over $50 billion and designated nonbank financial companies—will be subject to enhanced prudential standards and supervision by the Federal Reserve to ensure that they have sufficient buffers to withstand severe financial stress. Strengthened capital and liquidity requirements will be core elements of these enhanced standards.

The Dodd-Frank Act also requires regulators to establish remedial actions to be taken when a financial company that is subject to enhanced prudential standards is experiencing increased financial distress. These remedial actions are intended to minimize the probability that such a company will become insolvent and harm the stability of financial markets.

Concentration Limits

The Dodd-Frank Act establishes a financial sector concentration limit. This limit generally prohibits a financial company from merging or acquiring another company if the total consolidated liabilities of the combined entity would exceed 10 percent of the aggregate consolidated liabilities of all financial companies. This limit should help avoid a financial system that is over-reliant on any particular firm, as well as acquisition-driven growth that is not accompanied by appropriate risk management systems and processes.

Detailed Resolution Plans

Financial companies subject to enhanced prudential standards are required to maintain detailed resolution plans that would facilitate a resolution under the Bankruptcy Code. The Dodd-Frank Act also requires, if necessary, changes in the structure or activities of these companies to ensure that they meet the standard of being resolvable in a crisis.

Orderly Liquidation Authority

Enhanced prudential standards and supervision by the Federal Reserve will help mitigate the risks posed by LCFIs. However, if such an institution fails, the orderly liquidation authority—under which company shareholders and unsecured creditors bear the losses of failure—provides the government with the tools and authority to resolve a failed institution in a manner that limits broader systemic impact and taxpayer cost during times of severe market stress. This new framework should help strengthen market discipline and discourage the subsidization of excessive risk taking that occurred before the crisis.

These provisions, together with other elements of regulatory reform, such as regulation of the over-the-counter derivatives market and the implementation of international Basel III capital standards, are aimed at achieving a more resilient financial system that is better able to withstand the level of stress that occurred during the financial crisis.

6 Progress in the Implementation of the Dodd-Frank Act; Council Activities

The regulatory implementation of the Dodd-Frank Act has included introducing stronger supervision, risk management, and disclosure standards; establishing orderly resolution plans and an orderly liquidation regime to prevent firms from being perceived as too big to fail; regulating the derivatives markets to reduce risk and increase transparency; reforming the securitization markets; enhancing standards for hedge fund advisers; creating the new Federal Insurance Office (FIO); strengthening the oversight program for credit rating agencies; establishing the Office of Financial Research (OFR); consolidating federal banking regulators; and implementing measures to enhance consumer and investor protection.

In addition, in its first year, the Council laid the groundwork for determining which nonbank financial companies will be supervised by the Federal Reserve and subject to heightened prudential standards, and for designating systemically important financial market utilities that will be subject to risk management standards. The Council also initiated monitoring of potential risks to U.S. financial stability; fulfilled explicit statutory requirements, including the completion of several studies; served as a forum for discussion and coordination among the member agencies implementing the Dodd-Frank Act; and built its basic organizational framework.

The following is a discussion of the significant implementation progress the Council and its member agencies have achieved since enactment of the Dodd-Frank Act.

6.1 Safety and Soundness

6.1.1 Capital Adequacy Rules

In June 2011, the federal banking agencies adopted a rule to implement portions of Section 171 of the Dodd-Frank Act, which is generally referred to as the Collins Amendment. Section 171 addresses several issues regarding financial institutions' capital adequacy.

One issue was to eliminate the possibility that adoption by the largest institutions of advanced Basel II approaches to calculating regulatory capital could result in those institutions holding less capital than that required of smaller banks. Such a result would be inconsistent with the intent of the Dodd-Frank Act, which is that the largest institutions should be subject to heightened capital standards. Accordingly, Section 171 provides that the capital requirements that generally apply to insured banks will serve as a floor for any capital requirements the agencies may establish for banks, depository institution holding companies, and nonbank financial companies supervised by the Federal Reserve.

Section 171 also seeks to ensure that the instruments issued by depository institution holding companies eligible for inclusion in regulatory capital are equivalent or superior to those issued by insured banks. In general, starting January 1, 2013, for certain depository institution holding companies, any regulatory capital deductions required by Section 171 will be phased in incrementally over three years.

6.1.2 Resolution Plans and Orderly Liquidation Authority

Resolution Plans

To improve the resolvability of large financial firms and increase stability during times of market stress, Section 165(d) of the Dodd-Frank Act requires nonbank financial companies designated for enhanced supervision by the Federal Reserve and bank holding companies (BHCs) with $50 billion or more in total consolidated assets to prepare and maintain plans for their rapid and orderly resolution under the U.S. Bankruptcy Code; these plans are sometimes referred to as "living wills" ***(see Box I: Addressing Issues Related to Large Complex Financial Institutions)***. These resolution plans are not binding on bankruptcy courts or receivers. The Federal Reserve and the FDIC must review each plan. If they determine that a plan is not credible or would not facilitate an orderly resolution under the U.S. Bankruptcy Code, they may compel the firm to resubmit a conforming plan. If a conforming plan is not forthcoming, the two agencies can take further action, including imposing more stringent capital and liquidity requirements or, in consultation with the Council, ordering a divestiture.

Resolution plans are required to include information such as the following:

- the manner and extent to which any insured depository institution affiliated with the company is adequately protected from risks arising from the activities of any nonbank subsidiaries of the company;
- descriptions of the company's ownership structure, assets, liabilities, and contractual obligations; and
- identification of the cross-guarantees tied to different securities, identification of major counterparties, and a process for determining to whom the collateral of the company is pledged.

In April 2011, the FDIC and the Federal Reserve released for public comment a joint proposed rule that would implement the requirement to prepare and maintain resolution plans.

Orderly Liquidation Authority

The financial crisis demonstrated that for certain BHCs or other financial companies near failure during a time of severe market stress, there may be only two options in the absence of a credible orderly liquidation authority: emergency public funding or bankruptcy. Neither of these options can accomplish the efficient and effective resolution of such a firm in a way that both limits the systemic impact and imposes costs on private investors rather than taxpayers. Title II of the Dodd-Frank Act created an orderly liquidation authority (OLA) that authorizes the government to address the potential failure of a BHC or other financial company when the stability of the financial system is at risk. The OLA is modeled on the resolution provisions of the Federal Deposit Insurance Act. After being appointed receiver under the processes described below, the FDIC is authorized to transfer to a third party assets or liabilities of a company subject to the OLA.[1] The FDIC may also establish a temporary bridge financial company to hold any part of the company's business with going-concern value until it can be sold to a third party at fair value or otherwise liquidated in an orderly fashion.

To help ensure that taxpayers do not cover the costs of liquidation, all funds expended by the FDIC must be recovered through the disposition of the failed company's assets, assessments on the creditors that stand to benefit from the process because of additional payments made to such creditors in certain limited circumstances, or assessments on large financial firms. In addition, under certain circumstances, senior executives and directors of a company subject to the OLA may be prohibited from participating in the conduct of the affairs of any financial company and be subject to recoupment by the FDIC of compensation received in the two years before the failure.

On the recommendation of two-thirds of the Board of Governors of the Federal Reserve and two-thirds of the board of the FDIC (or, depending on the nature of the financial company, two-thirds of

1 In the case of a failing insurance company, the company is resolved under the relevant state's liquidation or rehabilitation process rather than under the FDIC's receivership process. Special procedures also apply to the resolution of failing financial companies that are broker-dealers.

the Board of Governors of the Federal Reserve and either two-thirds of the members of the SEC or the approval of the Director of the FIO, in consultation with the FDIC) and in consultation with the President, the Dodd-Frank Act authorizes the Treasury Secretary to appoint the FDIC as receiver of certain financial companies if the Treasury Secretary makes certain findings. The required findings include a determination that the failure of the financial company and its resolution under otherwise applicable insolvency law would have serious adverse effects on financial stability in the United States; that no viable private sector alternative is available to prevent the default of the financial company; and that the use of the OLA would avoid or mitigate the adverse effects that would result from resolving the financial company under otherwise applicable insolvency law.

The OLA is a remedy of last resort, to be used only if the other tools provided by the Dodd-Frank Act—including the increased informational and supervisory powers—are unable to stave off a failure that could threaten financial stability. In particular, it is expected that the mere knowledge of the consequences of resolution under the OLA, including the understanding that financial assistance is no longer an option, would encourage a troubled financial company to find an acquirer or a strategic partner on its own well in advance of failure.

Title II of the Dodd-Frank Act authorizes the FDIC, in consultation with the Council, to adopt rules to implement the OLA process. The FDIC adopted a final rule to implement the OLA after notice and comment. As discussed more fully below, these rules seek to clarify procedural and substantive matters under the OLA. The FDIC intends to propose additional rules to implement the OLA, including rules governing receivership termination, receivership purchaser eligibility requirements, and record-retention requirements. The FDIC and SEC, after consultation with the Securities Investor Protection Corporation, will jointly propose rules governing the orderly resolution of certain broker-dealers.

The first OLA rule the FDIC adopted was an interim final rule that addressed OLA procedures, including payment of similarly situated creditors (which includes the treatment of holders of long-term senior debt); honoring personal services contracts; recognition of contingent claims; treatment of any remaining shareholder value in the case of a financial company subject to FDIC receivership (a covered financial company) that is a subsidiary of an insurance company; and limitations on liens that the FDIC may take on the assets of a covered financial company that is (1) an insurance company or (2) a covered subsidiary of an insurance company (other than an insured depository institution, an insurance company, or certain broker-dealers).

In March 2011, the FDIC issued a proposed rule for public comment. This rule provides clarity regarding the implementation of the OLA and helps ensure that the OLA process reflects the Dodd-Frank Act's mandate of transparency in the liquidation of covered financial companies. Among the significant issues addressed in this rule are the priority for the payment of claims, the process for the determination of claims by the receiver, and the process for seeking a judicial review of any claims disallowed in whole or in part.

The FDIC issued a final rule in July 2011 that amends and makes final the interim final rule and the proposed rule issued in March 2011. The final rule establishes a more comprehensive framework for the implementation of the OLA and provides greater transparency to the process for the orderly liquidation of covered financial companies under the Dodd-Frank Act. The rule also includes specific provisions setting forth the priority of payments to creditors, and the administrative claims process and the processes for resolving contingent and secured claims.

Secured Creditor Haircut Study

The Dodd-Frank Act requires the Council to study, and issue a report regarding, the importance of maximizing U.S. taxpayer protections and promoting market discipline with respect to the treatment of fully secured creditors in the use of the OLA. The Council approved the report for submission to Congress on July 18, 2011. The report is discussed further in Section 6.4.

6.2 Financial Infrastructure, Markets, and Oversight

6.2.1 Over-the-Counter Derivatives Reform

A lack of transparency in pricing or market exposures of derivatives and a lack of regulatory oversight created risks that contributed to the vulnerabilities of the financial system's largest institutions. Title VII of the Dodd-Frank Act establishes a comprehensive regulatory framework for the over-the-counter (OTC) derivatives marketplace. The regulatory structure for derivatives set forth in the Dodd-Frank Act is intended to promote exchange trading and centralized clearing of swaps and security-based swaps, helping increase regulatory and public transparency, reduce counterparty risk, and enhance the resiliency of the swaps markets. The reforms under Title VII should also enhance investor protection by increasing disclosure, helping mitigate conflicts of interest involving swaps and security-based swaps, and establishing comparable standards for initial and variation margin posted to swap dealers in connection with noncleared swaps.

The CFTC and SEC have proposed numerous rules pursuant to the standard public notice and comment process, and have engaged in extensive public outreach and interagency coordination, including the following:

- public roundtables with agency staff, market participants, and other concerned members of the public;
- meetings involving staff from multiple regulators, both domestic and international; and
- agency staff meetings with members of the public.

To facilitate the establishment of OTC derivatives markets that are more transparent, efficient, accessible, fair, and competitive than the previous, unregulated markets, the SEC and CFTC have proposed (or will propose) rules that govern the following:

- the operation of swap and security-based swap trading platforms (exchanges and swap and security-based swap execution facilities);
- conflicts of interest relating to, and the operation of, clearinghouses;
- reporting requirements to swap and security-based swap data repositories for swap and security-based swap dealers, major swap and security-based swap market participants, and swap and security-based swap counterparties; and
- business conduct standards and other regulatory requirements for swaps and security-based swap dealers and major swap and security-based swap market participants.

The SEC and CFTC have also jointly proposed rules further defining the terms "swap," "security-based swap," "security-based swap agreement," "swap dealer," "security-based swap dealer," "major swap participant," and "major security-based swap participant," as well as rules regarding "mixed swaps" and books and records for "security-based swap agreements."

In addition, the CFTC and the federal banking agencies issued proposed rules on capital and margin requirements for swap and security-based swap dealers and major swap and security-based swap market participants. The proposed rules would impose initial margin and variation margin requirements for uncleared swaps held by entities under each agency's jurisdiction. With respect to capital requirements, the federal banking agencies' existing regulatory capital rules take into account and address the unique risks arising from derivatives transactions and would apply to transactions in swaps and security-based swaps. The CFTC has proposed capital requirements for entities under its jurisdiction.

The FDIC, the OCC, and the Federal Reserve have proposed rules to permit entities under their respective jurisdictions to engage in certain retail off-exchange foreign currency transactions, including foreign currency futures, options on futures, and options and functionally or economically similar transactions such as "rolling spot" trades that are similar to futures contracts. The proposed rules establish requirements in six areas: disclosure, recordkeeping, capital and margin, reporting, business conduct, and documentation. Traditional spot and forward contracts are not covered under the rules.

The SEC and the CFTC are considering the structural and systems changes market participants will have to make to satisfy the new derivatives regulatory framework. The agencies are also considering a phased-in approach to implementing the new rules. This approach is intended to mitigate operational risk associated with structural and systems changes, and to provide an opportunity for market participants to raise any concerns they have as they design and implement the required systems.

6.2.2 Financial Market Utilities

Financial market utilities (FMUs) manage or operate multilateral systems for the purpose of transferring, clearing, or settling financial transactions. FMUs are critical components of the U.S. financial system and the broader economy. Financial institutions, corporations, governments, and individuals rely on FMUs directly or indirectly to discharge a variety of financial and economic transactions. The market infrastructure supporting the millions of financial transactions that occur every day encompasses everything from smaller-value retail payment systems, such as credit and debit card networks, to large-value payment, clearing, and settlement systems for financial market transactions, such as central counterparties, securities, foreign exchange settlement systems, and funds transfer systems.

Title VIII of the Dodd-Frank Act establishes a new supervisory framework for systemically important FMUs. It authorizes the Council to designate an FMU as systemically important if the failure of or a disruption to the FMU's operations could create or increase the risk of significant liquidity or credit problems spreading among financial institutions or markets and thereby threaten the stability of the U.S. financial system. As discussed further in Section 6.4, the Council approved a final rule outlining the criteria, processes, and procedures for the designation of FMUs at its July 18, 2011 meeting.

The Federal Reserve, CFTC, and SEC, in consultation with each other and with the Council, have published proposed rules regarding risk management standards for designated FMUs subject to their respective supervisory authority. Final rules on risk management standards for designated FMUs are expected in 2011.

Section 813 of Title VIII requires the CFTC and SEC to coordinate with the Federal Reserve to jointly develop risk management supervision programs for designated clearing entities (DCEs)—FMUs that are either registered derivatives clearing organizations or registered clearing agencies. The agencies transmitted a joint report to Congress on July 21, 2011 containing recommendations for improving consistency of the DCE oversight programs of the CFTC and SEC; promoting robust risk management by DCEs and oversight by their regulators; and improving regulators' ability to monitor the potential effects of DCEs' risk management on financial stability.

6.2.3 Securitization

Risk Retention

Properly structured securitization provides economic benefits that lower the cost of credit to households and businesses. However, when incentives are not properly aligned and the origination process lacks discipline, securitization can result in harm to investors, consumers, financial institutions, and the financial system. During the financial crisis, securitization displayed significant vulnerabilities to informational and incentive problems among various parties involved in the process. To address this weakness and promote prudent lending, Section 941 of the Dodd-Frank Act requires federal agencies jointly to adopt so-called "skin in the game" rules that require a securitizer to retain credit risk for loans that the securitizer, through the issuance of an asset-backed security (ABS), transfers, sells, or conveys to a third party. In March 2011, the OCC, Federal Reserve, FDIC, SEC, FHFA, and the Department of Housing and Urban Development jointly proposed rules to implement this risk retention requirement. The Chairperson of the Council coordinated the rulemaking effort.

The proposed rules would require securitizers of ABS to retain at least 5 percent of the credit risk of the assets underlying the securities. Securitizers would not be permitted to transfer or hedge that credit risk. The proposed rule provides exemptions for qualified residential mortgages and ABS collateralized exclusively by commercial loans, commercial mortgages, or automobile loans that meet certain underwriting standards. The definition of "qualified residential mortgages,"

which represent a portion but not all of the market for mortgage loans, is an important aspect of the proposed rule: it would take into account, among other things, the borrower's ability to repay and credit history, the loan-to-value ratio of the loan, the form of valuation used in underwriting the loan, the type of mortgage, and owner-occupancy status. In crafting the proposed rule, the agencies sought to ensure that the amount of credit risk retained is meaningful while reducing the potential for negative effects on the availability and cost of credit to consumers and businesses.

Issuer Review and Representation, Warranty Disclosure, Conflicts

Other provisions of the Dodd-Frank Act require SEC rulemaking for ABS. Pursuant to Section 943 of the Dodd-Frank Act, the SEC adopted final rules in January 2011. These rules require securitizers to disclose the history of repurchase requests received for assets that are believed to have violated representations and warranties, and repurchases made relating to their outstanding ABS. Pursuant to Section 945, the SEC adopted final rules in January 2011 requiring an asset-backed issuer in a transaction registered under the Securities Act of 1933 to perform a review of the assets underlying the ABS and disclose the nature of such review. At a minimum, the review must be designed and effected to provide reasonable assurance that the prospectus disclosure on the assets is accurate in all material respects.

6.2.4 Hedge Fund Adviser Registration and Oversight

Title IV of the Dodd-Frank Act closes a regulatory gap by making numerous changes to the registration, reporting, and recordkeeping requirements of the Investment Advisers Act of 1940 (Advisers Act). These provisions are intended to provide the SEC with oversight authority over previously unregistered investment advisers to hedge funds and private equity funds, and the authority to require recordkeeping and reporting by advisers to venture capital funds.

In June 2011, the SEC adopted a rule that would facilitate the registration of advisers to hedge funds and private equity funds with the SEC. To enhance the SEC's ability to oversee these advisers, the SEC will require them to provide additional information about the private funds they manage, including information about the amount of assets held by the fund and identification of fund service providers, including auditors, prime brokers, custodians, administrators, and marketers. In addition, the SEC will require all advisers to provide further information about an adviser's clients, employees, and advisory activities.

The SEC also adopted rules relating to several new exemptions from the investment adviser registration requirements for advisers that exclusively advise venture capital funds; advisers solely to private funds with less than $150 million in assets under management in the United States; and foreign private advisers with less than $25 million in assets under management in the United States. Although advisers are relieved from SEC registration, they may be subject to a registration requirement with the appropriate state securities regulator.

Section 404 of the Dodd-Frank Act also authorizes the SEC to collect data from investment advisers about their private funds to enable the Council to assess systemic risk. In January 2011, the SEC proposed a rule under this authority that would require registered investment advisers to a private fund to report certain systemic risk information to the SEC. Private fund advisers that are also registered with the CFTC as commodity pool operators or commodity trading advisers would satisfy systemic risk reporting requirements of the CFTC by filing with the SEC.

6.2.5 Insurance

Establishment of the FIO

The financial crisis highlighted the lack of expertise within the federal government regarding the insurance industry. In response, the Dodd-Frank Act established the FIO to provide expertise regarding the insurance business, marketplace and regulatory environment. The following are among the FIO's authorities:

- to monitor all aspects of the insurance industry, including identifying issues or gaps in the regulation of insurers that could contribute to a systemic crisis in the insurance industry or the U.S. financial system;

- to monitor the extent to which traditionally underserved communities and consumers, minorities, and low- and moderate-income persons have access to affordable insurance, except health insurance;
- to recommend that the Council designate an insurer as a nonbank financial company that should be subject to supervision by the Federal Reserve;
- to coordinate federal efforts and develop federal policy on prudential aspects of international insurance matters; and
- to recommend and approve the resolution of certain troubled insurance companies under the OLA.

The FIO is led by a Director who serves in an advisory capacity as a nonvoting member of the Council. The states remain the primary functional regulators, and the FIO will consult with the states regarding insurance matters of national and international importance.

6.2.6 Credit Ratings

Following the onset of the financial crisis, it became apparent that credit rating agencies had systematically underestimated the risks of many RMBS, CDOs, and other structured finance instruments. Faulty assumptions underlying rating methodologies and the subsequent reevaluations by credit rating agencies led to a significant number of downgrades of these securities. The number and severity of these negative ratings actions caused investors to lose confidence in the accuracy of the ratings of a wide range of securitized products, thereby contributing to the market turmoil and revealing the extent to which investors and others had become overly reliant on credit ratings. The Dodd-Frank Act includes two sections that remove references to credit ratings in certain statutes and direct federal agencies to remove any references to or requirements of reliance on credit ratings from regulations.

Subtitle C of Title IX of the Dodd-Frank Act strengthened the SEC's oversight authority regarding, and mandated a number of rulemakings in connection with the SEC's oversight and regulation of, credit rating agencies registered as nationally recognized statistical rating organizations. The SEC issued proposed rules under this authority in May 2011. In addition, Section 939 of the Dodd-Frank Act removed references to credit ratings in certain statutes, while Section 939A requires each federal agency to review any rules that require the use of an assessment of creditworthiness of a security or money market instrument and any references to or requirements in such rules regarding credit ratings. Each agency must modify those rules to remove references to or requirements of reliance on credit ratings and to substitute appropriate standards of creditworthiness. Numerous federal agencies have proposed or finalized rules that would modify their regulations and forms to comply with these requirements. Among others, the federal banking regulators sought initial public comment on proposed removals of references to rating agencies from the risk-based capital rules; the SEC proposed rules that would remove rating agency references from many of its investment company rules and forms, its registration statement forms, and its rules and forms applicable to broker-dealer financial responsibility, distributions of securities, and confirmations of transactions; the FDIC issued a final rule removing credit ratings from the calculation of deposit insurance risk-based assessments for large insured depository institutions; and the NCUA issued a proposed rule for public comment.

6.2.7 OFR

The Dodd-Frank Act also created the OFR in Treasury to, among other things, improve the quality of financial data and provide analytical support to the Council and its member agencies. The Director of the OFR must be appointed by the President and confirmed by the U.S. Senate. Treasury staff and personnel from other Council member agencies have worked to set up a framework for the OFR's functions. The OFR has made significant progress in meeting its statutory mandates. It is working closely with Council member agencies to improve the research and data capabilities of the regulatory community. The OFR has also issued a policy statement regarding the establishment of a universal "legal entity identifier" that would allow the Council to aggregate measures of risk across the system; made progress in establishing a research network that includes academics from several universities; and initiated the planning process for creating a data

center to set standards for financial reporting and to improve the quality of data that the Council and market participants rely on to manage risk.

6.2.8 Consolidation of Federal Banking Regulators

The Dodd-Frank Act provides for the termination of the Office of Thrift Supervision (OTS), which had been the primary regulator of savings and loan holding companies and state and federally chartered savings associations, and for the transfer of its responsibilities to the Federal Reserve, the FDIC, and the OCC. This transfer occurred on July 21, 2011. As of that date, in accordance with plans prepared by these agencies, the Federal Reserve assumed responsibility for regulating savings and loan holding companies; the FDIC for regulating state savings associations; and the OCC for regulating federal savings associations. The Director of the CFPB will assume the seat of the Director of the OTS on the board of the FDIC.

6.3 Consumer and Investor Protection

6.3.1 Consumer Protection

On July 21, 2011, most rulemaking and certain other authorities relating to consumer financial products and services transferred to the CFPB from seven federal agencies. The CFPB launched bank supervision, consumer response, and other functions on that date, and has issued a variety of required rules and reports under the Dodd-Frank Act. The CFPB is now the primary federal regulator focused on, and held accountable to Congress and the public for, consumer financial protection. The CFPB will work to ensure that consumers have the information they need to understand the costs and risks of financial products and services, so that they can compare products and choose the ones that are best for them. The CFPB also will clarify and streamline regulations and guidance to reduce unnecessary burdens on providers of consumer financial products and services.

Among its other duties, the CFPB will:

- conduct rulemakings with respect to federal consumer financial laws, including prohibitions on discrimination and unfair, deceptive, or abusive acts or practices, and supervise and enforce these laws for many financial service providers;
- take consumer complaints;
- promote financial education; and
- monitor financial markets for new risks to consumers.

The Dodd-Frank Act gives the Treasury Secretary responsibility for setting up the CFPB until the CFPB Director is in place. On September 17, 2010, President Obama appointed Professor Elizabeth Warren to serve as assistant to the President, and Secretary Geithner appointed her as special advisor to the Treasury Secretary on the CFPB. Professor Warren has led the effort to build the framework for the CFPB and, in consultation with other senior Treasury officials, helped to appoint a leadership team to assist with implementation. On July 18, 2011, President Obama nominated former Ohio Attorney General Richard Cordray as Director of the CFPB.

One of the CFPB's highest priorities is consolidation of mortgage loan disclosure forms under the Truth in Lending Act and the Real Estate Settlement Procedures Act, both to make the information more useful to consumers and to reduce burdens on lenders. Existing federal regulators first began discussing consolidation of these forms a number of years ago. The Dodd-Frank Act consolidates rulemaking authority under the two statutes in the CFPB and mandates that the CFPB propose model forms by July 2012. The CFPB began testing prototype disclosure forms this spring through qualitative interviews with consumers, lenders, and brokers. The CFPB continues to gather input from industry, consumers, and other stakeholders via its website.

Also in the context of mortgages, significant progress has been made on a rule mandated by the Dodd-Frank Act requiring lenders to assess and verify consumers' ability to repay mortgage loans as part of the underwriting process. The Federal Reserve proposed a rule in April 2011 for public comment. The CFPB will be responsible for finalizing a rule after considering the public comments on the proposal.

6.3.2 Debit Interchange

Debit card interchange fees, which are established by a payment card network and ultimately paid by merchants to card issuers, became subject to regulation by the Federal Reserve under Section 1075 of the Dodd-Frank Act, referred to as the Durbin Amendment. The Durbin Amendment, among other things, requires the Federal Reserve to adopt a rule that sets standards for assessing whether the amount of an interchange fee for an electronic debit (but not credit) transaction is reasonable and proportional to the cost incurred by the issuer with respect to the transaction. The fee standards do not apply to an issuer that, together with its affiliates, has less than $10 billion in assets, or to transactions initiated using debit cards issued pursuant to government-administered payment programs and certain reloadable prepaid cards.

After requesting comment on a proposed rule in December 2010, the Federal Reserve received comments from more than 11,500 commenters. On June 29, 2011, the Federal Reserve approved a final rule providing that the amount of an interchange fee that a covered issuer may receive may not exceed the sum of 21 cents plus 5 basis points of the transaction's value. The final rule also prohibits circumvention or evasion of the interchange fee standard, as well as an issuer receiving net compensation from a payment card network. The final rule exempts the statutorily exempt issuers and transactions from the interchange fee standard but does not mandate two-tier interchange fee structures.

The Federal Reserve also approved an interim final rule allowing an upward adjustment of no more than 1 cent to the permissible interchange fee. This adjustment makes allowance for an issuer's debit card fraud-prevention costs, provided the issuer satisfies the fraud-prevention standards set forth in the interim final rule. Comments on the interim rule are due by September 30, 2011; the Federal Reserve has stated that it will re-evaluate this adjustment, as appropriate, in light of the comments received.

In addition, the final rule implements the payment card network exclusivity and routing provisions of the Durbin Amendment by requiring each debit card be enabled on no fewer than two unaffiliated payment card networks and prohibiting an issuer or network from inhibiting the ability of any person that accepts debit cards as a form of payment from directing the routing of debit card transactions for processing. The statutory exemptions from the interchange fee standards do not extend to the network exclusivity and routing provisions in the final rule.

The interchange fee standards, fraud-prevention adjustment, and the routing restrictions are effective on October 1, 2011. The network exclusivity provisions are effective on April 1, 2012, with respect to issuers, and October 1, 2011, with respect to payment card networks. Issuers of certain health-related and other benefits cards and general-use prepaid cards have a delayed effective date of April 1, 2013, or later in certain circumstances.

6.3.3 Mortgage Transactions

Title XIV of the Dodd-Frank Act, the "Mortgage Reform and Anti-Predatory Lending Act," contains several measures designed to protect consumers in mortgage transactions. Many of these measures were enacted as amendments to the Truth in Lending Act (TILA). Prior to the designated transfer date, July 21, 2011, the Federal Reserve was responsible for regulations implementing TILA, but, in general, rulemaking authority under TILA transferred to the CFPB on that date.

In October 2010, the Federal Reserve issued an interim final rule to implement the appraisal independence provisions in Section 1472 of the Dodd-Frank Act. The interim rule seeks to ensure that appraisers are free to use their independent professional judgment. To protect the quality of appraisals, the rule also requires independent appraisers to receive customary and reasonable compensation for their services. Compliance with the rule became mandatory on April 1, 2011. Several regulatory agencies are jointly responsible for issuing permanent rules on appraisal independence.

In February 2011, the Federal Reserve issued a final rule pursuant to Section 1461 of the Dodd-Frank Act to revise the escrow requirement for jumbo mortgage loans. As amended, the escrow requirement will

apply to first-lien jumbo loans only if the loan's annual percentage rate is 2.5 percentage points or more above the average prime offer rate. Also in February 2011, the Federal Reserve issued a proposed rule to implement additional escrow account requirements for higher-priced loans pursuant to Sections 1461 and 1462 of the Dodd-Frank Act. The proposed rule would expand the minimum period for mandatory escrow accounts, while providing an exemption for certain creditors that operate in "rural or underserved" counties. The proposed rule also would implement new disclosure requirements.

In April 2011, the Federal Reserve issued a proposed a rule to implement the provisions of Title XIV relating to the requirement for a creditor to determine a consumer's ability to repay a mortgage loan before extending the loan. The proposed rule would provide four options for complying with the ability-to-repay requirement. A creditor could meet the standard by: (1) considering and verifying specified underwriting factors, such as the consumer's income, assets, and obligations; (2) making a "qualified mortgage," which is subject to certain limitations on loan terms and features; (3) making a balloon-payment qualified mortgage, for certain creditors operating predominantly in rural or underserved areas; or (4) refinancing a "non-standard mortgage" with risky features into a more stable "standard mortgage" with a lower monthly payment.

6.3.4 Investor Protection

The Dodd-Frank Act includes various provisions to strengthen investor protection, such as those promulgated under the regulatory actions discussed above and below. These provisions include regulation of the over-the-counter derivatives markets and governance and compensation reform.

A key investor protection provision requires the SEC to complete a study of any gaps, shortcomings, or overlaps in the standard of conduct and supervision of broker-dealers and investment advisers that provide personalized investment advice about securities to retail customers. The SEC staff completed this study in January 2011. The study recommends that the SEC establish a uniform fiduciary standard for broker-dealers and investment advisers when providing personalized investment advice about securities to retail customers that is no less stringent than the standard currently applied under Sections 206(1) and (2) of the Advisers Act. In addition, the staff recommended that broker-dealers and investment advisers be subject to the same or substantively similar regulatory requirements when providing services to retail investors.

The SEC also completed a study of the need for enhanced examination and enforcement resources for investment advisers, and in particular, the extent to which having Congress authorize the SEC to designate a self-regulatory organization (SRO) to augment the SEC's efforts in overseeing investment advisers would improve the frequency of examinations of investment advisers. This study recommended presenting Congress with three options:

1. Authorize the SEC to impose user fees on investment advisers to fund their examinations.
2. Authorize an SRO to examine investment advisers.
3. Authorize the Financial Industry Regulatory Authority to examine dual-registrants for compliance with the Advisers Act.

The SEC finalized rules in June 2011 that will implement provisions in Section 410 of the Dodd-Frank Act. The rules will realign the regulatory responsibilities of investment advisers between the state securities regulators and the SEC. These provisions increased the number of investment advisers that will be primarily regulated by the states. Estimates indicate that as a result of these changes, approximately 3,200 investment advisers will transition from SEC registration to state registration. That transition is scheduled to conclude by mid-2012.

The securities laws also were modified in a number of ways to facilitate SEC enforcement actions. These changes include enhancing the application of antifraud provisions and providing authority to bring actions against aiders and abettors.

6.3.5 Governance and Compensation

The financial crisis showed that improperly structured compensation arrangements can lead executives and employees of financial institutions to

take imprudent risks that are not consistent with the long-term health of their organizations. To facilitate prudent risk management at financial institutions and to align the interests of executives and other employees with the long-term health of their organizations, Section 956 of the Dodd-Frank Act requires the Federal Reserve, FDIC, FHFA, NCUA, OCC, OTS, and SEC to jointly prescribe rules or guidelines that (1) require certain financial institutions to disclose to their appropriate federal regulator the structure of their incentive-based compensation arrangements so the regulator can determine whether such compensation is excessive or could lead to material financial loss to the firm; and (2) prohibit any type of incentive-based compensation that the regulators determine encourages inappropriate risks by providing excessive compensation or that could lead to material financial loss to the covered firm.

In April 2011, the agencies published a three-part proposed rule for public comment. First, a financial institution with $1 billion or more in total consolidated assets (a covered financial institution) would be required to file an annual report with its appropriate federal regulator describing the structure of the firm's incentive-based compensation arrangements. Second, the proposed rule would prohibit a covered financial institution from establishing or maintaining an incentive-based compensation arrangement that could lead to material financial loss or that encourages inappropriate risks by providing certain "covered persons" (which include all executives and employees) with excessive compensation. Finally, the proposed rule would require each covered financial institution to adopt specific policies and procedures approved by its board to ensure and monitor compliance with the rule.

The prohibitions portion of the proposed rule would require larger covered financial institutions—those with $50 billion or more in total consolidated assets—to defer at least 50 percent of the incentive compensation of executive officers and heads of major business lines for at least three years, award such compensation no faster than on a pro-rata basis, and seek to ensure that the amounts ultimately paid over the course of the deferral period reflect losses or other aspects of performance over time. For these larger covered financial institutions, the prohibitions portion of the proposed rule would also set forth additional requirements for employees of the firm who might have the ability to expose the institution to risk of substantial loss. For these employees, the board of directors or a board committee would be charged with identifying the persons (other than the executive officers subject to deferral requirements) who individually have the ability to expose the firm to possible losses that are substantial in relation to the firm's size, capital, or overall risk tolerance. Once such persons are identified, the board or committee would need to approve the incentive-based compensation arrangement for each person. For credit unions, large financial institutions would be defined as those with $10 billion or more in assets. The FHFA proposed that the income-deferral provisions apply to all entities it regulates, regardless of size.

In addition, on January 25, 2011, the SEC adopted final rules implementing provisions of the Dodd-Frank Act that require public U.S. companies to conduct separate shareholder votes on executive pay (say-on-pay) and on the frequency of the say-on-pay vote, as well as specific disclosures about any agreements to offer a form of executive compensation (so-called golden parachutes) in connection with merger and acquisition transactions.

6.4 Council Activities

6.4.1 Determination of Nonbank Financial Companies to Be Supervised by the Federal Reserve and Designation of Financial Market Utilities

Nonbank Financial Companies

One of the Council's statutory purposes is to identify risks to financial stability that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected BHCs, or nonbank financial companies. Under Section 113 of the Dodd-Frank Act, the Council is authorized to determine that a nonbank financial company's material financial distress—or the nature, scope, size, scale, concentration, interconnectedness, or mix of its activities—could pose a threat to U.S. financial stability. Such companies will be subject to consolidated supervision by the Federal Reserve and enhanced prudential standards.

The Dodd-Frank Act provides a list of 10 considerations the Council must use in making determinations under Section 113. In fall 2010, the Council began a rulemaking process to further clarify these statutorily mandated considerations. Seeking public input on the criteria, the Council issued an advance notice of proposed rulemaking (ANPR) in October 2010 and a notice of proposed rulemaking (NPR) in January 2011. The Council received significant input from market participants, nonprofits, academics, and members of the public about the need to develop an analytical framework for making determinations that will provide a consistent approach and will incorporate both quantitative and qualitative judgments. The Council expects to seek additional public comment regarding its approach to determinations and the considerations mandated by the Dodd-Frank Act, and to publish a final rule describing the process and guidance regarding the criteria for its determinations.

The Council's proposed analytical framework organizes the 10 statutory considerations into six broad categories that reflect a company's role in the financial system and potential to experience material financial distress. Three of these six categories—size, lack of substitutes for the financial services and products the company provides, and interconnectedness with other financial companies—seek to assess the potential for spillovers from one company's financial distress to the broader financial system and real economy. The other three categories—leverage, liquidity risk and maturity mismatch, and existing regulatory scrutiny—indicate the vulnerability of a company to distress, whether it is an idiosyncratic or systemic shock.

The Council's commitment to a robust determination process goes beyond transparency during rulemakings. Each determination will be firm-specific. Before an initial Council vote on a proposed determination, the company under consideration will have an opportunity to submit written materials to the Council regarding the proposed determination. Council members will vote on a proposed determination only after they have reviewed that information, and the proposed determination will proceed only if approved by two-thirds of the Council, including the affirmative vote of the Chairperson. Upon a proposed determination, a company may request a hearing, and the determination will be finalized only after a subsequent two-thirds vote of the Council, including the affirmative vote of the Chairperson. The Council must submit a report to Congress detailing its final decision, which will be subject to judicial review.

As of the date of this report, the Council has not made any determinations under Section 113 of the Dodd-Frank Act.

Financial Market Utilities

Financial market utilities (FMUs) exist in many markets to support and facilitate the payment, clearing, or settlement of financial transactions, thereby forming a critical part of the nation's financial infrastructure. However, the function and interconnectedness of FMUs also concentrate risk because the systems they operate are highly interdependent, either directly through operational, contractual, or affiliation linkages, or indirectly through liquidity flows or common participants. Problems at one system could spill over to other systems or financial institutions in the form of liquidity and credit disruptions. Accordingly, the Dodd-Frank Act provides the Council with the ability to designate an FMU as systemically important if the Council determines that the failure of or a disruption to the functioning of an FMU's operations could create or increase the risk of significant liquidity or credit problems spreading among financial institutions or markets and thereby threaten the stability of the U.S. financial system.

An FMU designated by the Council will be subject to enhanced prudential standards and supervisory requirements, such as heightened risk management standards beyond existing regulatory oversight that may otherwise be applicable. Designation further subjects an FMU to additional examinations, enforcement actions, and reporting requirements. Under unusual or exigent circumstances, designated FMUs could potentially gain access to the Federal Reserve's discount window.

Following the publication of an ANPR in December 2010 and an NPR in March 2011, and two corresponding rounds of public comment, the Council approved a final rule outlining the criteria,

processes, and procedures for the designation of FMUs at its July 18, 2011 meeting. As of the date of this report, the Council has not made any designations under Title VIII of the Dodd-Frank Act. The Council expects to address the designation of payment, clearing, or settlement activities in a separate rulemaking.

6.4.2 Risk Monitoring

One of the Council's central purposes is the ongoing identification of risks to U.S. financial stability. To help identify risks, promote market discipline, and respond to emerging threats, the Council facilitates information sharing, coordination, and communication among member agencies.

In the past year, the Council examined significant market developments and structural issues within the financial system, including topics discussed elsewhere in this report. The Council will continue to monitor potential threats to financial stability, whether from external shocks or structural weaknesses.

To facilitate this risk-monitoring process, the Council established the Systemic Risk Committee (SRC), composed primarily of agency staff in supervisory, examination, surveillance, and policy roles. The SRC helps the Council identify, analyze, and monitor risks to financial stability, and provides the Council with periodic risk assessments. Accountable for interagency coordination, the SRC meets periodically to share information to assess risk-related issues that affect financial markets and institutions and financial stability. This forum enables member agency staff to identify and analyze potential risks that may extend beyond the jurisdiction of any one agency and to collaborate on regulatory responses.

6.4.3 Studies Required Under the Dodd-Frank Act

Section 619 Study: The Volcker Rule

Section 619 of the Dodd-Frank Act, known as the Volcker Rule, strengthens the financial system and constrains risks by generally prohibiting banking entities from engaging in proprietary trading and limiting their investment in or sponsorship of hedge funds and private equity funds. The Dodd-Frank Act requires the Council to issue a study and make recommendations on the implementation of the Volcker Rule within six months after the enactment of the Dodd-Frank Act. In October 2010, the Council sought input from the public in advance of the study by issuing a request for information; it received more than 8,000 comments. The Council issued the final study at its meeting on January 18, 2011.[2] The Council's study recommends principles for implementing the Volcker Rule and suggests a comprehensive framework for identifying activities prohibited by the rule, including an internal compliance regime, quantitative analysis, and reporting and supervisory review.

Section 622 Study: Concentration Limits

Under the Dodd-Frank Act, the Council was also required to issue a study and make recommendations on the implementation of Section 622 within six months of the Dodd-Frank Act's enactment. Section 622 establishes a financial-sector concentration limit generally prohibiting a financial company from merging or consolidating with, or acquiring the assets of or control of, another company if the resulting company's consolidated liabilities would exceed 10 percent of the aggregate consolidated liabilities of all financial companies. This concentration limit is intended, along with a number of other provisions in the Dodd-Frank Act, to promote financial stability and prevent large financial institutions from becoming "too big to fail."

The Council issued the report at its meeting on January 18, 2011, meeting the statutory deadline. The Council's study concludes that the concentration limit will reduce moral hazard, increase financial stability, and improve efficiency and competition within the U.S. financial system. The study also includes largely technical recommendations to mitigate practical difficulties likely to arise in the administration and enforcement of the concentration limit, without undermining its effectiveness in limiting excessive concentration among financial companies.

On February 8, 2011, the Council published a notice and request for comment on the recommendations in the concentration limit study.

2 The report and other reports cited in this section are available online at http://www.fsoc.gov/

Section 946 Study: Risk Retention

The Treasury Secretary, as Chairperson of the Council, issued a study on the macroeconomic effects of the Dodd-Frank Act's risk-retention requirements for asset-backed securities, as required by Section 946, within 180 days of the Act's enactment. This study, which is separate from the joint rulemaking on risk retention under Section 941, was delivered to Congress on January 18, 2011. The study recognizes the economic benefits of asset-backed securitization but notes that without reform, risks arising in the securitization process can detract from these benefits. The study provides several objectives that a risk-retention framework should seek to achieve to help promote safe and efficient lending.

Section 123 Study: Economic Impact

The Dodd-Frank Act directs the Treasury Secretary, as Chairperson of the Council, to carry out a study within 180 days of the Act's enactment (and every five years thereafter) addressing the economic impact of possible financial services regulatory limitations intended to reduce systemic risk. The statute requires the study to estimate the benefits and costs of various potential regulatory limits on the efficiency of capital markets, on the financial sector, and on national economic growth, and to make recommendations on the optimal structure of those limits.

The Council Chairperson met the statutory deadline, publishing the study on January 18, 2011. The study contains a critical review of existing research on the impact of the types of financial regulation identified in Section 123 of the Dodd-Frank Act, as well as recommendations for future research to better quantify the benefits of the Act and financial regulation generally. The study recommends that a cost-benefit analysis of other potential limitations on the activities or structure of large financial institutions be addressed in the next periodic study, which is due in 2016.

Section 215 Report: Secured Creditor Haircuts

The Dodd-Frank Act also required the Council to issue a report within one year of the Act's enactment, evaluating the importance of maximizing U.S. taxpayer protections and promoting market discipline with respect to the treatment of fully secured creditors in the utilization of the OLA. Among other topics, the study outlines how various secured creditors are treated in existing resolution regimes and examines whether a secured creditor haircut would be an effective means of improving market discipline and protecting U.S. taxpayers. The Council approved this report for submission to Congress on July 18, 2011.

6.4.4 Rulemaking Coordination by the Council

As Chairperson of the Council, the Treasury Secretary is required to coordinate several major rulemakings by the member agencies under the Dodd-Frank Act.

To facilitate the joint rulemaking on credit risk retention for asset-backed securities, certain member agencies participated in an inter agency working group to develop the rule text and preamble for an NPR for public comment. The Dodd-Frank Act generally requires that securitizers retain at least 5 percent of the credit risk of an asset sold to investors through the securitization process. It also calls for specific exemptions from this requirement, such as for asset-backed securities that are collateralized solely by qualified residential mortgages. The purpose of the risk-retention requirement is to help address the misalignment of interests and deterioration of underwriting standards in the securitization markets leading up to the financial crisis. The Federal Reserve, FDIC, SEC, OCC, Department of Housing and Urban Development, and FHFA issued a joint NPR on March 30, 2011 that proposes rules to implement this requirement and represents a significant step toward strengthening securitization markets. The agencies extended the comment period for the proposed rule from June 10, 2011 to August 1, 2011.

The Chairperson of the Council is also required to coordinate the issuance of final regulations implementing the Volcker Rule, which are required to be issued within nine months of the publication of the Volcker Rule study described above. The Council Chairperson has played an active role in coordinating the agencies' work to develop consistent and comparable regulations and to promote the consistent application of those regulations.

6.4.5 Operations of the Council

The Dodd-Frank Act requires the Council to convene no less than quarterly. In its first year, the Council's principals met approximately every eight weeks.[3] The meetings bring principals from member agencies together to discuss and analyze emerging market developments and financial regulatory issues. The Council is committed to conducting its business as openly and transparently as practicable, given the confidential supervisory and sensitive information at the center of its work. The Council opens its meetings to the public whenever possible. The Council held a public session at five of its meetings and has committed to holding at least two open sessions each year.

The Council's committee structure promotes accountability and coordination among the staffs of the member agencies. Due to the substantive agenda of the Council in its first year, every two weeks, the Deputies Committee, which is composed of senior officials from each of the Council's member agencies, has convened to discuss the Council's agenda and to direct the work of the SRC and the five other functional committees. As mentioned above, the SRC supports the Council's efforts to monitor the U.S. financial system and identify potential threats to the health of the system. The other functional committees are organized around the Council's ongoing statutory responsibilities: identifying nonbank financial firms and financial market utilities for designation; making recommendations to primary financial regulatory agencies regarding heightened prudential standards for financial firms; consulting with the FDIC on orderly liquidation authority and reviewing resolution plans for designated nonbank financial firms and the largest BHCs; and collecting data and improving data-reporting standards.

To help with the identification of emerging risks in the financial system, the Council may request data and analyses from the newly created OFR housed in Treasury. The OFR will support the Council and its member agencies by providing critical data and research as well as the analytical tools required to monitor and respond to future emerging vulnerabilities. The OFR will also work with member agencies to reduce reporting burdens and increase market transparency.

Council Administration

In its first year of operation, the Council has worked to establish its institutional framework; adopted rules of operation[4]; released proposed regulations implementing its Freedom of Information Act obligations; and passed its first budget. The Council also adopted a transparency policy[5] and has complied with the policy.

6.4.6 Section 119 of the Dodd-Frank Act

Section 119 of the Dodd-Frank Act provides that the Council may issue nonbinding recommendations to member agencies on disputes about the agencies' respective jurisdiction over a particular BHC, nonbank financial company, or financial activity or product. (Certain consumer protection matters, for which another dispute mechanism is provided under Title X of the Act, are excluded). To date, no member agency has approached the Council to resolve a dispute under Section 119.

3 The Council met on October 1, 2010; November 23, 2010; January 18, 2011; March 17, 2011; May 24, 2011; July 13, 2011; and July 18, 2011.

4 The rules of operation are available online at http://www.fsoc.gov/

5 The transparency policy is available online at http://www.fsoc.gov/

7 Potential Emerging Threats to U.S. Financial Stability

Financial stability requires a forward-looking assessment of the financial system's propensity to generate imbalances and the system's resilience to a range of potential adverse events. Misaligned incentives and inappropriate compensation can produce imbalances and vulnerabilities. Unanticipated events and the reversal of widely held beliefs create shocks that can be amplified by existing structural vulnerabilities. Threats to financial stability arise from a combination of imbalances, shocks, and vulnerabilities that impair the functioning of the financial system. The Council is focused on assessing and mitigating potential threats and taking reasonable steps to make the financial system more robust.

Shocks and imbalances can interfere with financial stability through three main interconnected channels:

1. Failure of a financial institution or a market participant to honor a contractual obligation.
2. Deterioration in market functioning.
3. Disruptions in financial infrastructure.

When a financial firm or market participant fails to honor a contractual obligation, not only is it often a sign that the firm or market participant is failing or has failed as a going concern, it is also a disruption to the operations and income of the other party to the obligation. Even if the disruption is not large enough to threaten the counterparty, it will increase uncertainty and can have negative consequences for the market as a whole.

A deterioration in market functioning can force financial institutions and market participants to rapidly reassess their risk profiles. Abrupt changes in pricing or liquidity for asset, funding, or risk transfer markets can disrupt the ability of financial institutions and market participants to manage their risks, forecast their financial needs, or even fulfill their contractual obligations.

Disruptions in financial infrastructure can undermine confidence in financial transactions; without certainty that a payment will be delivered, or a transaction settled and cleared, financial institutions and market participants will be reluctant to engage in transactions, even with otherwise reliable counterparties.

A key goal of the Council and its member agencies is to monitor threats to U.S. financial stability and reduce the transmission of shocks and imbalances through these channels. Achieving this goal requires not only fixing structural vulnerabilities but also maintaining confidence in the ability of the financial system to absorb a wide range of shocks.

Under market stress, financial institutions and market participants may react to fears about the amplification of potential losses by reducing their provision of financial services within the system itself and to the broader economy. For example, if lenders believe that a borrower may fail to honor a contractual obligation, they may restrain lending to other borrowers to conserve capital and liquidity. Because of the interconnectedness of the financial system, such preemptive reactions can destabilize the system.

In addition, large complex financial institutions that are difficult to resolve in an orderly manner can produce inefficiencies in the allocation of gains and losses across private investors that undermine market discipline. Perceptions that institutions are "too big to fail" can increase uncertainty in periods of market turmoil and reinforce destabilizing reactions

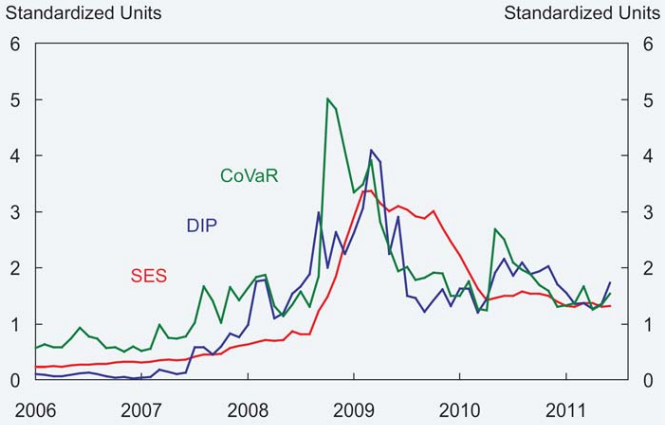
Box J: Measuring Systemic Risk

The development of systemic risk measures and models is in an early stage. Various measures seek to estimate either the overall vulnerability of the financial system to shocks, or the contribution of individual firms to systemic risk. Generally, these measures have declined from their highs.

Although there is no one way to define systemic risk, all definitions attempt to capture risks to the stability of the financial system as a whole, as opposed to the risk facing individual financial institutions or market participants. For example, market participants may believe that they have insured against certain risks. However, if all participants act similarly to avoid those risks, for example, crowding into the same positions, their actions might amplify shocks and threaten the stability of the financial system.

Directly measuring systemic risk is challenging, and no consensus exists on the best measure of the level of systemic risk in the financial system. Financial economists have constructed various measures for assessing the contribution of individual firms to systemic risk on the basis of market prices. These measures can be averaged across firms to produce aggregate measures ***(Chart J.1)***.

Chart J.1 Average Risk Measures Across the 5 Largest BHCs



Source: FRBNY Calculations

Note: 5 largest BHCs by total assets.

The chart shows three measures that use market data in different ways to estimate the covariation between individual financial institutions and the financial system in times of financial distress. The conditional value-at-risk (CoVaR) considers losses in total assets, the systemic expected shortfall (SES) focuses on equity losses, and the distressed insurance premium (DIP) measures risk from a creditor's perspective. CoVaR estimates the potential financial system losses conditional on the distress of a particular institution. SES takes an opposite approach, estimating the equity loss of a particular institution conditional on a systemwide equity shortfall. DIP uses credit default swap spreads to estimate the hypothetical premium that a firm would have to pay to buy insurance against systemwide distress.

All three measures are contemporaneous, in the sense that they estimate the systemic risk contributions at a point in time. While they measure the average systemic risk for large financial institutions over time, systemic risk measures are most commonly used for gauging the cross-sectional differences in systemic risk. The measures have been shown to forecast differences in systemic risk across institutions, but their ability to forecast the risk of the financial system as a whole is more limited. Since the measures are based on market prices for individual institutions, they illustrate the level of concern market participants have about specific types of risks and how those risks interact, particularly with respect to the largest financial institutions. Market participants, whose decisions determine the direction of these measures, have less than perfect information about the activities and systemic risks collectively faced by large financial institutions.

within the financial system. These destabilizing reactions and their consequences for the economy are at the core of the concept of systemic risk ***(see Box J: Measuring Systemic Risk)***.

This section has two parts. First, it examines the interactions of current vulnerabilities in the financial system with potential shocks and imbalances that could be amplified into a threat to financial stability; for example, a further decline in real estate prices, an escalation of the European sovereign debt crisis, and a sudden increase in term premiums on U.S. government debt. The Council aims to reduce the system's exposure to identified structural vulnerabilities and thereby bolster its resilience.

The second part of this section discusses some of the dominant forces that will drive change in the financial system over the next few years and their possible effects on the incentives of financial market participants and institutions. To sustain financial stability, these incentives must be aligned with society's need for the efficient provision of financial services and must not lead to future imbalances.

The dominant forces are divided into three categories: (1) cyclical, (2) secular, and (3) regulatory forces. Among the important cyclical forces are normalization of monetary policy, fiscal consolidation, and recovery of real estate markets. For the secular forces we focus on technological innovation and new products that could transform the provision of financial services, with special attention to the role of globalization. The driving regulatory forces center around the continued implementation of the Dodd-Frank Act and issues related to large complex financial institutions.

7.1 Vulnerabilities and Shocks

The speed with which financial disruptions spread to the rest of the world in September 2008 showed the vulnerabilities of financial institutions and markets to certain shocks. Leveraged financial institutions that rely on access to market liquidity have an inherent fragility. Vulnerabilities increase when institutions are highly leveraged or when market participants do not have enough information about financial products or about their own counterparties. The crisis also illustrated the risks that can emerge when a large number of market participants and key markets rely on the stability and services of a particular entity.

Council members are addressing vulnerabilities in the financial system through the many reforms and recommendations described in this report. While it is not possible to anticipate every potential threat to the financial system, Council members are identifying and analyzing emerging threats and addressing them in their supervision of financial institutions, markets, and infrastructure.

7.1.1 Financial Institutions

The resilience of individual financial institutions to stress is a key factor in the overall stability of the system. The financial crisis showed that regulators must focus not only on the safety and soundness of individual institutions but also on the risks those institutions could pose to the stability of the system as a whole.

The crisis illustrated that shocks can become magnified when many large institutions are connected to each other, either directly (e.g., through counterparty exposure in short-term funding, trading, and derivatives activities) or indirectly (e.g., through common exposures to similar assets or funding sources).

Interconnectivity as a source of risk is exacerbated when there is insufficient transparency to determine which entities are connected to each other, or when certain critical entities are not subject to robust risk management standards. The Dodd-Frank Act includes several measures to increase the amount of information market participants have about the aggregate risk exposure of their counterparties. For example, the Federal Reserve will perform stress tests on large financial institutions and report a summary of the results ***(see Box K: Stress Testing as a Forward-Looking Risk Mitigation Tool)***; private funds will be subject to disclosure requirements; and new trading and reporting requirements will enhance transparency in the derivatives market. Council members have also taken measures to improve the information available to both regulators and the public about individual financial institutions.

Financial institutions are generally less vulnerable today than they were before the crisis, with stronger capital and liquidity buffers and a reduced reliance

Box K: Stress Testing as a Forward-Looking Risk Mitigation Tool

Stress testing reveals important information about financial institutions' resilience to potential adverse developments. It can guide supervisors and firms in their efforts to improve the overall health of the financial system.

Stress testing has long been used as a risk management tool, but the approach gained greater prominence during and after the financial crisis. Recent supervisory initiatives build on lessons learned during the crisis about the importance of a forward-looking and comprehensive perspective on a banking firm's capital and liquidity. A critical component is the ability to evaluate both the quantity and quality of a firm's capital against a range of plausible but severe outcomes in the economy and financial markets. Such evaluation can help supervisors allocate resources to better understand and address vulnerabilities, provide important feedback to firms about relative risks, and supply crucial information to market participants.

Many types of stress tests are available for financial institutions. They range from an internally run stress test of an idiosyncratic exposure at one institution, to a supervisor-run, systemwide stress test that simultaneously stresses a number of financial institutions that, in aggregate, account for a large share of total financial system assets. The focus here is on systemwide, supervisor-initiated tests, but it should be emphasized that financial institutions' own stress tests are a crucial component of their internal risk management and capital planning processes. The Dodd-Frank Act recognizes the importance of stress tests, mandating supervisory tests to be conducted once a year and company tests to be run twice a year for bank holding companies with assets greater than $50 billion and for all nonbank financial institutions supervised by the Federal Reserve. It also mandates annual company tests by all other federally regulated financial companies with consolidated assets of more than $10 billion.

A supervisory stress test has three key elements: (1) specification of the macroeconomic and financial market stress scenario(s); (2) a translation of the stress to capital and liquidity outcomes for individual institutions and the broader financial system; and (3) follow-ups, which could include public disclosure of results and supervisory actions. In describing the three elements, the main focus will be on stresses that potentially affect institutions' capital cushions.

Defining the Stress

Stress tests start out by defining one or more stressed macroeconomic and financial environments relative to a baseline scenario. The systemwide perspective comes from analyzing a set of the firms experiencing a simultaneous external stress. The definition has two aspects: (1) the severity of the stressed environment, and (2) the adverse developments that require special attention.

The severity of the test can be measured in various ways. For example, in the Supervisory Capital Assessment Program (SCAP), the baseline unemployment rate scenario was based on the Blue Chip consensus forecast but was set 1.5 percentage points higher in the "more adverse" scenario, consistent with a forecast error that would occur about 1 out of 10 times. In the Comprehensive Capital Analysis and Review (CCAR), the supervisor-designed macroeconomic stress used by the firms in parts of their internal analysis assumed an unemployment rate above 11 percent. As measured by forecast errors, this was a highly unlikely event, but it was used to ensure that the projected recovery in the baseline did not lead to a scenario that entailed only a mild stress on the firms.

The definition of adverse developments requires analysis of the most salient among a large number of variables to identify areas that might need risk mitigation. In the SCAP and the CCAR, special attention was given to house prices, reflecting the exposure of the financial system to real estate ***(Chart 7.1.4)***. Recently, supervisors and firms have been examining scenarios in which the term structure of interest rates deviates in a variety of ways from the consensus forecast.

Historical episodes of financial market stress are often used to assess potential losses on firms' trading and derivatives activities. The SCAP and the CCAR used the financial market events of the second half of 2008, with the assumption that the changes in market prices from June to December 2008 would all happen in one day. Contagion effects from stresses in global markets have been another focus of attention. Supervisors and firms have considered a number of financial market contagion scenarios that could result from the sovereign debt crisis in peripheral Europe.

Translating the Stress to Financial Firm Outcomes

Supervisors typically use two basic approaches to translate the macroeconomic stress to outcomes for capital. The top-down approach uses statistical models estimated on systemwide aggregates to produce projections of losses and revenue under the stress. This approach has the advantage of incorporating a full range of data that spans the industry, but it can miss important firm-specific variation. The bottom-up approach uses detailed data about individual characteristics of specific institutions as inputs to models to produce projections of losses and revenue; it requires active engagement between firms and supervisors.

A major advantage of systemwide tests is that they allow a horizontal comparison of results across institutions, which helps supervisors understand areas of particular exposure and vulnerability in the financial system. This information enables them to impose discipline on individual firms by identifying outliers. For example, in the SCAP, estimates of total industry returns on assets were used to evaluate the estimates of revenue for each firm.

For trading and derivatives activities, the focus is on profits and losses resulting from changes in the values of institutions' trading and private equity positions, as well as potential losses stemming from changes in the size of counterparty exposures at the same time that counterparty creditworthiness is deteriorating. Depending on the institutions' trading positions and the scenario used, it is possible that some institutions might profit from particular stress scenarios. But the breadth and severity of the global shock used in SCAP and CCAR generated significant stress losses across all firms in both exercises.

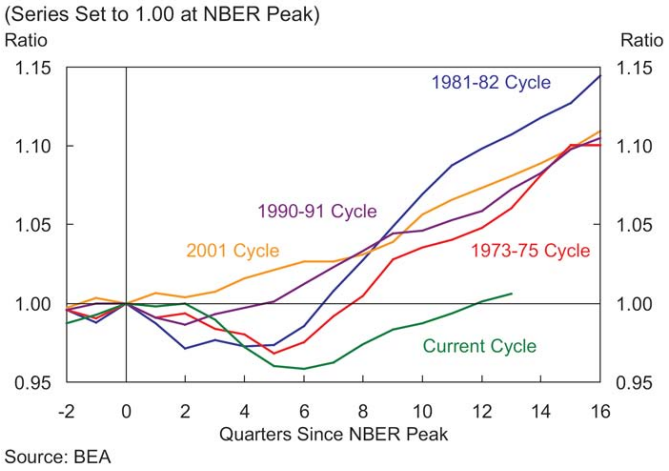
The results for losses and revenue are then converted into a path for regulatory capital for each firm. Important considerations in constructing this path are tax liabilities and credits, as well as assumptions on the future lending and trading activity of the firms. Similarly, projections of the balance sheet structure of the firm are critical to project regulatory capital ratios. If the focus is on liquidity, assumptions about the behavior of liability holders are required. For example, one might assume that no short-term wholesale funding rolls over.

Disclosure and Supervisory Actions

A large amount of stress testing happens as part of standard firm risk management and supervisory oversight; thus, it is considered to be confidential supervisory information about the firm. These confidential results can lead to risk mitigation actions by the firms or supervisory action. However, for supervisor-run, systemwide stress tests, public disclosure can have advantages. For example, in the SCAP, detailed supervisory estimates were published for each firm, along with an extensive description of the methodology. This disclosure served a number of useful purposes: it reduced the uncertainty around private sector estimates of losses for individual firms; it provided estimates of losses across various asset classes that were useful to all market participants; and the transparency about the results and methodology gave credibility to the overall exercise.

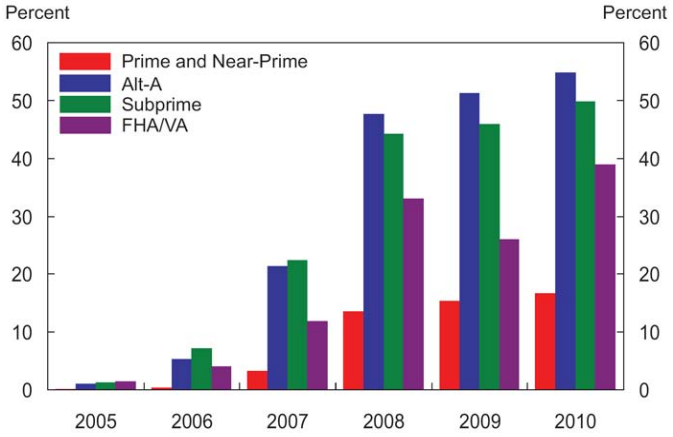
Systemwide stress tests can also be paired with specific sets of supervisory actions. In the SCAP, firms whose capital fell below the supervisory tier 1 common ratio of 4 percent in the hypothetical more adverse scenario were required to take capital actions to move above this projected ratio. If they were unable to attract private capital, the government was ready to provide capital as a backstop under the Troubled Asset Relief Program. In the CCAR, supervisors used the information from firm-run stress tests—along with their analysis of the adequacy of capital planning, dividend policies, and Basel III projections—to give "objections" or "no objections" to firms' capital distribution requests.

Chart 7.1.1 Real GDP Growth in Recoveries



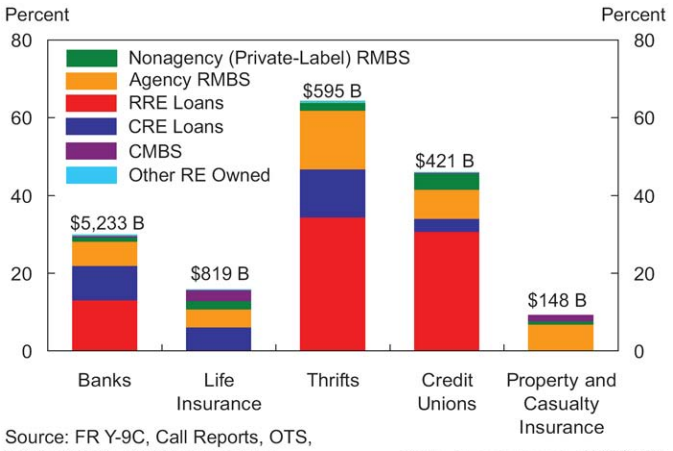
Source: BEA

Chart 7.1.2 Percent of Mortgages with Negative Equity



Source: CoreLogic and LPS

Chart 7.1.3 Real Estate Exposure as a Percent of Assets



Source: FR Y-9C, Call Reports, OTS, NAIC, NCUA, FSOC calculations

Note: Exposures as of 2010:Q4.

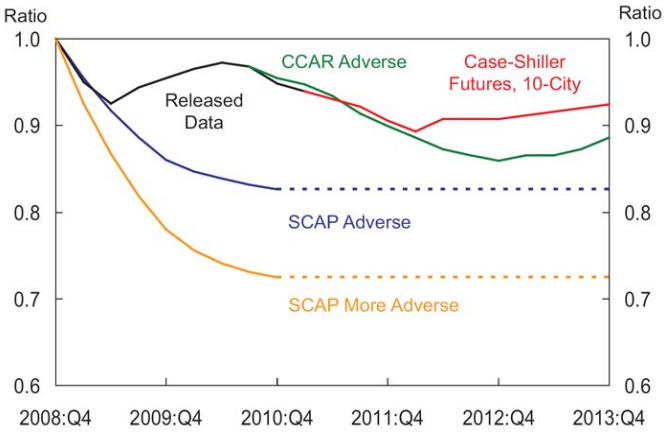
on short-term funding markets. Nonetheless, Council members are focusing on potential threats that could result from external shocks or changing dynamics in the financial system. The economic environment for financial institutions is challenging. Economic growth in the United States remains weak compared with recoveries from previous recessions ***(Chart 7.1.1)***, and real estate markets remain depressed. Continued deterioration in residential real estate markets would add additional strains to household balance sheets and reduce the value of collateral supporting residential mortgages ***(Charts 4.2.7*** and ***7.1.2)***.

Supervisors have carefully analyzed the residential and commercial real estate holdings of U.S. financial institutions ***(Chart 7.1.3)***. In the Supervisory Capital Assessment Program and Comprehensive Capital Analysis and Review exercises, supervisors tested the effects of additional substantial declines in real estate prices on the capital buffers of large bank holding companies (BHCs) ***(Chart 7.1.4)***. While losses would increase with further price declines, the increased capital and relatively large loan loss reserves in the system provide some reassurance that large financial intermediaries would not have to deleverage in response ***(Charts 5.3.6*** and ***5.3.7)***.

Council members remain alert to the potential for financial institutions, under pressure to boost returns to shareholders, to aggressively reduce their underwriting standards. As a result of the weak recovery and low overall loan demand, financial institutions have built up unprecedented cash reserves and increased their holdings of government securities ***(Chart 7.1.5)***. Supervisors are carefully monitoring loan terms, especially for non investment-grade corporate loans. Leveraged loan issuance in early 2011 signaled some pressures on underwriting standards, but the potential for market disruptions appears low because of the relatively small size of the market and the limited use of funding leverage such as repo.

Council members have considered the effects on banks of various scenarios for yield curve shifts in the coming quarters. Under a yield curve-

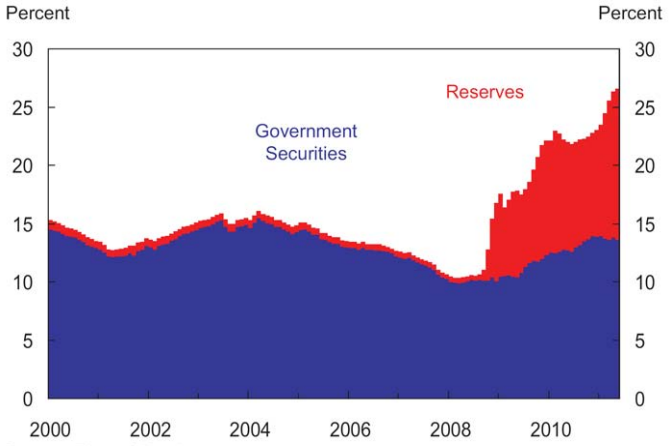
Chart 7.1.4 House Prices Under Supervisory Scenarios



Source: S&P and FRB

Note: Case-Shiller 10-City Index.

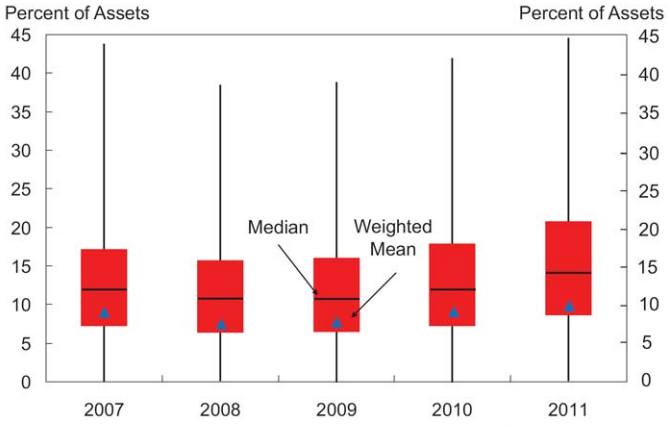
Chart 7.1.5 Securities and Reserves as a Percent of Assets



Source: Flow of Funds

Note: Data for all commercial banks.

Chart 7.1.6 Large BHC Treasury and Agency Debt Holdings



Source: FR Y-9C, FSOC Calculations

Note: Extremes of 1st and 99th Percentile, Box Ranges from 25th – 75th Percentile. Domestically owned BHCs.

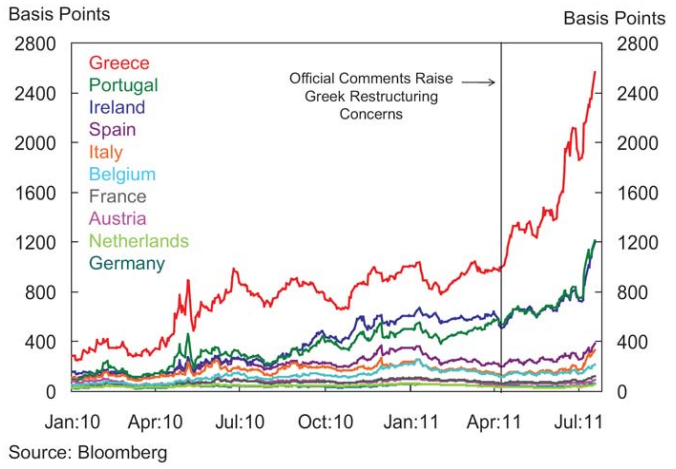
steepening scenario, long-term rates would rise relative to short-term rates if, for example, investors were to demand higher compensation for long-term interest rate risk. In that scenario, while lenders would benefit from the higher returns on new loans, they would be exposed to losses on their current holdings of long-term assets. In particular, many banks have increased their exposures to long-term government and agency securities: one-quarter of large BHCs had exposures of 20 percent or more as of first quarter 2011 ***(Chart 7.1.6)***. Supervisors are actively analyzing banks' management of these exposures.

A steeper yield curve would have various implications for bank income. Statistical analysis for large BHCs suggests that net interest margins could be expected to increase if the yield curve steepened. However, higher long-term interest rates could be expected to dampen economic activity and loan growth, so the overall effect is less clear.

Globalization has increased the exposure of U.S. financial institutions to international developments. Markets have recently signaled heightened concern about sovereign and bank balance sheet risks in the peripheral euro area ***(Chart 7.1.7)***. Supervisory analysis and disclosures by large U.S. banks indicates that direct net exposures of U.S. banking firms to Greece, Ireland, and Portugal, individually and collectively, are very limited. Insurance industry exposure to peripheral Europe, which is also very limited, is concentrated in private corporations. The relatively larger holdings in Ireland primarily reflect exposures to large multinational corporations ***(Chart 7.1.8)***.

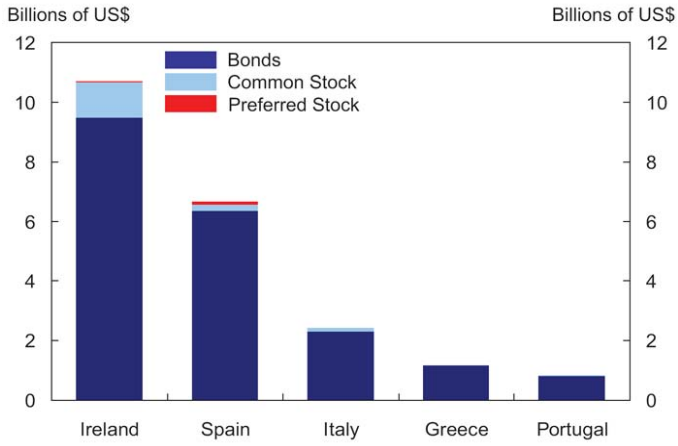
While U.S. financial institutions' direct claims on peripheral euro area borrowers are relatively modest, their exposures to core European banks in the United Kingdom, Germany, and France are much larger, and those European banks are the primary international lenders to peripheral European borrowers. The interconnectedness of financial institutions with sovereigns makes it difficult to precisely quantify all possible exposures, which in turn

Chart 7.1.7 European Sovereign 5-year CDS Spreads



Source: Bloomberg

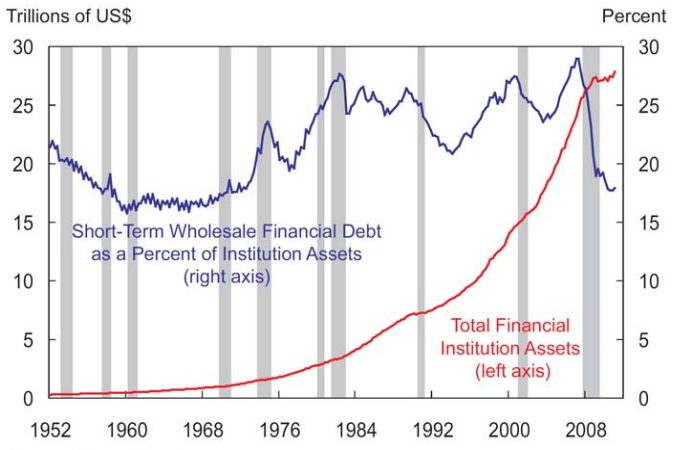
Chart 7.1.8 Insurance Industry Exposure to Europe



Source: NAIC

Note: As of 2010:Q4.

Chart 7.1.9 Short-Term Wholesale Funding



Source: Flow of Funds

increases the risk that a credit event could lead to generalized declines in investor sentiment, losses of liquidity, and associated disruptions of international financial markets.

7.1.2 Financial Markets

The crisis highlighted the vulnerabilities of financial markets to shocks. Member agencies have been developing tools to monitor financial markets so they can better understand these vulnerabilities.

Before the crisis, maturity and risk transformation had extended into untested areas, with new and often more leveraged financial instruments and institutional structures. Much of this transformation depended on liquid wholesale funding markets. Because of the complexity and opacity of some of these products, investors often relied on the judgment of credit rating agencies in making investment decisions. As investors began to rethink the quality of some of the underlying assets and the soundness of their counterparties, market liquidity started to tighten. Tighter liquidity exposed funding problems for many financial institutions, leading to fire sales into illiquid markets. These sales often forced recognition of losses, reinforcing investor doubts and further constraining funding.

Council agencies are developing tools to improve their understanding of potential risks to financial stability, particularly with respect to credit allocation, leverage, and maturity transformation ***(see Box L: Improvements in the Monitoring of Risks to Financial Stability)***.

The U.S. financial system has significantly reduced its reliance on short-term wholesale funding ***(Chart 7.1.9)***. The repo market has shrunk by approximately 30 percent and the asset-backed commercial paper market has shrunk by approximately two-thirds. However, large financial institutions differ in their ability to access stable retail deposits, which may expose vulnerabilities for certain firms ***(Chart 7.1.10)***.

Large institutions' funding structures and risk management operations are being monitored

Box L: Improvements in the Monitoring of Risks to Financial Stability

The crisis exposed crucial gaps in regulators' knowledge about how the U.S. financial system allocates credit risk, finances long-term assets with short-term liabilities, and creates leverage.

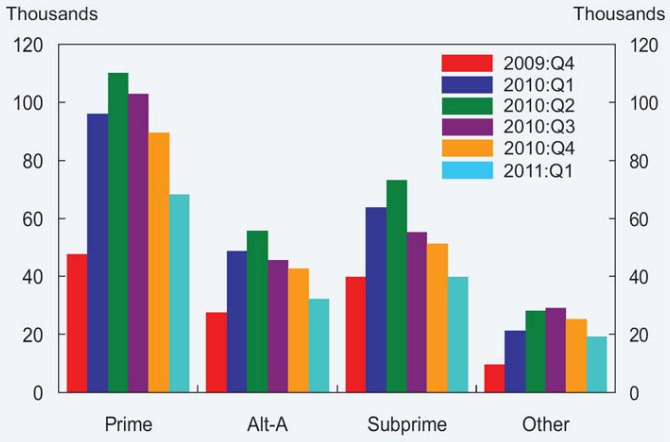
The gaps in regulators' knowledge encompassed activities of regulated institutions as well as those of institutions that operated on the periphery of regulation, such as nonbank lenders, mortgage brokers, and private investment funds. For example, supervisors knew that much financial activity had moved from the banking sector to the capital markets, but they did not fully understand the risks that certain activities posed to the institutions they supervised and to the financial system as a whole. Regulators were also slow to appreciate the severity of the problems arising from the increase in consumer financial services offered by mortgage brokers, nonbank mortgage lenders, and other entities that were not federally supervised.

The regulatory community is now working to fill these knowledge gaps. For example, the SEC and the CFTC, responding to a Dodd-Frank Act mandate, have proposed a new confidential reporting form, Form PF, that certain private fund advisers would file with their regulators. The form requests detailed information about the amount of assets under management, use of leverage, counterparty credit risk exposure, and trading and investment positions. This form would be required for investment advisers to private funds registered with the SEC and certain commodity pool operators and commodity trading advisors dually registered with the CFTC and the SEC.

Members of the Council have taken steps to improve the information available to investors about financial markets and institutions. The quarterly reporting forms filed by banks (Call Reports) and bank holding companies (Y-9C forms) now require greater detail on securities holdings, particularly of complex structured products; loan holdings, unused commitments, and the types of loans that are not performing; and derivatives and other trading activities. These forms have been revised since the crisis to include a new schedule on firms' variable interest entities and significantly expanded schedules on firms' residential and commercial mortgage activities. The forms also address troubled debt restructurings, and the measurement of both assets and liabilities under fair value accounting standards.

Since early 2008, the OCC and the Office of Thrift Supervision have released their quarterly Mortgage Metrics reports describing the state of the mortgage market, based on loan-level information collected by the agencies in their supervision of the federally regulated banks and thrifts with the largest mortgage servicing portfolios ***(Chart L.1)***. The OCC has followed up with similar projects to collect and aggregate loan-level data on large banks' exposures in home equity, credit card, and commercial real estate loans, often working in conjunction with the Federal Reserve and other regulators. The agencies, led by the Federal Reserve, have also expanded the long-standing Shared National Credit Program, under which regulators share information on banks' credit exposures to large corporations. This provides more granular information about the credit risk of specific corporations; information is collected on a quarterly basis.

Chart L.1 Number of New Loan Modifications



Source: OCC and OTS

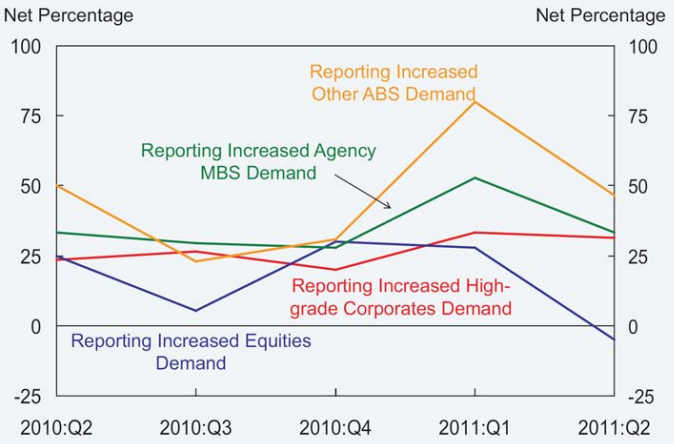
Owing to their presence in every state, state insurance, banking, and securities regulators can make important contributions to financial stability by providing information about developments or trends they are observing in institutions and markets and taking appropriate actions. For example, state securities regulators are often the first to identify new investment frauds and marketwide investment-related violations; to assist the Council in monitoring potential threats to the financial system, they have developed a protocol to facilitate the flow of information through their member representative to the Council.

State mortgage regulators have developed and launched the Nationwide Mortgage Licensing System and Registry (NMLS), which enhances supervision of the residential mortgage market by granting a unique identifier to residential mortgage loan originators and companies. The unique identifier allows supervisors to track mortgage providers across state lines. Additionally, consumers, industry, and regulators have access to specific originators' histories and qualifications through NMLS Consumer Access. The system was established as a voluntary licensing system for state-licensed and state-regulated mortgage loan originators but was codified by Congress for mandatory use through the Secure and Fair Enforcement for Mortgage Licensing Act of 2008; it enables state and federal regulators to better coordinate their mortgage supervision efforts.

In June 2010, the Federal Reserve launched the quarterly Senior Credit Officer Opinion Survey on Dealer Financing Terms, which includes qualitative information on the leverage that dealers provide to financial market participants in the repo and over-the-counter derivatives markets ***(Chart L.2)***. This survey complements more frequent quantitative data that supervisors collect on a confidential basis from large complex financial institutions about their liquidity profiles.

In April 2010, the SEC proposed a requirement for enhanced disclosure by asset-backed issuers relying on the safe harbor provisions for privately issued securities. In addition, the SEC proposed amendments to Rule 144A that would provide more transparency with respect to the private market for these securities.

Chart L.2 Changes in Demand for Securities Financing



Source: Senior Credit Officer Opinion Survey

These amendments require a structured finance product issuer to file a public notice of the initial placement of structured finance products that are eligible for resale under Rule 144A. Regulators and other market participants may benefit from the availability of more information about private placements of structured finance products.

Because the securities-lending activities of some AIG insurance subsidiaries were a source of concern and cost during the crisis, state insurance regulators have adopted additional disclosure requirements designed to provide more complete disclosure of the securities-lending agreements used by insurers. Under the new rules, reinvested collateral from securities-lending programs that was previously reported in summary form will be subject to the same quarterly reporting required of an insurer's regular investments. Programs will have to include details on carrying value, fair value, and maturity date, and a designation of credit quality for every single investment. Prior to the financial crisis, state insurance regulators did not generally monitor the securities-lending activities of insurance companies domiciled in other states; the crisis illustrated the need for greater transparency. Insurers are now required to complete an additional schedule on securities-lending activities in their quarterly and annual reports that highlights (1) any asset/liability mismatch that would result from reinvesting the collateral into longer duration assets, and (2) any market value/credit risk that could materialize if the insurer were required to return

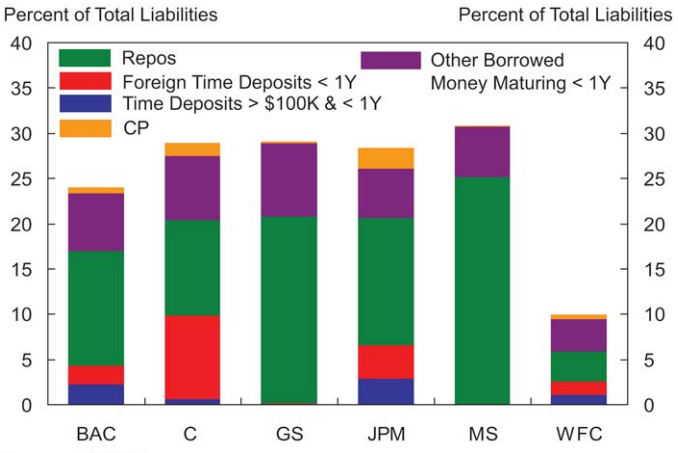
collateral to the counterparty. The enhanced securities-lending reports will help the new FIO monitor the insurance industry, including potential issues or gaps in the regulation of insurers that could contribute to a systemic crisis.

To better understand and report insurers' exposure to derivatives, state insurance regulators have enhanced the collection of information on the use of derivatives. These disclosures supplement state insurance regulators' ability to monitor use of derivatives by insurers under state insurance laws, and support the FIO's ability to monitor all aspects of the insurance industry.

The OFR has helped launch an initiative to create a global system to identify parties to financial contracts. Unique legal entity identifiers (LEIs) will increase market transparency and benefit market participants by making it easier for them to report and evaluate aggregate exposures. LEIs will also improve the quality of supervisory and nonsupervisory data used by regulators to measure and assess risks, and will facilitate research outside the regulatory community that will promote market discipline.

For purposes of monitoring risks to financial stability, the Dodd-Frank Act authorizes the Council to request data from the OFR and its own member agencies. The Council may also require financial companies to submit reports that will allow it to evaluate whether a specific company, activity, or market could pose a threat to financial stability, after first relying to the extent possible on information provided by supervisors.

Chart 7.1.10 Less-Stable Funding Sources at 6 Largest BHCs



Source: FR Y-9C

Note: 2011:Q1, liabilities excluding minority interest.

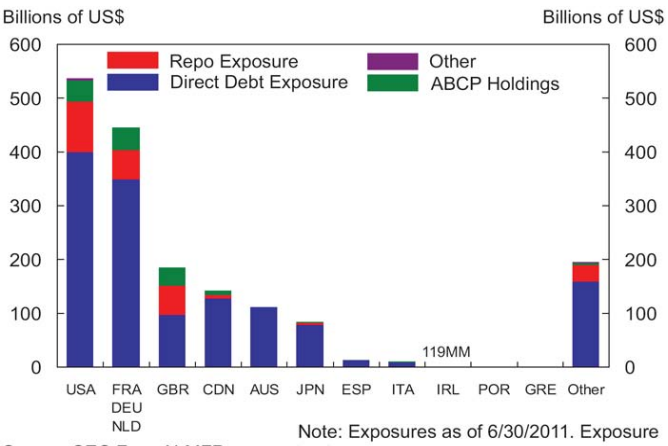
Chart 7.1.11 Potential BHC Ratings Without Support Uplift

	S&P Ratings		Moody's	
	LT Rating No Support	ST Rating No Support	LT Rating No Support	ST Rating No Support
BAC	BBB+	A-2	Baa3*	P-2*
C	BBB+	A-2	Baa3*	P-2*
GS	A-	A-2	A2	P-1
JPM	A+	A-1	A1	P-1
MS	BBB+	A-2	Baa1	P-2
WFC	AA-	A-1	A3*	P-1 or P-2

Source: Moody's, S&P

Note: *Denotes rating is under review for downgrade.

Chart 7.1.12 U.S. Prime MMF Exposure by Country and Type



Source: SEC Form N-MFP

Note: Exposures as of 6/30/2011. Exposure for Greece and Portugal is reported as zero.

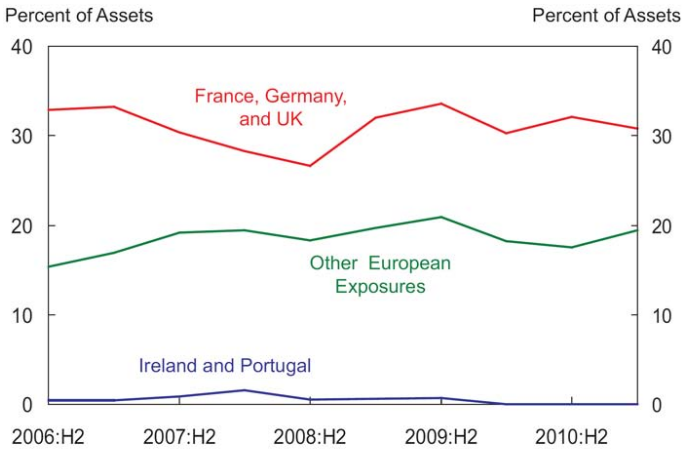
closely, especially their short-term funding strategies and new products. Financial institutions have begun to develop short-term funding products, such as collateralized commercial paper, to comply with new regulatory guidelines and still meet their business objectives. Council members are closely monitoring the liquidity and credit risk these products entail for issuers and investors.

Credit rating agencies continue to factor in ratings uplifts for firms that they consider might benefit from an implicit government backstop ***(see Section 5.4.5)***. However, as ratings are reviewed ahead of the implementation of the enhanced resolution authority under the Dodd-Frank Act, certain firms' ratings have been placed on review for downgrade. If the rating uplift associated with the rating agencies' current perceived likelihood of "systemic support" were to be removed without any offsetting action on the stand-alone rating, the short-term ratings of some firms could fall below A-1/P-1 ***(Chart 7.1.11)***. A downgrade of the short-term rating could affect the liquidity profile of these institutions because of their continued reliance on short-term wholesale funding, particularly at broker-dealers. The rating sensitivity of wholesale funding sources such as money market funds (MMFs), which are restricted in their ability to provide funding to lower rated counterparties, could also be a factor. Few historical precedents exist of firms with large broker-dealers operating with A-2/P-2 ratings.

Since the crisis, assets managed by MMFs have declined. Council members have been tracking the exposures that domestic MMFs have to Europe ***(Chart 7.1.12)***. Their direct exposure to the countries that have been most affected by the sovereign debt crisis is minimal ***(Chart 7.1.13)***, although some major European banks obtain substantial short-term wholesale U.S. dollar funding from U.S. money market funds.

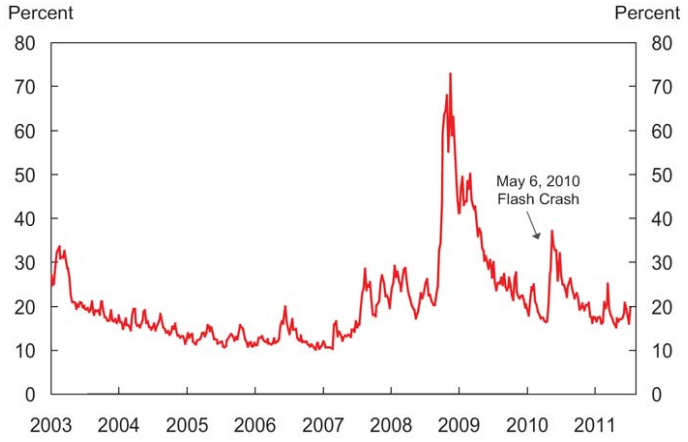
A sudden unexpected increase in volatility in financial markets could expose vulnerabilities ***(Chart 7.1.14)***. During periods of violent price movements, market liquidity can evaporate as hedging strategies to protect against market

Chart 7.1.13 U.S. Prime MMF European Exposures



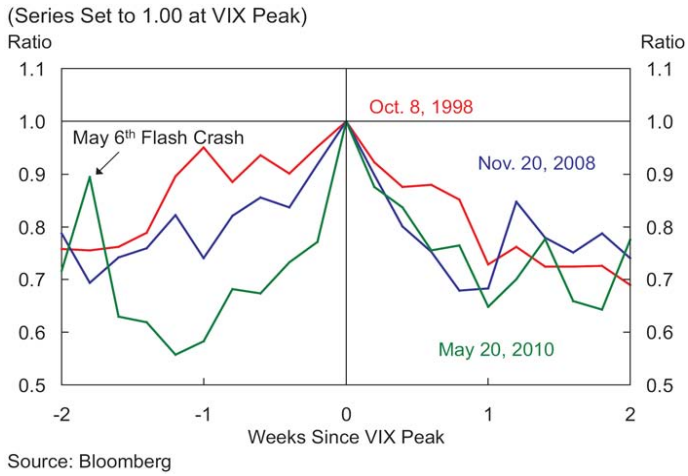
Source: Fitch Ratings Note: Sample based on 10 largest U.S. prime MMFs.

Chart 7.1.14 VIX: A Measure of Financial Market Volatility



Source: CBOE, NYSE

Chart 7.1.15 Sharp Jumps in Market Volatility



Source: Bloomberg

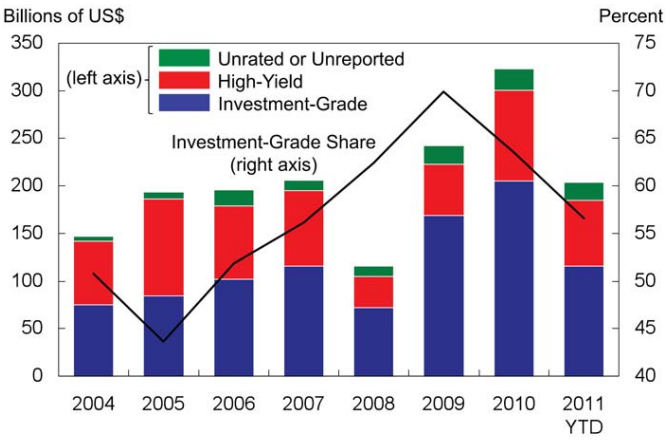
risk become strained or directly amplify the price movements. For example, in the October 1987 equity market crash, portfolio insurance programs were designed to sell when prices declined; in fact, they were set to sell at an increasing rate, thereby accelerating the market decline. Similarly, in the flash crash of May 6, 2010, liquidity evaporated and market functioning deteriorated rapidly. Regulators have added circuit breakers in equity markets to mitigate such dynamics ***(see Section 5.3.4)***, but this event illustrated the potential fragility of market liquidity, particularly in areas characterized by rapid innovation and change in market behaviors.

The role of exchange traded funds (ETFs) during the flash crash has focused attention on these products. The rapid rise of ETFs has been driven by the attraction of gaining liquid exposure to less liquid asset classes—such as commodities and certain emerging markets—without having to execute trades directly in less liquid markets ***(Chart E.1)***. However, the liquidity of ETFs depends heavily on the support of market makers and on market functioning in the underlying asset. The relationship between ETF turnover and market volatility bears further analysis, and regulators must continue to monitor the development of more complex products in both U.S. and foreign-domiciled funds that might heighten liquidity concerns.

Financial contagion—the rapid transmission of distress to markets away from the epicenter of weakness—can occur with startling speed, as happened in September 2008 and again in May 2010, after increased concerns about sovereign risk in peripheral Europe spread across global financial markets. The latter episode also showed how a combination of shocks and vulnerabilities—in this case, the flash crash and uncertainty over peripheral Europe—can amplify strains ***(Chart 7.1.15)***.

Periods of heightened correlation across asset classes can also occur. During the financial crisis, investors pulled away from any assets with potential credit risk, regardless of the assets' underlying fundamentals, in favor of U.S. Treasuries and other "safe havens."

Chart 7.1.16 Emerging Market Bond Issuance



Source: Dealogic

Note: 2011 is YTD as of 2011:H1.

Conversely, a sharp transition away from this trading pattern could have implications for hedging strategies and could amplify market volatility.

With heightened uncertainty, financial markets can experience fast price movements. For example, if the yield curve were to steepen abruptly, perhaps owing to uncertainty about raising the U.S. government's debt limit, various markets could be strained. The impact of yield curve steepening on individual market participants could be mitigated to some extent by hedging activity, as interest rate risk is commonly transferred in derivatives markets, but recent financial crises have shown that larger-than-expected price movements can expose previously unknown vulnerabilities.

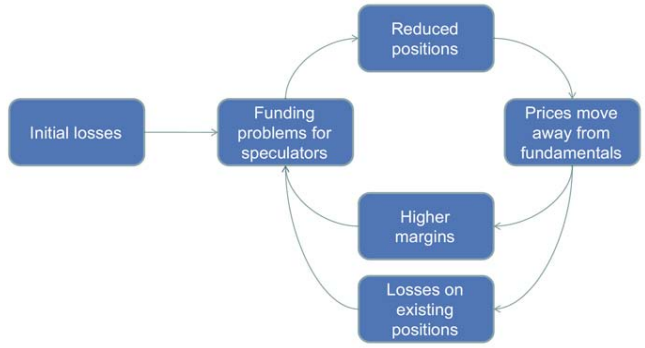
The increasing asset allocations to commodities and emerging markets also may present challenges. Strong economic growth and capital inflows are drawing attention to the risks of overheating in certain emerging market economies and asset markets. Emerging market external bond issuance reached record levels in 2010 and is on pace to exceed those levels in 2011 ***(Chart 7.1.16)***. Commodity markets have recently shown high volatility. While expected volatility is high in these markets, uncertainty exists about how ETFs and other products related to commodities would perform under stressed market conditions.

7.1.3 Financial Infrastructure

Council members have identified three components of the market infrastructure that require strengthening: (1) mortgage servicing, (2) derivatives, and (3) tri-party repo. Of the three, the weaknesses in the tri-party repo market are most likely to amplify current risks.

Industry initiatives are underway to address shortcomings in the tri-party repo market infrastructure by reducing the market's reliance on intraday credit provision by the clearing banks, but these efforts are unlikely to address all the structural weaknesses in the market, including dealer liquidity risk management, lender collateral management, and the market's resilience to investor runs and a potential dealer

Chart 7.1.17 Market and Funding Liquidity Spirals



Source: Brunnermeier and Pedersen (2009), Review of Financial Studies

failure. During the crisis, the lack of transparency and the pervasive belief that the clearing bank would always unwind a dealer's repos caused market participants to inaccurately assess the credit and liquidity risks inherent in their exposures, which contributed to the industry's fragility.

The fragility of market and funding liquidity and the constraints on the type of collateral certain investors (particularly MMFs) are prepared to take heighten the risk of contagion from the tri-party repo market. Many tri-party repo lenders, given their regulatory structure and investor base, still have a strong incentive to withdraw funding from a borrower at the first sign of distress, which can accelerate dealers' funding difficulties. For example, while MMF reform can help insulate these funds from runs by their investors, MMFs still have the incentive to pull away from a troubled dealer in the tri-party repo market because, in many cases, MMFs cannot take possession of the collateral in the event of a dealer default.

Other important classes of lenders, such as asset custodians administering securities lending programs, can also face significant liquidity demands from their clients under certain circumstances, which may make them unwilling or unable to hold pledged collateral. Regulators should ensure that the various participants in the tri-party repo market are implementing and sustaining the necessary improvements in their management of collateral to alleviate the risk of cash investor runs in this market.

Another risk to the tri-party repo market is the possibility of a dealer default. A dealer default would likely result in the sudden liquidation of a large amount of collateral by its counterparties, creating fire sale conditions in the underlying asset markets that could set damaging spirals in motion ***(Chart 7.1.17)***. The Tri-Party Repo Infrastructure Reform Task Force has called for tri-party repo lenders to develop plans and arrangements for liquidating collateral in the event of a default, but supervisory action is needed to ensure that such plans are developed and maintained. The Dodd-Frank

Act includes reforms intended to help ensure that the risks posed by institutions such as the large dealers in the tri-party repo market are managed prudently and subject to adequate oversight. Among other actions, when the Federal Reserve and FDIC finalize the new rules, most of the largest dealers in this market will be required to submit detailed resolution plans that will provide regulators with the tools and authority necessary to resolve a failed institution in a way that limits broader systemic impact and taxpayer cost. Additional actions by the regulatory community may be necessary to promote confidence that liquidation of collateral from a major dealer will proceed in an orderly manner.

7.2 Ongoing Challenges to Financial Stability

The financial system constantly evolves in response to changes in the environment in which financial institutions and market participants compete. Council members analyze the forces driving these changes in three categories: cyclical, secular, and regulatory. The Council closely monitors these forces and their effects on business models and product innovations, with a focus on understanding how financial activities could migrate to less-regulated corners of the financial system and give rise to imbalances and new vulnerabilities.

7.2.1 Cyclical Forces

Two years into a relatively weak economic recovery, the U.S. financial system is at an uncertain stage in the business cycle. Real estate markets have not recovered, and lending remains weak by historical standards. At some point, monetary policy will normalize and fiscal policy will consolidate, which has implications for financial institutions and markets.

While business investment and consumer spending have begun to improve, household net worth remains depressed and unemployment is elevated. Loan demand from households and nonfinancial corporations remains weak by historical standards. As discussed in Section 4.1, the weakness in the economy is due at least in part to a reduction in the supply of credit, as financial institutions attempted to reduce their leverage by selling assets, extending fewer new loans, and conserving capital.

Monetary policy will eventually normalize and fiscal consolidation will occur as the financial system and the real economy continue to heal from the financial crisis and the recession. The pace of these adjustments will have an impact on the economic prospects and business models of financial institutions. While banks' earnings will likely benefit in the short run as short-term interest rates and credit flows increase, in the long run, strategies that are profitable in a low-interest-rate environment may not work as well when rates rise.

As monetary policy normalizes, movements in the yield curve will affect financial institutions' net interest margins. Statistical analysis of historical patterns suggests that net interest margins for the industry as a whole will remain at or above current levels, under the assumption that financial institutions will not adjust the composition of their portfolios. Financial institutions—ranging from small credit unions and community banks to the largest, most complex institutions—increased their holdings of government securities and agency mortgage-backed securities as loan growth slowed. High levels of reserves have helped banks strengthen their balance sheets, but reserves will decline as monetary policy normalizes.

Banks experienced significant funding inflows from depositors attracted by the safety of insured deposits during the financial crisis. Typically, as short-term rates increase and risk appetites return to normal, some depositors will seek out the higher returns offered by MMFs and other short-term investments. Banks that are experiencing deposit outflows might have to raise their deposit rates or find alternative forms of funding, lowering their net interest margins. To mitigate that impact somewhat, banks can offer relatively low interest rates for some deposits because they offer important transaction services. But these outflows could be much larger than those that occurred after previous recessions, because depositor inflows have been more significant this time than during the spikes in the late 1980s and mid-1990s.

Alternatively, in an environment of weak economic growth, a prolonged period of low interest rates would have its own effects. It might encourage excessive risk taking, a decline in credit standards, and speculation. The longer short-term interest rates

remain at their lower bound, the more strain will be placed on the business models of MMFs and other cash pools, which might cause some investors to reach for yield in untested areas. The new rules on MMF maturity structure and quality of assets are intended to limit this reaction.

Another source of uncertainty is the real estate sector, on which many financial institutions' business models depended before the crisis. Most projections assume a long, slow recovery in residential and commercial real estate activity. Small and medium-sized financial institutions, which have less scope to diversify their business models from real estate, may find it difficult to identify new profit streams and may enter competitive markets with which they are relatively unfamiliar. Another key uncertainty is the path of transition back to a housing finance system with less government involvement.

As firms adapt their business models, Council members will assess changes in earnings strategies, including signs of reaching for yield that may come from softening underwriting standards or shifts into riskier markets. Monitoring underwriting standards and appropriate pricing for risk in these and other products will be a key focus for Council members.

7.2.2 Secular Forces

The financial system evolves in response to long-term trends. Two important trends are technological change and the increasing globalization of financial activity.

Technological progress in the financial industry is reflected in advances in firms' and markets' infrastructure and the introduction and development of new financial products, along with the analytical tools needed to value those products. Technological innovation can trigger dramatic changes in firms' business models, increase the interconnectedness of the system as a whole, and facilitate a much more globalized financial system. Financial product innovation is often motivated by the need to identify new profit streams in a competitive environment. Innovations can also be enabled by new analytical tools; for example, the introduction of option pricing theory led to growth in the options market in the 1970s, and new correlation models accelerated growth in the market for collateralized debt obligations of mortgage-backed securities in the pre-crisis period.

Such innovations can provide firms with new ways to transfer risks, undertake different forms of maturity transformation, and create leverage. They may also increase the complexity and opacity of the financial system. Financial institution risk managers and their supervisors need to carefully monitor the risks of new products. A constant threat comes from "model risk," which refers to the fact that model-based predictions of behavior often miss important changes. Almost by definition, the newest financial products are most exposed to model risk, because their lack of historical data presents challenges for model development or back-testing.

Another result of technological innovation is the advent of faster computers and the ability to accommodate more complex networks, which has enabled a surge in electronic trading in many markets ***(see Section 5.3.3)***. Under normal market conditions, the presence of electronic traders supports immediate and competitive execution of orders. However, the combination of speed and automatic execution creates risks. First, electronic trading occurs too quickly for human judgment to intercede. For example, the rapid pace of order execution is vulnerable to runaway processes. If the trading algorithms are not properly designed for these situations, the results may be far different than they would be if humans could intercede. Second, liquidity provided by electronic traders may deteriorate in stressed environments. Third, electronic trading enables strategies that can inhibit price discovery. For example, some trading algorithms seek out liquidity demand, presenting bids and offers into the market and then retracting them in a space of nanoseconds.

Technological innovation has allowed many transactions and payments to be completed electronically. While this lowers transactions costs, it has exposed the financial system to a new set of risks. Recently, federal regulators released updated guidance on how banks should guard against cybersecurity threats. The guidance is intended to help ensure that the financial system increases its protection against the evolving methods used to penetrate computer networks. The regulators

noted that successful cyberattacks have stolen hundreds of millions of dollars from online accounts by exploiting vulnerabilities in identifying the true account owner. The new guidance addresses these vulnerabilities.

Another secular trend is the rise of international banking. Foreign banks play an increasingly important role in U.S. financial markets. Moreover, certain globally operating institutions pose outsized risks to domestic and global markets, regardless of where they have their headquarters, owing to their size, complexity, and interconnections. The financial crisis illustrated the difficulty of resolving, in an orderly fashion, a failing financial institution that operates in many jurisdictions ***(see Box I: Addressing Issues Related to Large Complex Financial Institutions)***. Regulators are collaborating globally to address the systemic and moral hazards associated with these institutions through common regulatory standards, capital surcharges on the most systemically important global institutions, coordination among supervisors, and improvements to resolution regimes. For regulation of the global financial system to be effective, a cohesive regulatory framework across countries is crucial.

Globalization of finance is particularly relevant in the United States because of the role of the dollar as the international reserve currency and the fact that foreign financial institutions have large holdings of U.S. dollar-denominated assets. During the crisis, banks in other countries faced significant difficulties in continuing to fund their holdings of distressed U.S. assets, particularly housing-related securities. Similarly, distress in other countries can affect the U.S. financial system if banks in those countries experience widespread deposit runs or short-term funding withdrawals and are forced to sell U.S. dollar assets in large quantities.

7.2.3 Regulatory Forces

Innovations and changes in the financial system are significantly motivated by changes in the regulatory environment and, in turn, often require additional responses by regulators.

In the wake of the crisis, sweeping regulatory changes have been enacted in the United States and abroad to improve the resilience of the financial system; for example, through increased capital and liquidity standards. The designation of nonbank financial companies for supervisory oversight will enable regulators to impose capital, liquidity, and risk management standards on a wider set of firms. Accounting changes for asset-backed markets have helped reduce regulatory arbitrage in these products. The establishment of the Consumer Financial Protection Bureau will have a direct impact on the functioning of mortgage markets through the imposition of a suitability standard and changes in disclosure. Derivatives reform will require the use of central counterparties for standardized derivatives and increased transparency.

The largest financial institutions will be most influenced by regulatory forces, given their extensive role in the financial system. For example, derivatives reform will likely pressure the margins of dealers, which include several of the largest BHCs, as transparency and standardization are brought to this market. Implementation of the Volcker rule will also require changes in business models. Although these institutions should have enough flexibility to refine their core business activities, changes in their risk profiles must be carefully monitored.

The regulatory reforms that are most likely to affect the business models of the largest globally active financial firms and the structure of the global financial system are the new Basel III capital and liquidity rules. The significantly higher capital requirements for all internationally active banks, the capital surcharge framework for globally systemic banks, the higher risk weights on capital market activity and exposures to other large financial firms, the stricter definition of capital, the new international leverage ratio, and the new quantitative liquidity standards will cause global banks to reduce their interconnectedness, operate with larger capital and liquidity buffers, and otherwise lower their systemic footprint. This stricter regulatory regime will also create powerful incentives for global banks to restructure their internal operations, their capital bases, their funding profiles, and their transactions with other market participants to arbitrage the rules.

Council members expect that the combined impact of financial reform will be to improve financial stability. However, regulatory forces are bound to influence market dynamics in unpredictable ways;

care must be taken to ensure that these effects do not undermine the intent of the reforms. Product innovation may be driven by gaps or inconsistencies in the new regulatory framework, further highlighting the need for cooperation among regulators.

Changes in regulations can give rise to unintended consequences. Under the new regulatory regime, less regulated institutions are likely to find competitive advantages. As a general principle, similar activities should be subject to similar regulations, but applying this principle in a globally integrated financial system is challenging. For this reason, the United States is continuously engaged with its international partners. This engagement occurs through participation in the Financial Stability Board and G-20 working groups, as well as bilateral dialogues such as the U.S.-E.U. Financial Market Regulatory Dialogue. This ongoing engagement promotes consistency and is intended to create a "race to the top," so U.S.-based firms are not at a competitive disadvantage in the global marketplace. Council members will be attuned to the benefits and costs of existing and new regulations, and to the risk that financial market participants will respond by moving activities outside the U.S.-regulated core.

Glossary

Adjustable-Rate Mortgage (ARM)	A mortgage that allows for the periodic adjustment of the interest rate on the basis of changes in a specified index or rate.
Agency Mortgage-Backed Security	A mortgage-backed security issued or guaranteed by federal agencies or government-sponsored enterprises.
Asset-Backed Commercial Paper (ABCP)	Short-term debt that has a fixed maturity of up to 270 days and is backed by some financial asset, such as trade receivables, consumer debt receivables, or auto and equipment loans or leases.
Asset-Backed Security (ABS)	A debt instrument that is collateralized by specific financial assets that generate the cash flow used to service the debt instrument.
Auction Rate Security (ARS)	A debt security, often issued by municipalities, in which the yield is reset regularly via a Dutch auction.
Automated Clearing House (ACH)	An electronic clearing and settlement system for exchanging batches of electronic transactions among participating depository institutions; such electronic transactions are often substitutes for paper checks and may be used to make recurring payments, such as payroll or loan payments, or single payments, such as transferring funds between accounts or paying bills online. In the United States, the system or network has two operators: the Federal Reserve Banks and a private sector organization.
Available-for-Sale (AFS)	An accounting term for debt and equity securities that have readily determinable fair values and are not classified as trading securities or as held-to-maturity securities. Available-for-sale securities are accounted for at fair value on a company's balance sheet.
Bank for International Settlements (BIS)	An international financial organization that serves central banks in their pursuit of monetary and financial stability, helping to foster international cooperation in those areas and acting as a bank for central banks.
Bank Holding Company (BHC)	Any company that has direct or indirect control of one or more banks and is regulated and supervised by the Federal Reserve in accordance with the Bank Holding Company Act of 1956.

Basel Accords, Basel Standards	The Basel Committee on Banking Supervision (BCBS) develops and issues international standards on bank capital adequacy. In 1988 the BCBS introduced a capital measurement system commonly known as the Basel Capital Accord or Basel I. In 2004 the BCBS issued a revised capital adequacy framework titled "International Convergence of Capital Measurement and Capital Standards: A Revised Framework," which is commonly referred to as the New Accord, or Basel II. Following the financial crisis, the BCBS developed new global standards for the banking system that are collectively referred to as Basel III.
Broker-Dealer	An entity that is engaged in the business of buying and selling securities for itself and others.
Capitalization Rate	In commercial real estate, the ratio of net operating income from a property to its value.
Central Bank Reserves	In the United States, balances held at Federal Reserve Banks to satisfy reserve requirements, plus any balances held in excess of required reserve balances and contractual clearing balances.
Central Counterparty	An entity that is interposed between the initial participants to a bilateral transaction, and becomes the buyer to every seller and the seller to every buyer of a specified set of contracts or financial instruments.
Clearing Bank	A commercial bank that facilitates payment and settlement of financial transactions, such as check clearing or facilitating trades between the sellers and buyers of securities or other financial instruments or contracts.
Clearing House (Derivatives Clearing Organization or Clearing Agency)	An entity through which financial institutions agree to exchange payment instructions or other financial obligations (e.g., securities). The institutions settle for items exchanged at a designated time based on the rules and procedures of the clearing house. In some cases, the clearing house may assume significant counterparty, financial, or risk management responsibilities for the clearing system.
Clearing House Interbank Payments System (CHIPS)	An automated clearing system used primarily for international payments. This system is owned and operated by The Clearing House and engages Fedwire Funds Service for settlement.
Closed-End Fund	A type of investment company that issues a fixed number of nonredeemable shares that trade intraday in secondary markets at market-determined prices.

CLS Bank International (CLS)	A private-sector, special-purpose bank used for settling foreign exchange transactions to eliminate settlement risk on a gross, payment-versus-payment basis.
Collateralized Debt Obligation (CDO)	A type of structured asset-backed security that has tranches with distinct interest rates, payment flows, and risk levels.
Commercial Bank	A chartered and regulated financial institution authorized to take deposits from the public, obtain deposit insurance from the FDIC, and engage in certain lending activities.
Commercial Mortgage-Backed Security (CMBS)	A security that is collateralized by a pool of commercial mortgage loans and makes payments that are based primarily on the performance of those loans.
Commercial Paper (CP)	Short-term (maturity of up to 270 days), unsecured corporate debt.
Commercial Paper Funding Facility (CPFF)	A Federal Reserve funding facility that enhanced liquidity in the commercial paper markets by providing a liquidity backstop to U.S. issuers of commercial paper. The facility purchased three-month unsecured and asset-backed commercial paper directly from eligible issuers. The program was announced in October 2008 and was closed on February 1, 2010.
Committee on Payment and Settlement Systems (CPSS)	A committee of central banks hosted by the Bank for International Settlements that sets standards for payment and securities settlement systems.
Comprehensive Capital Analysis and Review (CCAR)	A cross-institution study, completed in March 2011, conducted by the Federal Reserve of the capital plans and capital planning processes of the 19 largest U.S. bank holding companies.
Confidential Supervisory Information	Generally refers to information consisting of reports of examination and inspection, confidential operating and condition reports, and any information derived from, relating to, or contained in them, and information gathered by agencies responsible for supervising financial institutions in connection with any investigation or enforcement action. Confidential supervisory information also may consist of documents prepared by, on behalf of, or for the use of such agencies.

Core Deposits	Deposits that are stable, lower cost, and reprice more slowly than other deposits when interest rates change. Core deposits are typically funds of local customers who also have a borrowing or other relationship with the bank.
Credit Default Swap (CDS)	A bilateral over-the-counter contract in which one party agrees to make a payment to the other party in the event of a specified credit event, in exchange for one or more fixed payments.
Credit Intermediation	The process of receiving funds in order to provide debt financing to third parties.
Credit Rating Agency	A private company that evaluates the credit quality of debt issuers as well as their issued securities and provides ratings on the issuers and those securities. Many credit rating agencies are nationally recognized statistical rating organizations, the largest of which are Fitch Ratings, Moody's Investors Service, and Standard & Poor's.
Credit Union	A member-owned, not-for-profit cooperative financial institution formed to permit members to save, borrow, and obtain related financial services. All federally chartered credit unions and most state-chartered credit unions provide federally insured deposits and are regulated by the NCUA.
Current Account Balance	The difference between a country's total exports and imports of goods, services, and transfers. Current account balance calculations exclude transactions in financial assets and liabilities.
Dark Pool	A trading network that matches the orders of multiple buyers and sellers for a financial instrument without displaying quotations to the public.
Debt Guarantee Program (DGP)	One of two components of the FDIC's Temporary Liquidity Guarantee Program. The DGP provided liquidity through an FDIC guarantee of certain types of senior unsecured debt issued by participating entities. Participating entities could issue FDIC-guaranteed debt through October 31, 2009, with maturities lasting through December 31, 2012.
Defined Benefit Plan	A retirement plan that uses a predetermined formula to calculate the amount of a participant's future benefit.
Defined Contribution Plan	A retirement plan in which the amount of the employer's annual contribution is specified.
Deposit Insurance Fund (DIF)	The fund managed by the FDIC to pay deposit insurance claims on failed banks, financed through assessments paid by FDIC-insured depository institutions.

Deposit Insurance Limit	The standard maximum deposit insurance amount granted to each depositor, per insured bank, for each account ownership category.
Depository Institution	A financial institution that is legally permitted to accept deposits. Depository institutions include savings banks, commercial banks, savings and loan associations, and credit unions.
Discount Window	The Federal Reserve facility for extending credit directly to eligible institutions.
Dividend Recapitalization	A transaction in which debt is used to finance a company's dividend payment, often in the form of a special one-time payment.
European Stability Mechanism (ESM)	A European intergovernmental crisis financing facility that will be activated in 2013, following ratification of an amendment to the EU treaties. The ESM will be backed by €80 billion in paid-in capital and €620 billion of callable capital by euro area member states, and will have a €500 billion lending capacity. The ESM will be permitted to lend only to Eurozone sovereigns in the context of an adjustment program, and all lending decisions must be made by unanimous agreement by creditor states.
Exchange Traded Note (ETN)	Senior unsecured debt securities issued by a firm. These structured notes are listed and traded on securities exchanges and offer returns based on exposure to different underlying assets.
Farm Credit System	A government-sponsored enterprise created by Congress and composed of a network of borrower-owned financial institutions that provide credit to farmers, ranchers, residents of rural communities, agricultural and rural utility cooperatives, and other eligible borrowers. The Farm Credit System is the largest agricultural lender in the United States and is regulated by the Farm Credit Administration.
Fedwire Funds Service	A real-time gross settlement system owned and operated by the Federal Reserve Banks that offers participants the ability to send and receive time-critical payments for their own account or on behalf of their clients.
Fedwire Securities Service	A book-entry securities transfer system operated by the Federal Reserve Banks that provides participants safekeeping, transfer, and delivery-versus-payment settlement services.
FICO Score	A measure of a borrower's creditworthiness based on the borrower's credit data; developed by the Fair Isaac Corporation.

Financial Market Infrastructure	A multilateral system among participating financial institutions, including the operator of the system, used for the purposes of recording, clearing, or settling payments, securities, derivatives, or other financial transactions. Financial market infrastructures exist in many financial markets to support and facilitate the transferring, clearing, or settlement of financial transactions.
Financial Market Utility (FMU)	Subject to certain exclusions, the Dodd-Frank Act defines an FMU as "any person that manages or operates a multilateral system for the purpose of transferring, clearing, or settling payments, securities, or other financial transactions among financial institutions or between financial institutions and the person."
Fiscal Consolidation	Government policy aimed at reducing government deficits and the pace of debt accumulation.
Fiscal Year (FY)	Any 12-month accounting period. The fiscal year for the federal government begins on October 1 and ends on September 30 of the following year; it is named after the calendar year in which it ends.
Fixed-Rate Mortgage	A mortgage loan in which the interest rate does not change during the term of the loan.
Floating Rate Note	A debt instrument with a variable interest rate.
General Obligation (G.O.) Bond	A type of municipal bond backed by the full faith and credit of the governmental unit that issues the bond.
Government-Sponsored Enterprise (GSE)	A corporate entity that has a federal charter authorized by law but that is a privately owned financial institution.
Gross Domestic Product (GDP)	The broadest measure of aggregate economic activity, measuring the total value of all final goods and services produced within a country's borders during a specific period.
The Group of Twenty Finance Ministers and Central Bank Governors (G-20)	An international forum established in 1999 to bring together officials of systemically important industrialized and developing economies to discuss key issues in the global economy.
Held-to-Maturity (HTM)	An accounting term for debt securities held in portfolio and accounted for at cost, under the proviso that the company has the positive intent and ability to hold those securities to maturity.

Household Debt Service Ratio	An estimate of the ratio of debt payments to disposable personal income. Debt payments consist of the estimated required payments on outstanding mortgage and consumer debt.
Interest Rate Risk	The exposure of an individual's or an institution's financial condition to movements in interest rates.
International Organization of Securities Commissions (IOSCO)	An international organization of securities market regulatory agencies that sets standards for securities markets.
Investment-Grade Security	A security whose rating is among the highest in credit-worthiness as measured by credit rating agencies.
Large Bank Holding Company	Any bank holding company (BHC) that files the FR Y-9C. All BHCs with total consolidated assets of $500 million or more are required to file. Before March 2006, the threshold was $150 million. BHCs meeting certain additional criteria determined by the Federal Reserve may also be required to file regardless of size.
Leveraged Buyout (LBO)	An acquisition of a company in which the buyer uses borrowed funds for a significant portion of the purchase price.
Leveraged Loan	A loan or revolving credit facility provided to a borrower that is carrying a high debt burden.
LIBOR-OIS Spread	The difference between LIBOR and an OIS rate of a similar term, which serves as a measure of market pricing of the credit and liquidity risk in term, unsecured interbank lending. The LIBOR-OIS spread is widely viewed as a barometer of stress in money markets.
Loan-to-Value Ratio (LTV)	The ratio of the amount of a loan to the value of an asset, typically expressed as a percentage. This is a key metric when considering the financing of a mortgage.
London Interbank Offered Rate (LIBOR)	The interest rate at which banks can borrow unsecured funds from other banks in London wholesale money markets, as measured by daily surveys of the British Bankers' Association. The published rate is a trimmed average of the rates obtained in the survey.
Loss-Sharing Arrangement	A method in a purchase and assumption transaction in which the seller agrees to share with the acquirer losses on certain types of assets. The seller usually agrees to absorb a significant portion of future disposition losses on covered assets. The economic rationale for such transactions is that retaining loss share assets in the banking sector would produce a better net recovery than the seller's liquidation of the assets.

Maastricht Treaty	The treaty establishing the European Union, enacted in 1993. The Maastricht Treaty laid the basis for a common currency (the euro) and the European Central Bank. Subsequently amended (most recently by the Lisbon Treaty), the Maastricht Treaty lays out the basic policymaking responsibilities of member states, the European Commission, and the European Parliament.
Macroprudential Regulation	Regulation aimed at promoting the stability of the financial system as a whole rather than individual institutions.
Marketable Debt	Obligations that can be bought and sold on public secondary markets.
Mark-to-Market	The process by which the reported value of an asset is adjusted to reflect its market value.
Maturity Transformation	A condition in which a financial intermediary issues shorter-term liabilities to fund longer-term assets.
Model Risk	Risk related to using an incorrect model specification. For example, misspecification can be due to programming errors, technical errors, data issues, or calibration errors.
Money Market Fund (MMF)	A type of mutual fund that is required by law to invest in low-risk securities and pays dividends that generally reflect short-term interest rates. MMFs typically invest in government securities, certificates of deposit, commercial paper, or other highly liquid and low-risk securities.
Mortgage Servicer	A company that acts as an agent for mortgage holders by collecting and distributing mortgage cash flows. Servicers also handle defaults, modifications, settlements, and foreclosure proceedings.
Mortgage-Backed Security (MBS)	An asset-backed security backed by a pool of mortgages. Investors in the security receive payments derived from the interest and principal payments on the underlying mortgages.
Municipal Bond	A bond issued by states, cities, counties, local governmental agencies, or certain nongovernment issuers.
Mutual Fund	A type of investment company that issues redeemable securities, which the fund generally stands ready to buy back from investors at their current net asset value. Also called an open-end investment company or open-end fund.

Nationally Recognized Statistical Rating Organization (NRSRO)	A credit rating agency that is registered with the SEC as an NRSRO.
Overnight Indexed Swap (OIS)	An interest rate swap that serves as a measure of investor expectations of an average effective overnight rate over the term of the swap.
Over-the-Counter (OTC)	A method of trading that does not involve an organized exchange. In over-the-counter markets, participants trade directly with each other, typically through voice or computer communication.
Private-Label Mortgage-Backed Security	In housing finance, a mortgage-backed security or other bond created and sold by a company other than a government-sponsored enterprise (GSE). The security often is collateralized by loans that are ineligible for purchase by a GSE.
Prudential Regulation	Regulation aimed at ensuring the safe and sound operation of financial institutions, set by both state and federal authorities.
Public Debt	Cumulative amounts borrowed by the Treasury Department or the Federal Financing Bank from the public or from another fund or account. The public debt does not include agency debt (amounts borrowed by other agencies of the federal government).
Ratings Uplift	The difference between the stand-alone credit rating assigned by a credit rating agency to an issuer, based on that issuer's intrinsic financial strength, and the higher credit rating that considers the possibility of implicit external (e.g., government) support.
Real Estate Mortgage Investment Conduit	A type of multiclass mortgage-backed security in which interest and principal payments from the underlying mortgages are structured into separately traded securities.
Receiver	A custodian appointed to maximize the value of the assets of a failed institution or company, and to settle the liabilities.
Recourse Obligation	An obligation for which the lender has a legal right to seek repayment from a borrower if the collateral is insufficient to pay the debt in full.
Repurchase Agreement (Repo)	A transaction in which one party sells a security to another party while agreeing to repurchase it from the counterparty at some date in the future, at an agreed price.

Reserve Requirements	The amount of funds that a depository institution must hold in reserve against specified deposit liabilities. In the United States, within limits specified by law, the Federal Reserve has authority over changes in reserve requirements. Depository institutions must hold reserves in the form of vault cash or deposits with Federal Reserve Banks.
Residential Mortgage-Backed Security (RMBS)	A security that is collateralized by a pool of noncommercial, residential mortgage loans and makes payments that are based primarily on the performance of those loans.
Revenue Bond	A type of municipal bond backed by revenue from the project the bond finances.
Revolving Credit	A lending arrangement whereby a lender commits to provide a certain amount of funding to a borrower on demand. The borrower may generally borrow and repay the committed funding at any time over the term of the agreement.
Risk-Based Capital	An amount of capital, based on the risk-weighing of various asset categories, that a financial institution should hold to protect against adverse developments.
Secured Lending	Lending in which the borrower pledges collateral to the lender to secure repayment of the loan.
Securities Lending/ Borrowing	The temporary transfer of securities from one party to another for a specified fee and term, in exchange for collateral in the form of cash or securities.
Securitization	A financial transaction in which assets such as mortgage loans are pooled, and securities representing interests in the pool are issued.
Self-Regulatory Organization (SRO)	An organization that has the authority to regulate its members by establishing and enforcing rules and standards regarding its members' conduct.
Settlement Risk	The risk that settlement of a transaction in a transfer system will not take place as expected. In foreign exchange, this is the risk that one party will pay out the currency it sold but not receive the currency it bought. This risk may comprise both credit and liquidity risk. In the settlement process, this term is typically associated with exchange-for-value transactions when there is a lag between the final settlement of the various legs of a transaction (i.e. the absence of delivery versus payment).

Short-Term Wholesale Funding	Large-value, short-term funding instruments, exceeding deposit insurance limits, that are typically issued to institutional investors. Examples include large checkable and time deposits, financial open market paper, and repurchase agreements.
Structured Note	An unsecured debt instrument that has a derivative element. The return on structured notes is based in part on the performance of one or more underlying reference assets, such as equities, commodities, or interest rates. Structured notes remain recourse obligations of the issuer and are subject to default risk.
Stub Quote	An offer to buy or sell a stock at a price so far away from the prevailing market price that it is not intended to be executed, such as an order to buy at a penny or an offer to sell at $100,000.
Supervisory Capital Assessment Program (SCAP)	A stress test, conducted from February to May 2009, designed to estimate the capital needs of U.S. bank holding companies with assets exceeding $100 billion under an adverse macroeconomic scenario; it was administered by the Federal Reserve, OCC, and FDIC.
Synthetic Collateralized Debt Obligation	A collateralized debt obligation, issued by an entity that holds credit default swaps on reference assets (rather than holding the reference assets themselves), that allows investors to gain exposure to those reference assets.
System Open Market Account (SOMA)	The SOMA consists of the Federal Reserve's domestic and foreign portfolios, which include both dollar-denominated and euro and yen-denominated assets, in addition to reciprocal currency arrangements made with foreign institutions. The Federal Open Market Committee (FOMC) has selected the Federal Reserve Bank of New York to execute open market transactions, using the SOMA portfolio, to implement monetary policy and foreign exchange intervention at the direction of the FOMC.
Systemic Risk Determination	Upon the written recommendation of two-thirds of the FDIC Board and two-thirds of the Federal Reserve Board, the Secretary of the Treasury (in consultation with the President) determines that conformance with least-cost resolution would have serious adverse effects on economic conditions or financial activity before the FDIC is allowed to take action other than least-cost resolution or provide assistance as necessary to avoid or mitigate such effects.
Temporary Liquidity Guarantee Program (TLGP)	A program implemented in October 2008 by the FDIC through a systemic risk determination to provide liquidity to the banking industry by restoring banks' access to funding markets and by stabilizing bank deposits. The program had two components: the Debt Guarantee Program and the Transaction Account Guarantee Program.

Tender Option Bond (TOB)	An obligation, also known as a "put bond" or "puttable security," that grants the bondholder the right to require the issuer or a specified third party acting as agent for the issuer (such as a tender agent) to purchase the bond, usually at par, at a certain time or times prior to maturity or upon the occurrence of specified events or conditions.
Term Asset-Backed Securities Loan Facility (TALF)	A Federal Reserve funding facility that issued loans with terms of up to five years to holders of eligible asset-backed securities (ABS). TALF was intended to assist the financial markets in accommodating the credit needs of consumers and businesses by facilitating the issuance of ABS collateralized by a variety of consumer and business loans. TALF was also intended to improve the market conditions for ABS more generally. The program was announced in November 2008. The facility ceased making loans collateralized by newly issued commercial mortgage-backed securities on June 30, 2010, and loans collateralized by all other types of TALF-eligible newly issued and legacy ABS on March 31, 2010.
Term Auction Facility (TAF)	The program in which the Federal Reserve made term funds, at either 28- or 84-day maturity, available to all eligible depository institutions through a regular auction that determined the interest rate. The facility was announced in December 2007, and the final auction was held in March 2010.
Term Loan	A loan granted by a commercial bank, insurance company, or commercial finance company for a fixed term.
Thrift	A financial institution that ordinarily possesses the same depository, credit, financial intermediary, and account transactional functions as a bank, but that is chiefly organized and primarily operates to promote savings and home mortgage lending rather than commercial lending. Also known as a savings bank, a savings association, or a savings and loan association.
Time Deposits	Deposits which the depositor, generally, does not have the right to withdraw funds before a designated maturity date without paying an early withdrawal penalty. A certificate of deposit is a time deposit.
Trading Securities	An accounting term for debt and equity securities that are bought and held principally for the purpose of selling them in the near term. Trading securities are accounted for at fair value, with unrealized gains and losses included in earnings.
Tranche	A claim on a portion of the cash flows from an underlying asset or pool of assets defined by its risk, maturity, or other characteristics.
Transaction Account Guarantee Program (TAGP)	One of two components of the FDIC's Temporary Liquidity Guarantee Program. The TAGP provided liquidity by guaranteeing all funds held in certain noninterest-bearing transaction accounts at participating insured depository institutions through December 31, 2010.

Tri-Party Repo	A repurchase agreement in which a third party agent, such as a clearing bank, acts as an intermediary to facilitate the exchange of cash and collateral between the two counterparties. In addition to providing operational services to participants, the tri-party agents in the U.S. tri-party repo market extend large amounts of intraday credit to facilitate the daily settlement of tri-party repos.
Troubled Asset Relief Program (TARP)	A government program to address the financial crisis, authorized by the Emergency Economic Stabilization Act of 2008, allowing the government to purchase or insure up to $700 billion in assets and equity from financial institutions.
Underwriting Standards	Terms, conditions, and criteria used to determine the extension of credit in the form of a loan or bond.
Yield Curve	A curve mapping the relationship between bond yields and their respective maturities.

Abbreviations

ABCP	Asset-Backed Commercial Paper
ABS	Asset-Backed Security
ACH	Automated Clearing House
AFS	Available-for-Sale
AMLF	ABCP Money Market Mutual Fund Liquidity Facility
ANPR	Advance Notice of Proposed Rulemaking
ARM	Adjustable-Rate Mortgage
ARS	Auction Rate Security
ASC	Accounting Standards Codification
BAB	Build America Bonds
BAC	Bank of America
BCBS	Basel Committee on Banking Supervision
BEA	Bureau of Economic Analysis
BHC	Bank Holding Company
BIS	Bank for International Settlements
BLS	Bureau of Labor Statistics
C	Citigroup
C&I (Loans)	Commercial and Industrial (Loans)
CBO	Congressional Budget Office
CCAR	Comprehensive Capital Analysis and Review
CDO	Collateralized Debt Obligation

CDS	Credit Default Swap
CFPB	Bureau of Consumer Financial Protection
CFTC	Commodity Futures Trading Commission
CHIPS	Clearing House Interbank Payments System
CLS	CLS Bank International
CMBS	Commercial Mortgage-Backed Security
CP	Commercial Paper
CPFF	Commercial Paper Funding Facility
CPSS	Committee on Payment and Settlement Systems
CRE	Commercial Real Estate
DCE	Designated Clearing Entity
DGP	Debt Guarantee Program
DIF	Deposit Insurance Fund
DTCC	Depository Trust and Clearing Corporation
DVP	Delivery Versus Payment
EFSF	European Financial Stability Facility
EFSM	European Financial Stability Mechanism
EME	Emerging Market Economies
ESM	European Stability Mechanism
ETF	Exchange Traded Fund
ETN	Exchange Traded Note
EU	European Union
FBO	Foreign Banking Organization
FDIC	Federal Deposit Insurance Corporation
FHA	Federal Housing Administration
FHFA	Federal Housing Finance Agency

FHLB	Federal Home Loan Bank
FICO	Fair Isaac Corporation
FIO	Federal Insurance Office
FMU	Financial Market Utility
FOMC	Federal Open Market Committee
FRB	Federal Reserve Board
FRBNY	Federal Reserve Bank of New York
FSB	Financial Stability Board
FSOC	Financial Stability Oversight Council
FY	Fiscal Year
G.O. (Bond)	General Obligation (Bond)
G-20	The Group of Twenty Finance Ministers and Central Bank Governors
GDP	Gross Domestic Product
GS	Goldman Sachs
GSE	Government-Sponsored Enterprise
HTM	Held-to-Maturity
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
JPM	JPMorgan Chase
LBO	Leveraged Buyout
LCFI	Large Complex Financial Institution
LEI	Legal Entity Identifier
LIBOR	London Interbank Offered Rate
LTV	Loan-to-Value Ratio
M&A	Mergers and Acquisitions
MBS	Mortgage-Backed Security

MMF	Money Market Fund
MMIFF	Money Market Investor Funding Facility
MS	Morgan Stanley
NAIC	National Association of Insurance Commissioners
NAICS	North American Industry Classification System
NAV	Net Asset Value
NBER	National Bureau of Economic Research
NCUA	National Credit Union Administration
NFIB	National Federation of Independent Business
NFNR	Nonfarm Nonresidential
NMLS	Nationwide Mortgage Licensing System and Registry
NPR	Notice of Proposed Rulemaking
NRSRO	Nationally Recognized Statistical Rating Organization
NSA	Not Seasonally Adjusted
NSCC	National Securities Clearing Corporation
OCC	Office of the Comptroller of the Currency
OECD	Organisation for Economic Co-operation and Development
OFR	Office of Financial Research
OIS	Overnight Indexed Swap
OLA	Orderly Liquidation Authority
OTC	Over-the-Counter
OTS	Office of Thrift Supervision
PDCF	Primary Dealer Credit Facility
REIT	Real Estate Investment Trust
Repo	Repurchase Agreement
RMBS	Residential Mortgage-Backed Security

RTGS	Real-Time Gross Settlement
RWA	Risk-Weighted Assets
S&P	Standard & Poor's
SA	Seasonally Adjusted
SAAR	Seasonally Adjusted Annual Rate
SCAP	Supervisory Capital Assessment Program
SCOOS	Senior Credit Officer Opinion Survey
SEC	Securities and Exchange Commission
SLOOS	Senior Loan Officer Opinion Survey
SOMA	System Open Market Account
SPV	Special Purpose Vehicle
SRC	Systemic Risk Committee
SRO	Self-Regulatory Organization
TAF	Term Auction Facility
TAGP	Transaction Account Guarantee Program
TALF	Term Asset-Backed Securities Loan Facility
TARP	Troubled Asset Relief Program
TIPS	Treasury Inflation Protected Securities
TLGP	Temporary Liquidity Guarantee Program
TOB	Tender Option Bond
TOP	Term Securities Lending Facility Options Program
TSLF	Term Securities Lending Facility
VA	Department of Veterans Affairs
WFC	Wells Fargo

Notes on the Data

Except as otherwise indicated, data cited in this report is as of July 18, 2011.

Glossary of certain government data sources:

FFIEC 002: Federal Financial Institutions Examination Council report of balance sheet and off–balance sheet information for U.S. branches and agencies of foreign banks.

Flow of Funds: Data release compiled and published by the Federal Reserve.

FR 2004: Report of market activity for primary dealers in U.S. government securities published by the Federal Reserve.

FR G-19: Statistical release published by the Federal Reserve.

FR Y-9C: Consolidated financial statement for domestic bank holding companies published by the Federal Reserve.

SCOOS: Survey of senior credit officers on availability and terms of credit conducted and published by the Federal Reserve Board.

SLOOS: Survey of senior loan officers on bank lending practices conducted and published by the Federal Reserve Board.

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Certain data was obtained through Haver Analytics.

Moody's data provided by Moody's Investors Service.

Tri-Party Repo Infrastructure Reform Task Force: Industry working group sponsored by the Federal Reserve Bank of New York to address vulnerabilities in the tri-party repo market.

List of Charts

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