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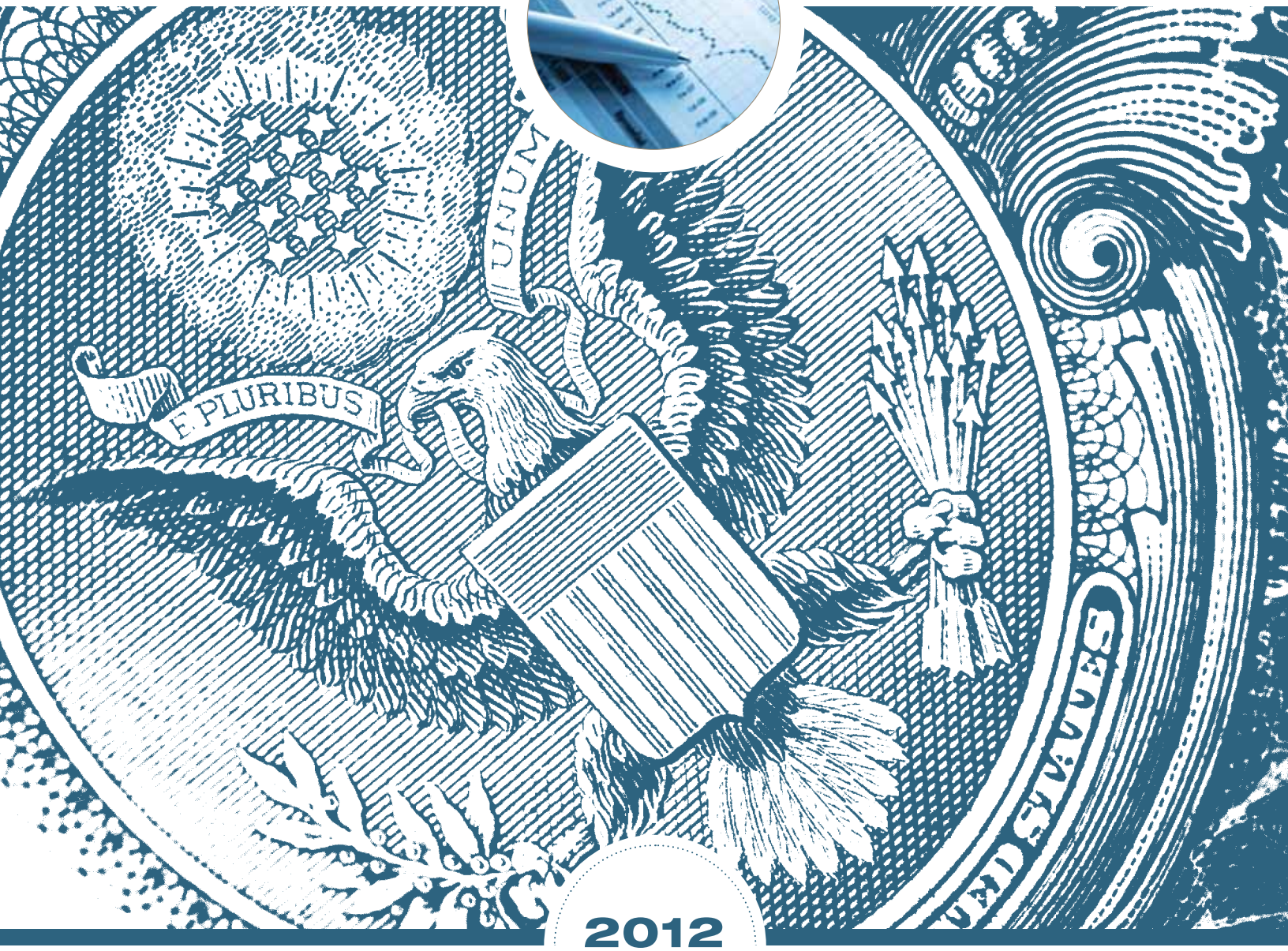
FINANCIAL STABILITY OVERSIGHT COUNCIL



2012

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; 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 an 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 Section 113 or Title VIII, and the basis for such determinations;
v. all recommendations made under Section 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 18, 2012. Except as otherwise indicated, data cited in this report is as of July 6, 2012.

Abbreviations for Federal Member Agencies of the Council

- Department of the Treasury (Treasury)
  - Office of Financial Research (OFR)
  - Federal Insurance Office (FIO)
- 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 (NCUA)

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

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

The Honorable Nancy Pelosi
Democratic Leader
United States House of Representatives

The Honorable Harry Reid
Majority Leader
United States Senate

The Honorable Mitch McConnell
Republican 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

Thomas J. Curry
Comptroller of the Currency
Office of the Comptroller of the Currency

Richard Cordray
Director
Bureau of Consumer Financial Protection

Mary L. Schapiro
Chairman
Securities and 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

S. Roy Woodall, Jr.
Independent Member with Insurance Expertise
Financial Stability Oversight Council

2 Executive Summary

In the nearly five years since the initial strains of the subprime crisis emerged, the U.S. financial system has traveled from the brink of collapse in late 2008 and early 2009 to a more resilient system with stronger capital, more liquidity, improved funding, and important progress on reform. Even with that progress, however, the Financial Stability Oversight Council (Council) believes that the financial system in the United States and globally still faces significant challenges. Investor confidence has not been restored to pre-crisis levels. The crisis in the euro area and general weakness in global economic growth present identifiable threats to financial stability. There is still work to be done to address structural vulnerabilities within the financial system itself.

A key feature of the current environment is the stress in the euro area, which has disrupted sovereign debt markets and put considerable pressure on euro area banks. European leaders recognize the need to address near-term strains and are continuing to elaborate a path toward greater fiscal and financial union that would garner both political and market support. Because the combined economies of the euro area constitute the second largest economy in the world and are home to many of the world's largest and most interconnected financial institutions, problems in Europe could have very real consequences for financial stability in the United States.

The potential threats from the crisis in Europe and continued economic weakness in the United States and globally underscore the need for regulators to continue strengthening the financial system and addressing structural vulnerabilities. Such reforms are essential to ensure that financial markets continue to serve the real economy even during periods of stress. Reducing amplification mechanisms and strengthening shock-absorbing capacity make the financial system more resilient, whether shocks originate from inside or outside the system. This increased resilience in turn can reduce, though not eliminate, the impact these shocks deliver to economic activity and employment. More broadly, a sound financial system is a necessary foundation for sustained growth.

Both our financial health and our reform efforts are inextricably linked to the rest of the world. The very complexity of the global financial system makes designing and implementing effective reforms an inherently challenging process that at times moves more slowly than would be the case if we acted alone. International coordination is necessary, however, as there are key areas where the effectiveness of the U.S. reforms will depend on a level playing field with strong and consistent regulatory regimes internationally.

Macroeconomic Environment

Three years after the end of the deepest and longest recession since the Great Depression, the U.S. economy is expanding at a moderate pace, but growth has not accelerated to the rate required to make rapid progress replacing lost jobs

and meeting the employment needs of a growing workforce. Consequently, while unemployment has trended down, it remains at unacceptably high levels.

Investment spending in the first half of 2012 appears to be growing at a restrained pace, likely reflecting continued subdued confidence and elevated uncertainty. Corporate balance sheets are generally strong, and large businesses have access to ample financing in the capital markets. Smaller businesses, in contrast, continue to face a more challenging operating environment that has constrained their recovery.

Consumption continues to expand, but U.S. households still see only modest growth in income. Housing remains a drag on household balance sheets and weighs on broader economic activity, as housing wealth has declined by 50 percent or $6.8 trillion from its peak in 2006:Q1 to 2012:Q1. Aggregate household debt is declining gradually, but remains well above historical levels as a percentage of GDP. Access to mortgage credit is still constrained for many households, limiting the extent to which they can benefit from low interest rates. Overall, the mortgage market remains dependent on the Federal Housing Administration and the government-sponsored enterprises (GSEs). Housing activity remains weak, but there are some positive signs emerging in recent data.

Fiscal policy is no longer providing support to growth as it did in 2009-2010, and the federal deficit is declining as a share of GDP. In addition, states and localities are a drag on demand and employment as they struggle to repair their finances. However, the U.S. government has benefited from very low interest costs, a factor that will reverse over time as monetary policy normalizes.

In the long run, U.S. budgetary trends are unsustainable and must be addressed in a manner that is consistent with supporting the ongoing recovery. The aging of the population and the rising costs for health care will add to long-term deficits. States and localities remain challenged by unfunded pension obligations.

Abroad, growth in Europe has slowed sharply as GDP has declined in a number of nations. Growth in most emerging market economies (EMEs) remains high relative to the industrialized world, but has been slower of late, with more variation in performance. EMEs, particularly China, have taken an increasingly important role in the global economy. However, dependence on export and investment-led growth leaves many of these economies exposed to weaker prospects in the developed world. Weak global growth limits the self-healing capacity of financial institutions and can put stress on parts of the financial system.

Financial Developments

Market volatility increased sharply in the summer and fall of 2011 around the U.S. debt ceiling debate, and intensified at the end of 2011 and in the spring and early summer of 2012 amid concern over Europe. The debt limit debate and questions about the political will to resolve U.S. fiscal challenges led Standard and Poor's to downgrade the long-term sovereign credit rating of the United States from AAA to AA+ in August 2011. However, demand for U.S. sovereign debt remains strong. As sovereign bond yields in the euro area periphery

increased, sovereign yields in the United States, Japan, the United Kingdom and Germany declined further and are now at historically low levels. These low yields reflect both safe-haven inflows as well as expectations that global economic weakness may warrant prolonged monetary policy accommodation. Extraordinarily low interest rates provide essential support to growth and jobs, but this low-growth, low-rate environment represents a challenge for life insurers, pension funds, money market funds (MMFs), and some banks and credit unions, which invest the savings of many Americans.

Financial stress in Europe and consequent spillovers to the United States has been mitigated to some degree by the aggressive provision of liquidity within the euro area. In the initial stages of the crisis, the European Central Bank (ECB) purchased peripheral sovereign debt directly. U.S. dollar swap lines were extended and their fees reduced, and the ECB conducted two large longer-term refinancing operations and authorized further financing under the Emergency Liquidity Assistance process for banks in the hardest-hit countries.

U.S. financial institutions have strengthened their balance sheets by augmenting their capital levels and by accumulating more liquid assets. They also have more stable funding profiles than in recent years, with greater use of deposits and less reliance on short-term wholesale funding. The number of bank failures has been decreasing since 2010, and the FDIC's list of problem banks is shrinking.

Within the euro area, a number of banking systems remain under stress. Recently, the Spanish government announced plans to strengthen its bank recapitalization fund with EU support. In late June 2012, euro area heads of government proposed to allow the European Stability Mechanism (ESM) to recapitalize banks directly, rather than through national governments, and to establish a single European banking supervisor. At a subsequent meeting on July 9, euro area finance ministers welcomed the European Commission's intention to present proposals in early September for a single supervisory mechanism involving the ECB, with the European Council expected to consider these proposals by the end of 2012.

Meanwhile, European financial institutions are reducing their share of lending activity—including sovereign debt purchases—in other euro area states. Cross-border financing of current account deficits by private sector financial institutions in core Europe has declined. Official sector funding, notably in the form of ECB loans to banks in peripheral Europe, is making up for this decline.

Periods of risk aversion in short-term funding markets, particularly in the fall of 2011, have only reinforced the need to promptly address sources of vulnerability in these markets, such as weaknesses in the tri-party repo infrastructure and among money market funds. Over the past year, the U.S. tri-party repo market continued to shift away from non-traditional, riskier collateral towards Treasury and agency obligations. However, limited progress has been made in substantially reducing the reliance of this market on intraday credit or improving risk-management and collateral practices to avoid fire sales in the event of a large dealer default. Money market funds continue to maintain short weighted average

maturities and have shifted their portfolio composition more toward government debt and repurchase agreements, although they retain some exposure to riskier assets. As highlighted last year, money market funds remain susceptible to destabilizing runs because the commitment to a stable net asset value, without the requisite buffers to absorb losses, gives investors, particularly institutional investors, an incentive to be the first movers in redeeming shares.

Meanwhile, advances in technology continue to transform the business of trading, providing financial markets with enhanced speed and efficiency while potentially enabling increased transparency. The market infrastructure has generally functioned well over the past year. Still, the trend towards high-speed algorithmic trading, and the resulting increases in market complexity, may create vulnerabilities like those witnessed in the "flash crash" of 2010.

Dodd-Frank Implementation and Activities of the Financial Stability Oversight Council

Over the past year, financial regulators have focused on strengthening the financial system against potential threats and eliminating incentives to take excessive risk. These efforts are most notable in steps to implement the Dodd-Frank Act. The financial reforms in the Dodd-Frank Act are designed to create a more resilient financial system that is better able to absorb a wide range of shocks, whether they originate within the financial system (as with the subprime crisis of 2007), outside it (for instance in the event of an oil price shock), or a combination of the two (as is the case with the problems in the euro area). Regulators are making progress in implementing the Dodd-Frank Act in a consistent and coordinated manner. The reform effort has proceeded along four broad dimensions: strengthening the safety and soundness of core financial institutions; making financial markets more resilient and transparent; implementing new authorities to resolve large, complex financial institutions; and enhancing investor and consumer protections.

As a result of this effort, federal banking regulators have imposed tougher standards on the largest, most complex financial institutions. The Federal Reserve has proposed enhanced prudential standards for large bank holding companies—standards that will also apply to nonbank financial companies designated by the Council for Federal Reserve supervision. Through the Comprehensive Capital Analysis and Review (CCAR) process, it evaluated bank holding companies' capital planning processes to ensure that they would remain well capitalized in a stressed economic scenario. In addition, the Federal Reserve, FDIC, OCC, SEC, and CFTC proposed substantively identical proposals to implement the Volcker Rule, which prohibits banks from engaging in proprietary trading, and (subject to certain exemptions) from owning, sponsoring, or having certain relationships with, a hedge fund or private equity fund. In June 2012, federal banking regulators finalized changes to the market risk capital rule to better reflect the risks faced by an institution and to help ensure the adequacy of capital related to an institution's trading positions. Concurrently, they invited comment on three joint proposed rules to implement Basel III and the Dodd-Frank Act that will increase the amount of high-quality capital banks are required to hold relative to their risk exposures.

Regulators led by the FDIC have also taken important steps to build a framework under the "orderly liquidation authority" (OLA) that could be used to resolve a large failing financial company in cases where normal bankruptcy would have serious adverse effects on financial stability in the United States. The purpose of OLA is to ensure that in the event of a big financial company's failure the cost is borne by its shareholders and creditors and not the U.S. taxpayer. Establishing the framework under OLA and progressively working through the many practical issues required to implement this authority is essential to end the perception that some financial companies are "too big to fail" and to address other moral hazard problems. The Dodd-Frank Act also requires the largest bank holding companies to produce resolution plans or "living wills" to explain how they could be resolved in an orderly manner if they failed. In July 2012 the first such plans were submitted to the Federal Reserve and the FDIC.

A stable financial system also requires resilient and transparent markets. To this end, the CFTC and SEC have proposed and begun to finalize rules that will provide, for the first time, a comprehensive regulatory framework for the over-the-counter derivatives market. The CFTC and SEC have adopted final rules that provide precise definitions of the instruments and entities to be covered. The CFTC has adopted rules that increase market transparency for both the public and regulators; provide for centralized reporting of trades; require swap dealers to establish risk-management policies; and require swap dealers to interact fairly with customers in their sales practices. In addition, the CFTC has completed rules related to designated contract markets, which will be able to list and trade swaps, and position reporting rules for physical commodity swaps. Regulators are also working together to strengthen financial market utilities (FMUs)—the infrastructures that transfer, clear, and settle financial trades—to enhance their ability to withstand the failure of participating firms. To this end, the Federal Reserve and the SEC have proposed, and the CFTC has finalized, rules for FMUs, including rules establishing risk-management requirements for these entities. In addition, the Council has made its initial designations of systemically important FMUs. The Office of Financial Research (OFR) is making substantial progress to improve the quality and availability of financial market data.

Regulators continue to bring greater transparency to the financial markets. The SEC has implemented the Dodd-Frank Act's requirement that advisers to most hedge funds and certain other private funds register with the SEC. As of March 31, 2012, public reporting of the identities of these advisers is required, as well as information about the private funds' size and key service providers. In addition, in October 2011 the SEC and CFTC adopted a joint rule that requires non-public reporting by certain advisers to hedge funds and other private funds to facilitate the assessment of systemic risk. This non-public reporting includes information about the operations and risk profiles of these private funds, which will enable regulators to review risk trends over time.

Regulators are working to strengthen protections for consumers and investors. Notably, the CFPB has adopted and proposed a variety of rules required under the Dodd-Frank Act, including the adoption of new rules to provide protections to consumers who make remittance transfers and the proposal of

rules to consolidate mortgage loan disclosure forms to make loan information more useful to consumers and to reduce burdens on lenders. In addition, the CFPB launched its supervision program for very large depository institutions (in coordination with prudential regulators) and for certain nonbanks. It has established its consumer response function, and assumed rulemaking responsibility for federal consumer financial laws.

Because financial markets are global, U.S. authorities are closely engaged in international regulatory negotiations as they continue to implement the Dodd-Frank Act. The effectiveness of reform at home could be undermined if risk is able to migrate to jurisdictions with weaker standards. Therefore, it is essential to have internationally consistent regulations on capital and liquidity, resolution regimes, derivatives markets and regulation of large, complex financial institutions, while acknowledging that individual countries may require different approaches based on structural differences in their financial systems. The task of achieving strong and consistent global standards is essential because the ultimate outcomes of U.S. and international reform efforts are intimately connected.

While much progress has been made, U.S. regulators are operating with limited resources to implement reforms that apply to very complex markets and institutions and are essential for the national economic interest. Ultimately, for these reforms to be successful, regulators must have the necessary resources to undertake their policymaking, supervisory and enforcement responsibilities.

The Council—which brings together our many different regulatory agencies—has convened 12 times since last year's report to share information on key financial developments, coordinate on regulatory implementation, and monitor progress on recommendations from the first annual report. The Council finalized a rule outlining the process it will use for determining which nonbank financial companies will be supervised by the Federal Reserve and subject to enhanced prudential standards, including resolution planning requirements. As previously discussed, the Council has also designated an initial set of systemically important financial market utilities that will be subject to enhanced risk-management standards. It remains focused on both identifying near-term threats and addressing structural vulnerabilities in the financial system.

Potential Emerging Threats to U.S. Financial Stability

Threats to financial stability, like threats to national security, are always present, even if they are not always easy to discern in advance. The euro area poses an obvious risk to U.S. financial stability. To date, euro area authorities have been able to prevent a major dislocation by providing large quantities of liquidity to their banking systems, and by providing official sector funding on a case-by-case basis, conditional on fiscal and structural reforms, for nations that have lost market access. The nations under stress have taken painful steps to reduce structural fiscal deficits, and have undertaken some economic liberalization in an effort to boost growth and competitiveness. Euro area leaders have also taken actions towards recapitalizing troubled banks. However, the uncertainty surrounding euro area developments remains high.

Many argue that the euro area needs a more system-wide solution that deepens financial and fiscal integration and completes economic and monetary union. Such a solution might include a roadmap to strengthen the institutional foundations of the euro, with appropriate governance and incentives, as well as a credible crisis-fighting bridge to that future set of arrangements.

Moreover, the challenges surrounding Greece have focused market attention on the sustainability of countries' euro membership and the costs of a potential euro breakup. The establishment of the single currency was a remarkable step towards greater European unity, and dissolution of the euro would come at great cost. Specifically, market participants highlight credit risk, legal risk, and redenomination risk—the risk that obligations due in euros will be repaid in an alternative, less valuable, currency.

The direct net exposures of large U.S. banks to the most stressed euro area sovereigns are very small relative to capital. However, a systemic crisis in Europe, in which contagion and spillover effects spread widely among euro area countries and markets, represents a significant risk for U.S. institutions. In addition, asset price declines due to shocks originating in the euro area would likely have an adverse impact on the balance sheets of U.S. institutions, as would a generalized deterioration in market sentiment due to increased European volatility.

While Europe is the principal financial stability risk facing the U.S. financial system today, it is not the only source of potential threat. The U.S. recovery has not yet transitioned from moderate to self-sustainable growth. The "fiscal cliff" around year end—including expiration of the tax cuts originally enacted in 2001 and 2003, the expiration of payroll tax cuts and extended unemployment benefits, and the Budget Control Act-mandated sequester—represents a threat to the recovery and financial stability if not addressed.

Structural and cyclical weaknesses persist in the housing sector, including the large number of households with low or negative equity in their homes. As a result, the housing market could face increased pressures should there be a slowdown in economic growth. Meanwhile, cybersecurity remains a constant area of concern and potential vulnerability.

Risks could also arise from uncertainty about the vigor of global growth outside Europe, including in the emerging markets. Authorities in China and a number of other EMEs face the challenge of supporting demand and employment at a time of weakness in the industrialized world while attempting to avoid fuelling domestic real estate bubbles. China's substantial contribution to global growth and its purchases of advanced economy debt mean that a hard landing there would have important implications for the U.S. economy.

It is essential to enhance the resilience of the financial system against both the threats that we can identify today and ones we cannot. Vulnerabilities in the financial system can be grouped into three broad classes or types: inherent vulnerabilities (features of our financial system that will always make financial markets and institutions fragile), potential control weaknesses (failures in

operations, risk management, and governance), and behavioral vulnerabilities (incentives to take too much risk).

One area that merits ongoing scrutiny is the potential interaction between reliance on short-term wholesale funding (an inherent vulnerability) and incentives to "reach for yield" (a behavioral vulnerability) in a low interest rate environment, for instance, by taking on excessive duration or credit risk or by shortening the tenor of funding. Some nonbank financial companies already rely heavily on short-term market financing, which could represent a source of instability if borrowers were to have difficulty rolling over liabilities in a time of stress. For example, while short-term funding markets were not disrupted by the recent downgrades of internationally active financial institutions, these events are causing market participants to reevaluate both concentration and duration of exposures in these markets. While the use of short-term liabilities to fund long-term assets is central to financial intermediation, the risks associated with this practice must be carefully managed and subjected to appropriate oversight. Events over the past year have also highlighted the importance of potential control weaknesses particularly for concentrated exposures or complex trading strategies.

While member agencies of the Council are engaged in implementing the Dodd-Frank Act, much of the Council's attention has also been on vulnerabilities that require additional focus beyond Dodd-Frank rulemaking. As emphasized in last year's report, the instability of short-term wholesale funding markets is exacerbated by ongoing structural vulnerabilities in the tri-party repo market and in the money market fund industry. These vulnerabilities cannot be adequately addressed only at the firm level and must be tackled at the system level.

Consistent with the recommendation of the Council last year, the Federal Reserve has now taken a more direct supervisory approach to pursuing the necessary changes to the tri-party repo market. Similarly, the SEC continues to work through policy options for much needed reform of money market funds. Section 3 of this report sets out the Council's 2012 recommendations in these and other areas.

The Council remains vigilant against potential shocks and vulnerabilities in financial markets. Regulators cannot eliminate risk nor provide guarantees that in the event of a major disruption in the euro area or elsewhere, there would be no impact on U.S. financial stability. However, thanks in part to progress on financial reform, the U.S. financial system is stronger and better able to absorb shocks than was the case even a year ago. Moreover, the member agencies of the Council have important tools to combat contagion and mitigate its effects on our national economy, and will not hesitate to use these tools should the national interest require them.

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. In this section, we discuss the ongoing work of the Council, its members, and the private sector to address these important mandates and lay out concrete recommendations.

3.1 Reforms to Address Structural Vulnerabilities

Reforming Structural Vulnerabilities in Wholesale Short-Term Funding Markets

Stable wholesale short-term funding markets are a critical component of a well-functioning financial system, but if they suffer disruptions, these markets can rapidly spread shocks across financial institutions. The Council continues to be particularly focused on structural vulnerabilities in money market funds (MMFs) and the tri-party repo market, as follows.

Money Market Funds

The Council continues to support the implementation of structural reforms to mitigate the run risk in MMFs. Specifically, these reforms are intended to address the structural features of MMFs that caused a run on prime MMFs and the freezing of the short-term credit markets after the Reserve Primary Fund was unable to maintain a stable net asset value (NAV) in September 2008. In 2010, the SEC adopted MMF reforms designed to make MMF portfolios more resilient by improving credit quality standards, reducing maturities, and—for the first time—instituting liquidity requirements. The 2010 reforms appear to be working as designed and meeting the intended goals. However, the SEC's 2010 reforms did not address—and were not intended to address—two core characteristics of MMFs that continue to contribute to their susceptibility to destabilizing runs. First, MMFs have no mechanism to absorb a sudden loss in the value of a portfolio security, without threatening the stable $1.00 NAV. Second, there continues to be a "first mover advantage" in MMFs, which can lead investors to redeem at the first indication of any perceived threat to the value or liquidity of the MMF.

SEC Chairman Schapiro recommended two alternative reforms to address these remaining structural fragilities. They are (1) a mandatory floating NAV; and/or (2) a capital buffer to absorb losses, possibly combined with a redemption restriction to reduce the incentive to exit the fund. The Council supports this effort and recommends that the SEC publish structural reform options for public comment and ultimately adopt reforms that address MMFs' susceptibility to runs.

In addition, the OCC issued a proposed rulemaking in April 2012 that would partially align the requirements for short-term bank common and collective investment funds (STIFs) with the SEC's revisions to Rule 2a-7 under the Investment Company Act. In an effort to impose comparable standards on

comparable financial activities, the Council further recommends that, where applicable, its members align regulation of cash management vehicles similar to MMFs within their regulatory jurisdiction to limit the susceptibility of these vehicles to run risk.

Tri-Party Repo Market

The elimination of most intraday credit exposure and the reform of collateral practices in the tri-party repo market continues to be an area of intense focus for the Council. The Tri-Party Repo Infrastructure Reform Task Force was formed in September 2009 in response to the financial crisis. Before being disbanded in February 2012, the Task Force accomplished a number of changes in process and practice that laid a foundation for future risk reduction, including: (1) moving the daily unwind of some repos from 8:30 a.m. to 3:30 p.m., which shortens the period of credit exposure; (2) introducing automated collateral substitution; and (3) introducing three-way trade confirmation functionality. While important, these changes do not meaningfully reduce reliance on intraday credit from the clearing banks.

The industry has indicated that elimination of intraday credit associated with tri-party settlement will be a multi-year effort. The Council views this proposed timeline as unacceptable to achieve timely substantive reductions in risk. The Council recommends that the industry implement near-term steps to reduce intraday credit usage within the next 6 to 12 months and an iterative strategy over six-month increments to continue both to reduce intraday credit substantially and to implement improvements in risk-management practices across all market participants. In addition, the Council recommends that regulators and industry participants work together to define standards for collateral management in tri-party repo markets, particularly for lenders, such as MMFs, that have legal or operational restrictions on the instruments that they can hold.

Customer Protection Standards and Segregation of Customer Assets

Financial intermediaries hold customer assets for a variety of purposes, such as maintaining cash balances prior to investment and as margin. Intermediaries are able to increase efficiencies and lower costs for their customers by investing, and earning a return on, these customer assets. However, appropriate limits on the ways in which intermediaries can use these assets, including customer segregation rules, are a necessary part of strong customer protection standards that contribute to market integrity and confidence. Customer protection standards also help ensure the prompt return of assets to customers in the event of a financial intermediary's insolvency. Recent developments highlight the importance of such standards, including protection standards for trading in foreign markets, that are well-understood by market participants and enforced by regulators.

The CFTC and SEC recently took a number of actions to maintain strong standards for customer protection. Specifically, in December 2011, the CFTC amended its rules to add additional safeguards to the processes whereby customer funds may be invested by derivatives clearing organizations and futures commission merchants. In addition, in February 2012, the CFTC adopted new

standards to protect the collateral posted by customers clearing swaps through futures commission merchants on derivatives clearing organizations. Further, the SEC recently reopened the comment period on a 2007 proposal to amend certain customer protection rules.

The Council recommends that regulators continue to take steps to enforce existing customer protection standards and to enhance such standards going forward, particularly in light of the reforms to the swaps market introduced by the Dodd-Frank Act. The Council further recommends that regulators consider strengthening regulations governing the holding and protection of customer funds deposited for trading on foreign futures markets.

Clearinghouse Risk Management

The Dodd-Frank Act mandates central clearing of standardized swaps to mitigate the counterparty risk inherent in bilateral, over-the-counter (OTC) transactions. Although central clearing decreases counterparty risk, it also increases the concentration and operational risks presented by a clearinghouse standing between the two sides of numerous transactions.

The Dodd-Frank Act provides various tools that can be used to address this increased concentration risk. For example, the Council is authorized to designate financial market utilities as systemically important, which subjects such utilities to heightened risk-management standards. As discussed in more detail in Section 6, the Council recently designated a number of financial market utilities. The CFTC and SEC also took actions to further strengthen clearinghouse risk-management standards. For example, in November 2011, the CFTC adopted new risk-management standards for derivatives clearing organizations and the SEC continues to work to finalize rules on risk-management standards for clearing agencies.

The Council recommends that regulators continue to seek ways to strengthen the risk-management standards for clearinghouses and to work together to monitor clearinghouse practices across their respective jurisdictions to determine industry best practices that could be followed more broadly.

3.2 Heightened Risk Management and Supervisory Attention

Robust Capital and Liquidity Planning

Capital and liquidity buffers form the most fundamental protection for the broader financial system and the economy against unexpected risks or failures of risk management at financial institutions. Consistent with the Council's 2011 report, considerable progress has been made over the past 12 months on robust capital and liquidity planning at U.S. financial institutions. In addition to carrying out the 2012 Comprehensive Capital Analysis and Review (CCAR) exercise, the Federal Reserve proposed enhanced prudential standards, including capital and liquidity planning requirements, for the largest bank holding companies and for nonbank financial companies designated by the Council. Jointly with the FDIC and OCC, the Federal Reserve released supervisory guidance on stress testing for all banking organizations with total consolidated

assets over $10 billion in May 2012. In June 2012, the Federal Reserve, FDIC, and OCC invited public comment on three proposed rules that would implement in the United States the Basel III and other regulatory capital reforms and the changes required by the Dodd-Frank Act. Concurrently, the agencies also approved a final rule to implement changes to the market risk capital rule.

The Council recommends continued interagency coordination on regulation to help ensure enhanced capital planning and robust capital buffers for financial institutions. The Council also recommends continued research and development of stress-test methodologies to reflect evolution of the financial markets.

On liquidity planning, supervisors and private sector risk managers should closely monitor the risks inherent in short-term funding of longer-term assets. Although this practice is an essential function of the financial system, institutions should refrain from over-reliance on wholesale short-term funding where it could create additional vulnerabilities in extreme but plausible stress scenarios. In 2010, the federal banking agencies, state bank regulators, and the NCUA issued a policy statement on funding and liquidity risk management that addressed the importance of cash flow projections, diversified funding sources, stress testing, a cushion of liquid assets, and a formal, well-developed contingency funding plan as primary tools for measuring and managing liquidity risk. In late 2011, the Federal Reserve proposed a rule to require enhanced risk management of funding and liquidity risk by U.S. bank holding companies with total consolidated assets of $50 billion or more. In addition, the Basel III liquidity framework augments these expectations and proposes thresholds for short-term and longer-term funding resilience. The Council recommends that financial institutions take particular care to construct their funding models to be resilient to disruptions in wholesale short-term funding markets.

Effective Resolution Plans

Effective resolution plans for the largest financial institutions are important supervisory tools to address the operational and legal complexity of these firms on an ongoing basis, as well as to implement the new orderly liquidation authority. Last fall, the Federal Reserve Board and the FDIC approved a final rule that requires bank holding companies with total consolidated assets of $50 billion or more and nonbank financial companies designated by the Council to develop, maintain, and periodically submit resolution plans, also known as "living wills." The FDIC also issued another rule requiring FDIC-insured depository institutions with assets of $50 billion or more to file resolution plans. Taken together, these resolution plan requirements will improve efficiencies, risk management, and contingency planning. The Council recommends that firms use these plans to reduce organizational complexity to facilitate orderly resolution under the bankruptcy code.

Bolster Resilience to Interest Rate Shifts

While the ongoing environment of low interest rates supports the economic recovery, it can also pose particular challenges for financial institutions by compressing net interest margins and inducing losses on products with guaranteed returns, leading such institutions to pursue riskier investment

strategies in an effort to "reach for yield." Often, such strategies only show their negative consequences when a shift occurs in interest rates or credit conditions. Banking regulators and the NCUA, working with the Federal Financial Institutions Examination Council (FFIEC), released an advisory on Interest Rate Risk Management in January 2010 and provided additional clarification on this advisory through the issuance of an FAQ in January 2012. This guidance recommends stress testing for: (1) instantaneous and significant changes in the level of interest rates; (2) substantial changes in rates over time; (3) changes in the relationships among key market rates; and (4) changes in the slope and the shape of the yield curve. The NCUA also issued a final rule in January 2012 aimed at mitigating interest rate risk in credit unions.

The Council recommends that regulatory agencies and private sector risk managers continue their scrutiny of how potential changes in interest rates could adversely affect the risk profiles of financial firms and recommends using extreme but plausible interest rate scenarios in stress testing.

Maintain Discipline in Complex Trading Strategies, Underwriting, and New Financial Products

Events in the past year, including the publicly announced trading loss at JPMorgan Chase, demonstrate the importance of robust risk management when addressing complex trading strategies, illiquid positions, or concentrated exposures to areas of heightened risk. Such risk-management practices include: strong and clear lines of authority, reporting, and oversight; rigorous and ongoing validation of models used to design, execute, and control trading strategies; a formal process for changes to approved models; appropriate risk limits and metrics; and strong capital buffers. The Council recommends that financial institutions' senior management establish, and directors approve, strong risk-management and reporting structures to help ensure that risks are assessed independently and at appropriately senior levels. The Council further recommends that institutions establish clear accountability for failures of risk management.

While these examples highlight the importance of risk management in trading strategies, similar dynamics operate in maintaining disciplined credit underwriting standards and in vetting emerging financial products. In its 2011 Report, the Council noted the importance of maintaining discipline in credit underwriting standards and responding appropriately when there are signs that loan terms may allow borrowers to take on excessive risk. The 2011 Report also highlighted leveraged lending as an area for continued monitoring. While there was a pull-back in leveraged lending during the crisis, volumes have since increased while underwriting practices have deteriorated. In response to these trends, the federal banking agencies in March 2012 issued for comment revised and strengthened supervisory guidance to govern leveraged transactions financed by banks. The Council recommends that oversight of all of these activities continue to form an ongoing focus of supervisors' efforts and the Council's monitoring of the financial system.

High-Speed Trading

High-speed trading activities, combined with automated mechanisms for the generation, transmission, and matching of orders, represent technological developments that require particular attention. Speed and automation confer important advantages to financial markets. However, potential operational, credit, transmission, and other risks require careful monitoring. This is particularly true for markets that have limited experience with high-speed and algorithmic trading or where regulatory circuit breakers are not in place. In its 2011 Annual Report, the Council stressed the importance of keeping pace with competitive and technological developments in financial markets. The SEC and CFTC have taken a number of steps to address potential risks, such as facilitating improved audit trails for surveillance use by regulatory authorities, and requiring risk controls that pause or halt trading in securities and futures markets, including a new "limit up-limit down" for equity securities (described further in Section 6). For example, in July 2012, the SEC adopted a rule requiring the self-regulatory organizations (SROs) to develop a plan to create a consolidated audit trail that would provide for a centralized order tracking system—capturing customer and order event information for orders in exchange-listed equities and equity options, across all markets, from the time of order inception, through routing, cancellation, modification, or execution. This single tracking system would enable regulators to monitor trading that is widely dispersed across a variety of market centers. The Council supports these efforts by the two Commissions. More generally, the Council recognizes that acceleration in the speed and automation of trade execution requires a parallel acceleration in trading risk management and controls. The Council recommends that the CFTC and SEC consider error control and risk-management standards for exchanges, clearing firms, and other market participants that are relevant for a high-speed trading environment. The Council also recommends that the CFTC and SEC continue to track developments in current and evolving market structure and analyze the need for policy responses when appropriate.

Issues Related to Cybersecurity

The quickly evolving cyber threat environment requires strengthening the ongoing collaboration and coordination among financial regulators and private entities in the financial sector. The Council recommends continued engagement by financial regulators with both public and private sector organizations to identify and respond to emerging cyber threats against the financial system. The development of mechanisms for sharing information related to cyber threats and vulnerabilities should continue to be explored. Regulators should continue to take steps to help ensure that information security standards for financial institutions are appropriate to the current threat environment, and that examinations assess institutions' performance against those standards.

3.3 Housing Finance Reforms

Reforms to the Housing Finance System

The U.S. housing finance system has required extraordinary federal government support over the past several years. Since September 2008, Freddie Mac and Fannie Mae (the government-sponsored enterprises, or GSEs) have been in

conservatorship under FHFA. Even today, nearly four years later, approximately 90 percent of newly issued mortgages carry some form of government support, and the market continues to lack sufficient private capital to back residential mortgage credit risk.

During the past year, certain member agencies of the Council worked on a framework for housing reform that facilitates increased private sector involvement, while protecting consumers from abuses and reducing taxpayer exposures. In early 2012, FHFA released a Strategic Plan for the GSEs to develop approaches to mortgage finance infrastructure that could support any potential path towards broader housing reform going forward. The Strategic Plan is designed to reduce the GSEs' risk profile and to increase incentives for the private sector to absorb mortgage credit risk through improved pricing and enhanced risk sharing. At the same time, it preserves a role for the GSEs in mitigating credit losses from the legacy book and providing foreclosure alternatives to borrowers.

In addition, the CFPB is working toward implementing important Dodd-Frank Act rules to help ensure that lenders make a reasonable determination, based on verified information, that a consumer has the ability to repay a loan. Such provisions can help protect consumers from many of the abuses that led up to the crisis and can improve transparency and confidence in the mortgage markets.

Member agencies of the Council are also working to promote more efficient markets for residential mortgage-backed securities (RMBSs). In particular, the SEC continues to consider appropriate disclosure rules for RMBSs, forming part of its Regulation AB, which will provide private market participants with more transparent information about the assets underlying RMBSs. Enhanced clarity and guidelines for asset-backed securities, including securitization of residential mortgages, is also the goal of work by five Council member agencies, along with the U.S. Department of Housing and Urban Development (HUD), on the Dodd-Frank Act's risk retention rule.

All of these efforts are important near-term steps to encourage private capital to take on additional mortgage credit risk. Nonetheless, additional certainty is necessary about the future of housing finance infrastructure and related policy issues to further promote the return of private capital. In particular, there do not yet exist broadly agreed-upon standards to characterize the quality and consistency of mortgage underwriting. Such standards are necessary to support the valuation and liquidity of mortgage-backed instruments. There continue to be non-uniform foreclosure practices across different states. And there remains uncertainty about the legal liability of a mortgage securitizer should a loan fail to conform to representations and warranties that were made about specific loan characteristics.

Treasury and HUD, in their joint white paper on longer-term housing finance reform released in February 2011, put forth a range of options for the government's role in a privatized system of housing finance. Treasury continues to evaluate these options and continues to pursue working with Congress on these issues to support a safer and more robust long-term housing finance system.

The Council recommends continued work to develop a long-term housing finance reform framework that supports the central role of private capital and the emphasis on consumer and investor protections in any future housing finance system. It is critical for the Council members, HUD, and Congress to continue their work to develop standards and best practices. In addressing these issues, Council members should be mindful of the important role of housing in the economy, the nascent recovery, and household finances and act to balance these concerns. As the Council members, HUD, and Congress continue their work to establish a new and lasting system for housing finance, it is critical to address the weaknesses that became evident in the recent housing crisis.

Mortgage Servicing Standards and Servicer Compensation Reform

The Council continues to focus on the need for national mortgage servicing standards and servicer compensation reform to strengthen confidence in the mortgage market. The lack of clear servicing standards in the period leading up to the housing crisis led to problems in assisting borrowers to avoid foreclosure, inappropriate servicing practices, and additional losses for investors.

In early 2011, the federal prudential banking regulators, along with HUD, FHFA, and Treasury, formed an interagency working group to address the need for fair, clear, and uniform national servicing standards. This followed an earlier review by the Federal Reserve, OCC, and FDIC of major servicers that resulted in supervisory consent orders that are now being implemented by the largest mortgage servicers. Also in April 2011, FHFA announced the Servicing Alignment Initiative for Fannie Mae and Freddie Mac, which produced a consistent set of protocols for servicing mortgages from the onset of delinquency. In February 2012, the federal government (led by the Department of Justice, together with Treasury and HUD) and 49 states reached a $25 billion settlement with the nation's five largest mortgage servicers to address mortgage loan servicing and foreclosure abuses. The CFPB joined the interagency working group in July 2011, and in April 2012 provided a public outline of its plans for mortgage servicing regulations, with formal rules expected to be proposed for comment this summer.

In addition, in September 2011, the Joint Mortgage Servicing Compensation Initiative, launched by FHFA, released a discussion document seeking comments on two alternative servicing compensation structures for servicing single-family mortgages. The current structure of mortgage servicing compensation could have contributed to an underinvestment in servicing capacity and greater concentration in the mortgage servicing industry. One proposal would establish a reserve account within the current compensation structure that could be used to increase servicing capacity in times of stress. The other proposal would create a new fee-for-service compensation structure to better align incentives and reduce the capital intensity of mortgage servicing assets.

Mortgage servicing standards can contribute to long-term servicing improvements for all borrowers and other participants in the mortgage market. The Council recommends that the FHFA, HUD, CFPB, and the other agencies, as necessary, develop comprehensive mortgage servicing standards that require consistent and transparent processes for consumers and promote efficient alternatives to

foreclosure where appropriate. In addition, the Council recommends continued efforts to implement compensation structures that align the incentives of mortgage servicing with those of borrowers and other participants in the mortgage market.

3.4 Progress on Implementation and Coordination of Financial Reform

The Dodd-Frank Act

In the two years since the Dodd-Frank Act became law, members of the Council and their agencies have proposed and finalized a substantial number of rules implementing provisions of the Act, and they continue to work on additional rules in a coordinated manner. The reforms in the Dodd-Frank Act strengthen the resilience of the financial system and provide a clear agenda for the regulatory community to address vulnerabilities exposed in the recent crisis. As described in Section 6, the Dodd-Frank Act establishes new protections for financial consumers and investors. It improves financial markets through designation of and enhanced risk-management standards for systemically important financial market utilities. It provides for private fund adviser registration and reporting and imposes constraints on risk as well as transparency requirements for derivatives markets. In conjunction with international agreements on consistent global prudential standards, the Dodd-Frank Act will require financial firms to operate with larger capital and liquidity buffers and better risk controls, and it requires firms to submit resolution plans to the FDIC, Federal Reserve, and the Council. Finally, the Dodd-Frank Act provides important new authority to resolve a large, complex financial institution in an orderly manner.

Finalizing the rulemakings under the Dodd-Frank Act and implementing the required changes effectively will require close coordination among the regulatory community and open dialogue with the public and industry. To meet the challenges of designing and enforcing these new rules, the resources dedicated to financial oversight must increase. Regulatory agencies must have sufficient resources to attract and retain talented individuals, acquire needed data, develop the requisite analytic capabilities, and invest in systems to monitor market activity and enforce the new rules. The Council recommends complete and expeditious implementation of the Dodd-Frank Act, along with the provision of the resources needed to accomplish this essential task.

International Coordination

In its 2011 Annual Report, the Council stressed the importance of international financial regulatory coordination. Financial markets are global in scope, while regulation proceeds at the national level. To promote a level global playing field and to diminish the risk of having capital flow to the jurisdiction with the least restrictive regulatory regime, it is essential to have internationally strong and consistent regulations that form a coherent and effective whole, while allowing an appropriate degree of autonomy for individual countries to accommodate their own particular needs. It is particularly important for international regulators to consistently apply strong, well-calibrated standards for the critical areas of capital, liquidity, derivatives, central clearing, and failure resolution.

Considerable progress has been made over the past year on coordinating regulatory principles internationally. National regulators continue to implement the Basel III standards; and in June 2012, the Federal Reserve, OCC, and FDIC jointly issued the finalized market risk capital rules, as well as three notices of proposed rulemaking (NPR), that would replace the agencies' current capital requirements with requirements consistent with aspects of Basel II, Basel 2.5 and Basel III. The translation of these international agreements to domestic regulation is a key step in the regulatory reform efforts and is critical for enhancing the resiliency of regulated financial institutions and the financial system more generally.

Furthermore, the Basel Committee established the assessment methodology and a capital surcharge framework for globally systemically important banks (G-SIB) in November 2011 to enhance their loss absorbency capacity and reduce the probability of their failure. This methodology comprises five broad categories of size, interconnectedness, lack of readily available substitutes for the services provided, global (cross-jurisdictional) activity, and complexity. In the same month, the Financial Stability Board (FSB) issued the Key Attributes of Effective Resolution Regimes for Financial Institutions, which was endorsed by the G-20 leaders and is intended to provide international standards for national recovery and resolution planning regimes. Specifically, it addresses the "too-big-to-fail" problem by making it possible to resolve any financial institution in an orderly manner without exposing the taxpayer to the risk of loss.

In addition, the final version of the Principles for Financial Market Infrastructures (PFMI), issued by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO), was published in April 2012. The PFMI covers payments systems, central counterparties, securities settlement systems, and other financial utilities, and provides an updated set of international standards on issues such as governance, risk management, financial resources, liquidity, and operational robustness. These principles are especially important as the international community moves to implement the G-20 commitment to central clearing and reporting of OTC derivatives. In insurance, the International Association of Insurance Supervisors updated the Insurance Core Principles in October of last year. These principles provide a global framework for the supervision and regulation of the insurance sector.

The Council recommends continued international coordination of Basel III implementation, with an aim towards consistent and rigorous definitions of capital and risk weights across countries. The Council also recommends the continued development of international standards and national implementation for margin, central clearing, and reporting of OTC derivatives; and that supervision and regulation of financial market utilities (FMUs) embody the principles articulated in the PFMI. In addition, the Council recommends continued efforts to develop strong and internationally consistent procedures for the supervision and regulation of global systemically important financial institutions, including appropriate capital and liquidity requirements and internationally accepted resolution regimes for such institutions. The Council

strongly encourages international implementation and enhanced international coordination among home and host jurisdictions regarding recovery and resolution planning.

Data Resources and Analytics

The Council recommends that improvement in data standards should be a high priority for financial firms as part of their risk-management process and for the regulatory community—not just in the United States but globally. The development of the Legal Entity Identifier is a valuable first step, one that will help to identify precisely the parties to particular financial transactions. It will also enable a more accurate and consistent understanding of legal entity hierarchies, which is essential for effective counterparty risk management. The Council recommends that the Office of Financial Research (OFR) continue to work with the member agencies to promote and establish, where necessary, data standards for identification of legal entities, financial products, and transactions, and to improve the access to and aggregation of data by the regulators. Finally, the Council recommends that cross-border exchange of supervisory data among supervisors and regulators continue to be facilitated in a manner that safeguards the confidentiality and privilege of such information, in order to help provide comprehensive oversight of financial institutions with a global reach and improve coordination on financial stability.

4 Macroeconomic Environment

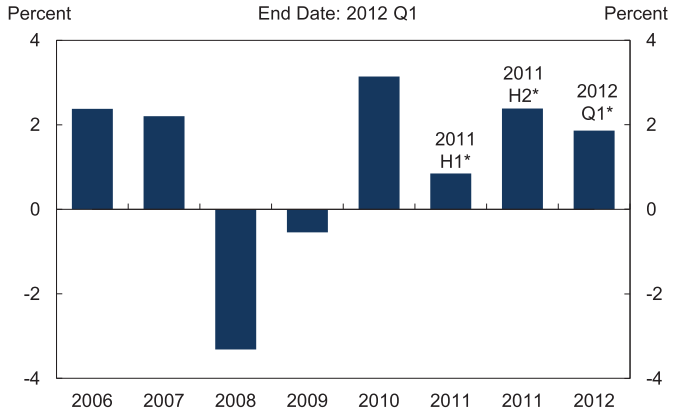
4.1 U.S. Economic Activity

The economic recovery that began in the second half of 2009 continued in 2011 and early 2012. Nonetheless, the pace of activity and employment growth remained quite modest compared with previous economic expansions, as a number of factors have continued to weigh on growth in spending and production. These factors include a depressed housing market, the spillover effects of the fiscal and financial difficulties in Europe, continued fiscal retrenchment of state and local governments within the United States, uncertainty about the federal budget and related policies, and less credit availability for many households and small businesses compared to pre-crisis norms.

4.1.1 Real Gross Domestic Product

Economic growth continued at a modest to moderate pace in 2011 and early 2012. Real GDP increased less than 1 percent at an annual rate in the first half of 2011, as economic activity was held down by temporary factors, particularly supply chain disruptions stemming from a major earthquake and tsunami in Japan and the damping effect of a sharp run-up in energy and commodity prices on consumer spending **(Chart 4.1.1)**. Growth picked up in the second half of the year to an annual rate of nearly 2.5 percent, as the effects of these temporary factors waned. Real GDP expanded at an annual rate of 1.9 percent in the first quarter of 2012, and available indicators suggest a continued moderate pace of growth in the second quarter. Among the factors that are hampering growth are a depressed housing market, the spillover effects of the fiscal and financial difficulties in Europe, continued fiscal retrenchment of state and local governments within the United States, uncertainty about U.S. federal budget and policy, and credit availability that is significantly tighter relative to pre-crisis norms for many households and small businesses.

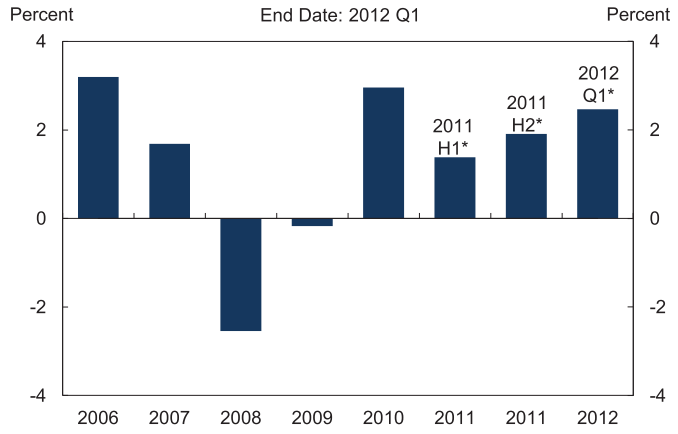
Chart 4.1.1 Change in Real Gross Domestic Product



Source: BEA

Note: Annual changes are Q4/Q4. *Annualized rate.

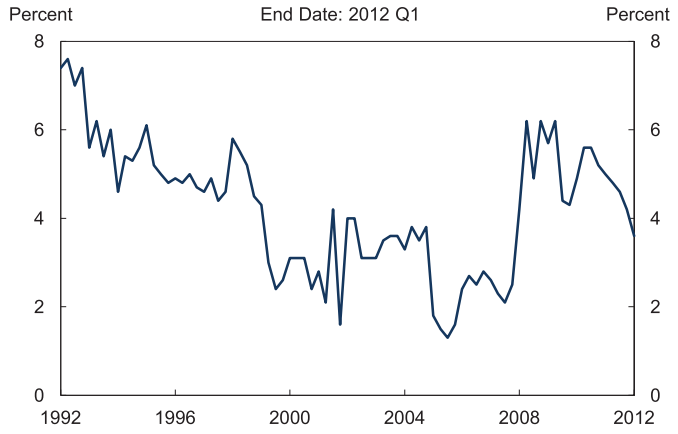
Chart 4.1.2 Change in Real Personal Consumption Expenditures



Source: BEA

Note: Annual changes are Q4/Q4. *Annualized rate.

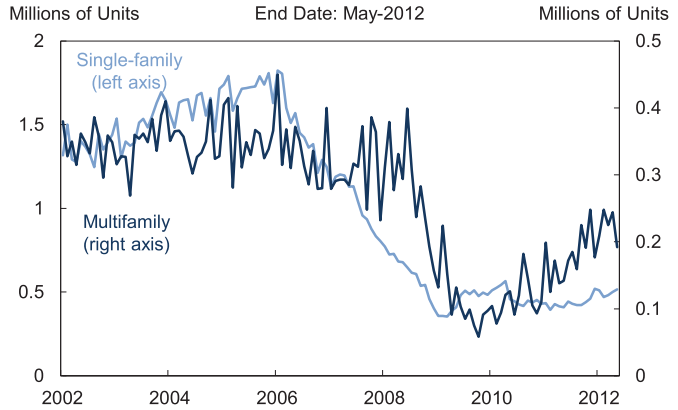
Chart 4.1.3 Personal Saving Rate



Source: BEA

Note: As a percent of disposable personal income.

Chart 4.1.4 Private Housing Starts



Source: Census Bureau, Haver Analytics

Note: Seasonally adjusted at an annualized rate.

Consumption and Residential Investment

Real personal consumption expenditures (PCE) increased 1.6 percent in 2011 (Q4/Q4) and 2.5 percent (annualized rate) in the first quarter of this year **(Chart 4.1.2)**. Real disposable income rose more modestly, held down by the weak labor market. The weak pace of income growth over 2011 and early 2012, combined with increases in consumer outlays, brought the personal saving rate down from 5.2 percent in late 2010 to 3.7 percent in the first quarter of 2012 **(Chart 4.1.3)**.

In addition to the weak gains in income, a number of other factors also restrained the pace of improvement in consumer expenditures. Household wealth (relative to income) remains well below the elevated levels that prevailed in the mid-2000s, when it was supported by house prices and household equity holdings. Similarly, underwriting standards remain tight for many potential borrowers—particularly for mortgage credit, which continues to weigh down housing demand and refinancing activity despite historically low interest rates. In part, these factors have been reflected in readings on consumer sentiment, which remain low relative to levels before the financial crisis, despite having retraced much of the decline that occurred in the summer of 2011 as difficulties in Europe flared and the debate over the U.S. debt ceiling became heated.

The housing market remains strained. In 2011, both new and existing home sales remained near the low levels that have prevailed, on average, since 2008. Residential construction activity and housing starts remained tepid, especially for single-family homes, given weak demand, the abundant stock of vacant homes, and low housing prices **(Chart 4.1.4)**. However, recent indicators have been somewhat more encouraging. Home prices have begun to stabilize, with some measures showing an uptick in early 2012. In addition, multifamily housing starts have been trending upward since early 2010, albeit from low levels.

Business Fixed Investment

Real business fixed investment (BFI) posted a solid increase in 2011, rising 8.1 percent on a Q4/Q4 basis. However, growth has been slower so far in 2012, and BFI as a share of GDP remains considerably below its pre-recession level. Much of the deceleration in BFI this year has been in expenditures on equipment and software (E&S), which rose at an annual rate of just 3.5 percent in the first quarter after rising 9.6 percent (Q4/Q4) in 2011; this step-down in E&S investment may be related in part to renewed concerns among businesses about the global economic and financial situation. Meanwhile, investment in nonresidential structures has increased somewhat, on net, in recent quarters after a period of very steep declines, but conditions in the sector remain difficult: vacancy rates for commercial space are still high, prices of existing structures are low, and financing conditions for builders are still tight despite some signs of recent easing.

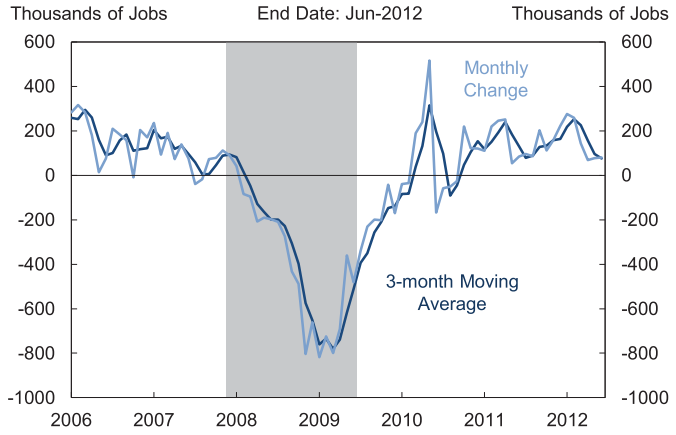
Government Purchases

Real government expenditures at the federal, state, and local level continue to contract. Real state and local government purchases fell by 2.5 percent on a Q4/Q4 basis in 2011 due to ongoing budgetary pressures, continuing the pattern seen since the onset of the recession and financial crisis. Real federal government purchases fell throughout 2011 and early 2012 following the withdrawal of the fiscal stimulus provided during the crisis and large declines in federal defense spending in 2011:Q4 and 2012:Q1.

Imports and Exports

Real exports of goods and services rose 4.7 percent over 2011, boosted by continued growth in overall foreign economic activity. The increase in export demand was concentrated in the emerging market economies (EMEs), while exports to the euro area declined toward the end of the year. As U.S. economic activity grew modestly in 2011, real imports of goods and services rose by 3.6 percent. Altogether, the contribution of net exports to growth in real

Chart 4.1.5 Net Change in Payroll Employment

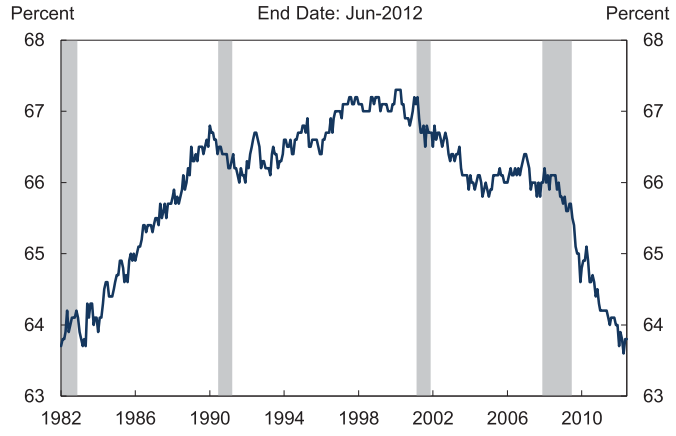


Source: BLS Note: Gray bar signifies NBER recession.

Chart 4.1.6 Civilian Unemployment Rate

Source: BLS Note: Gray bars signify NBER recessions.

Chart 4.1.7 Labor Force Participation Rate



Source: BLS Note: Gray bars signify NBER recessions.

GDP was essentially zero last year and in the first quarter of this year.

4.1.2 The Labor Market

The labor market strengthened over the course of 2011 and the first several months of 2012. Nonetheless, the improvement in employment and other labor market indicators since the end of the recession has been modest, and the labor market has a considerable distance to go before returning to the conditions that prevailed prior to the recession and financial crisis.

Nonfarm payroll employment increased at an average monthly rate of 153,000 jobs in 2011 **(Chart 4.1.5)**. The private sector added an average of 175,000 jobs monthly last year, while government payrolls dropped at an average rate of 22,000 per month (mostly at state and local governments). During the first half of 2012, private payrolls advanced about 159,000 per month, just below the average pace in 2011, and the pace of job loss at governments has moderated somewhat. Overall through June 2012, the level of payroll employment remains about five million below its peak in January 2008.

The unemployment rate has declined significantly, from its peak of 10 percent in October 2009 to 8.2 percent in June 2012, although it remains far above levels that prevailed prior to the recession **(Chart 4.1.6)**. Some of this decline in the unemployment rate is attributable to reduced labor force participation **(Chart 4.1.7)**. While part of the reduction in participation reflects demographic shifts associated with an aging baby boomer population, the weak economy has played an important role by discouraging many workers from continuing to search for positions. In addition, long-duration joblessness continues to account for an especially large share of the total. In June 2012, 5.2 million persons among those counted as unemployed—about 42 percent of the total—had been out of work for more than six months **(Chart 4.1.8)**. The number of workers employed part-time for economic reasons has fallen somewhat over the past year, though it remains high by historical norms.

4.2 Private Nonfinancial Balance Sheets and Credit Flows

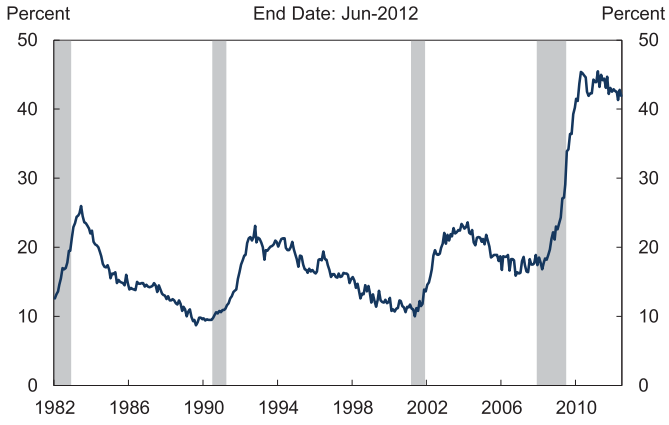
4.2.1 Nonfinancial Corporate Sector

The ratio of debt to net worth in the nonfinancial corporate sector, which had spiked during the downturn, continued to decline in 2011. Credit flows to this sector have remained relatively strong, with robust bond issuance and an increased pace of lending from bank and nonbank companies. Credit quality indicators remain solid, with low delinquency and default rates.

Nonfinancial corporate balance sheets deteriorated significantly during the recession, with measures of balance sheet leverage reaching historical highs. Corporate balance sheets improved markedly in 2010 and a bit more in 2011. The ratio of debt to net worth in this sector is now in line with its average level over the past 20 years **(Chart 4.2.1)**. Profits at nonfinancial corporations increased sharply in 2010 and remained high in 2011, driving equity market values for nonfinancial corporations back to near pre-crisis levels and allowing nonfinancial corporations to boost capital through retained earnings. In particular, nonfinancial corporations have accumulated a substantial buffer stock of liquid assets **(Chart 4.2.2)**.

This improvement in corporate profits and credit quality supported high levels of borrowing by nonfinancial corporate firms. In bond markets, which comprise the largest source of credit to the corporate sector, gross issuance by investment grade nonfinancial firms has been very strong **(Chart 4.2.3)**, although issuing firms appear to have mainly used these bonds to refinance existing debt. Issuance of high-yield bonds dropped in the second half of 2011, but the pace of issuance through May 2012 remained above the 2001-2012 average annual pace. Corporate bond spreads widened during fall of 2011 as investors became more cautious in the wake of the U.S. debt ceiling talks in August 2011 and developments in European markets **(Chart 4.2.4)**. As of July 6, 2012 corporate spreads still remained elevated relative to early 2011. The amount of

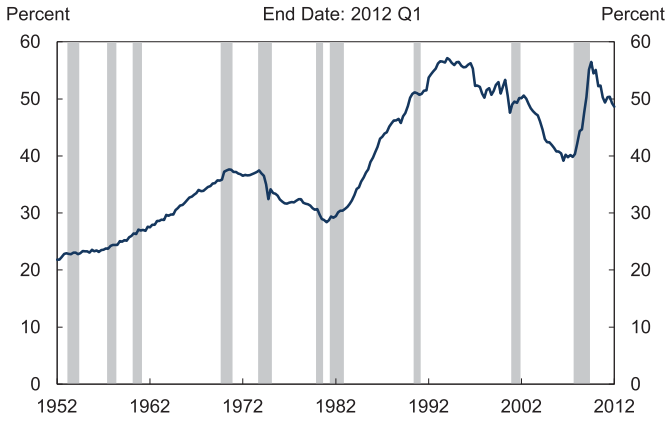
Chart 4.1.8 Long-Term Unemployment*



Source: BLS

*Note: Long-term unemployment as a percent of total unemployment. Gray bars signify NBER recessions.

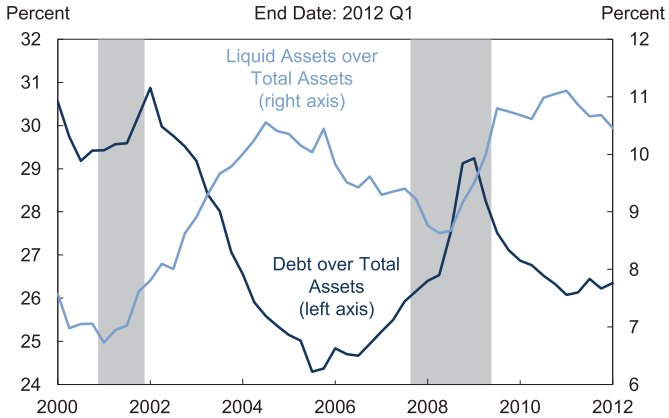
Chart 4.2.1 Nonfinancial Corporate Credit Market Debt to Net Worth



Source: Flow of Funds, Haver Analytics

Note: Gray bars signify NBER recessions.

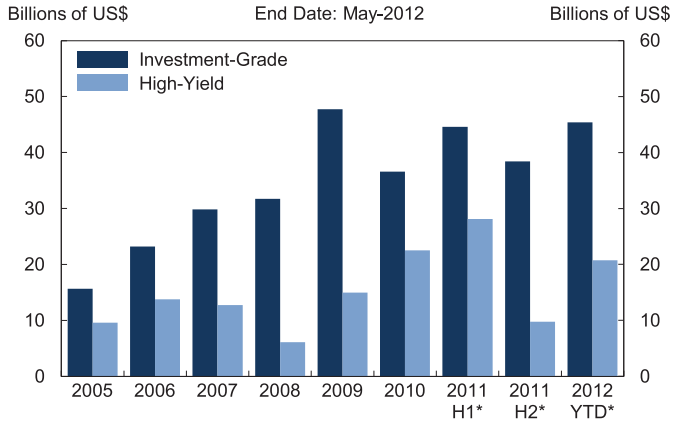
Chart 4.2.2 Financial Ratios for Nonfinancial Corporations



Source: Compustat, Federal Reserve Staff Estimate

Note: Gray bars signify NBER recessions. Value for Q1 2012 is estimated.

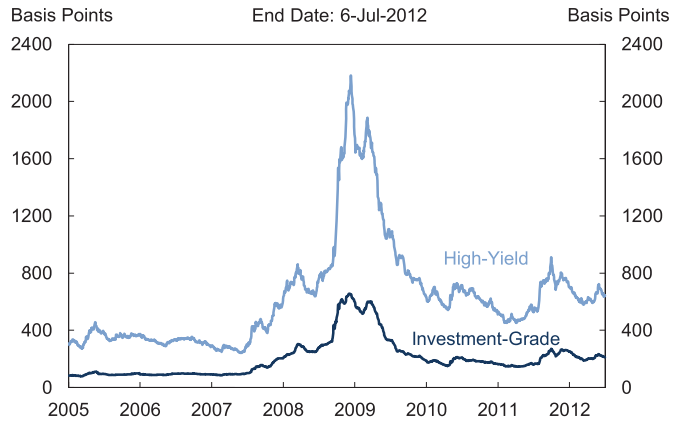
Chart 4.2.3 Bond Issuance by Nonfinancial Firms



Source: Dealogic

Note: U.S marketed issuances only. *Annualized rate.

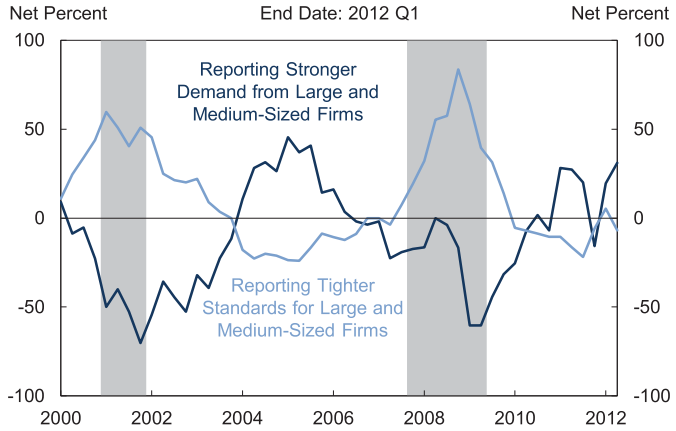
Chart 4.2.4 Corporate Bond Spreads



Source: Bank of America Merrill Lynch, Haver Analytics

Note: Spreads to Treasuries.

Chart 4.2.5 Bank Business Lending Standards and Demand



Source: SLOOS

Note: Gray bars signify NBER recessions.

commercial paper issued by businesses edged up only slightly over the past year despite relatively stable cost of issuance.

The net amount of loans to the nonfinancial corporate sector, which includes loans from bank and nonbank sources, rose at an annual rate of $132 billion in 2011, with the same pace of growth continuing in the first quarter of 2012. Bank lending to commercial and industrial (C&I) borrowers continued to rise between June 2011 and April 2012, reaching $1.4 trillion. While the bulk of this increase has been organic, charter conversions by thrifts boosted C&I loans in the banking sector by about $16 billion over this period. Over the same period, respondents to the Senior Loan Officer Opinion Survey (SLOOS) generally continued to report less stringent underwriting standards and lower spreads on C&I loans to large and medium-sized firms **(Chart 4.2.5)**.

Available indicators of credit quality remain solid: the default rate on nonfinancial corporate bonds is at a low level by historical standards **(Chart 4.2.6)**; C&I loan delinquency rates continued to decline through the first quarter of 2012 **(Chart 4.2.7)**; and expected year-ahead default rates for nonfinancial firms as measured by Moody's KMV model remain steady.

4.2.2 Commercial Real Estate Sector

Financing conditions in the commercial real estate sector remain strained following a long period of banks reporting tighter underwriting standards and subdued commercial mortgage-backed security (CMBS) issuance.

In contrast to the relatively sanguine credit conditions for corporate borrowers, financial conditions in the commercial real estate (CRE) sector remain strained amid weak underlying economic fundamentals and tight underwriting standards by banks. Prices for some segments of commercial properties have remained at low levels, and vacancy and delinquency rates continue to be elevated. After a sustained period of tightening, recent

SLOOS data show that lenders have generally refrained from further tightening standards on CRE loans. At the same time, moderate fractions of respondents indicated stronger demand for CRE loans in recent quarters. Consistent with these results, the decline in CRE loans on banks' balance sheets has slowed over the past year. Nonetheless, credit conditions for CRE remain tight by historical standards. In particular, respondents to a special question in the July 2011 SLOOS reported that CRE standards were at or near their strictest levels since 2005, and the survey results have shown little change in standards, on net, since July 2011.

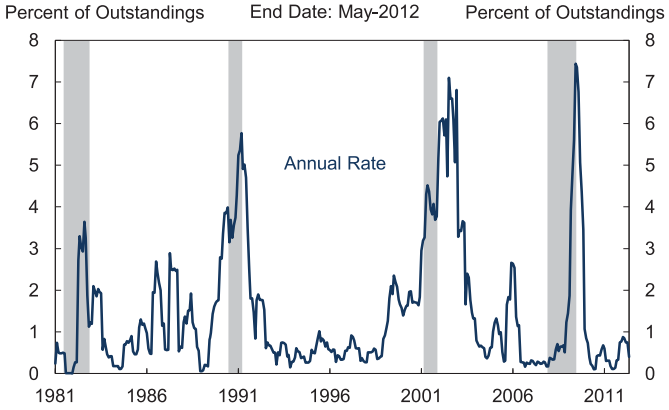
After relatively strong post-crisis issuance of CMBS in the first half of 2011, the amount of new CMBS issuance has been more subdued recently, and issuance in early 2012 was slightly below the pace set in the first half of 2011 **(Chart 4.2.8)**. CMBS delinquency rates and spreads remained high as borrowers struggled to refinance much of the approximately $33 billion in maturing five-year loans that were originated at the peak of CRE prices in 2007.

4.2.3 Noncorporate Business Sector

Small business lending remains subdued, in part because of the ongoing low real estate prices that have reduced the value of potential collateral for small business loans. There are some signs, however, that credit conditions for small business are gradually improving.

Net worth in the noncorporate sector, which is composed primarily of small businesses, fell sharply during the downturn but turned up in 2010 and grew a bit more in 2011. Real estate comprises a large share of the assets held by the noncorporate sector **(Chart 4.2.9)**, so changes in real estate values tend to have a very large impact on small business balance sheets. The value of real estate assets fell 12 percent in the noncorporate sector from 2007 to 2009, leading to a significant increase in the ratio of debt to net worth **(Chart 4.2.10)**. This ratio recovered some in 2010 and 2011, as net worth improved

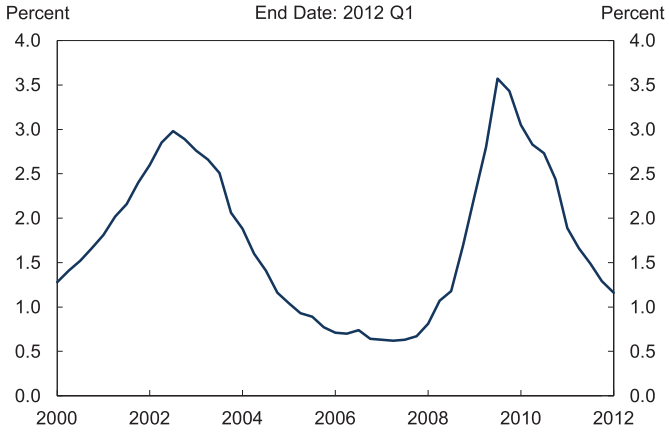
Chart 4.2.6 Nonfinancial Corporate Bond Default Rate



Source: Moody's

Note: 6-month trailing defaults divided by beginning-of-period outstandings. Gray bars signify NBER recessions.

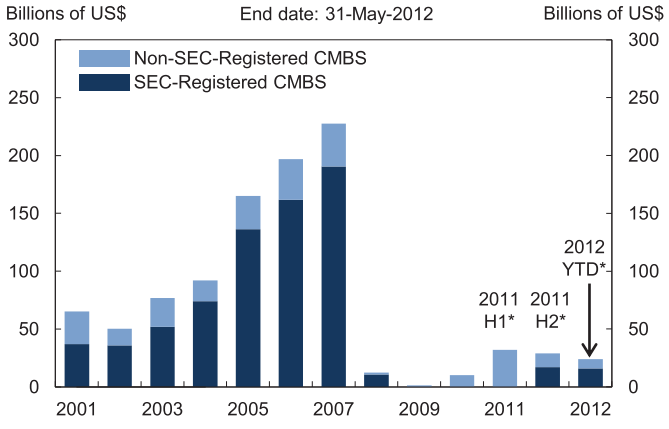
Chart 4.2.7 Noncurrent Commercial & Industrial (C&I) Loans



Source: FDIC, Haver Analytics

Note: Percent of total C&I loans.

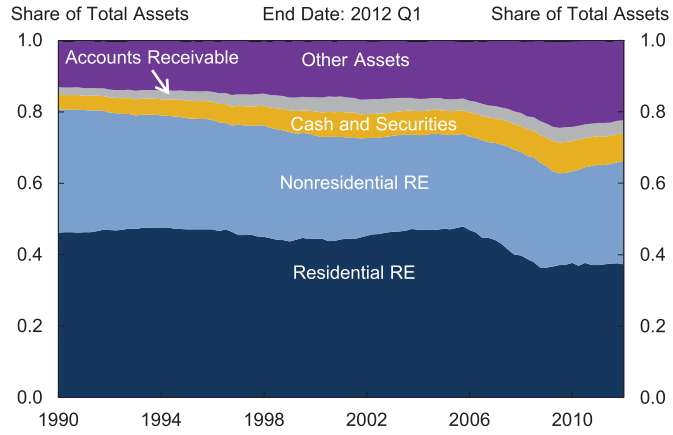
Chart 4.2.8 CMBS New Issuance



Source: Commercial Mortgage Alert

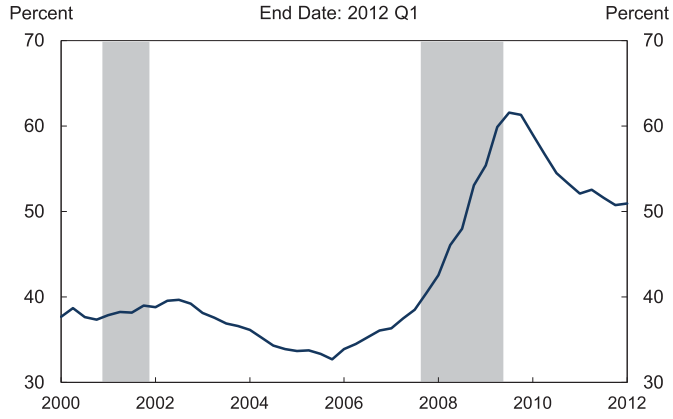
Note: *Annualized.

Chart 4.2.9 Noncorporate Assets



Source: Flow of Funds, Haver Analytics

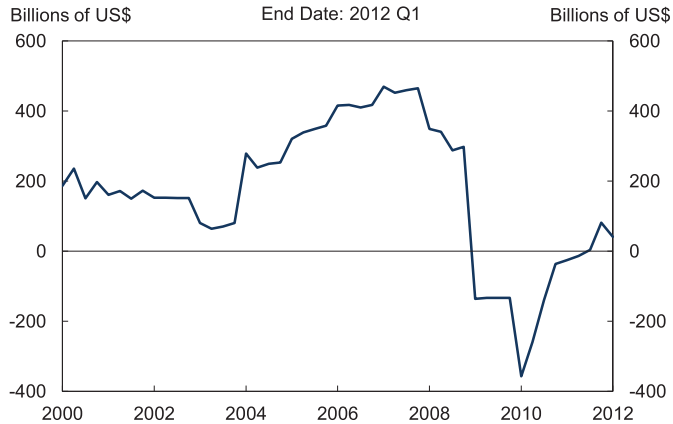
Chart 4.2.10 Noncorporate Credit Market Debt to Net Worth



Source: Flow of Funds, Haver Analytics

Note: Gray bars signify NBER recessions.

Chart 4.2.11 Net Borrowing by Nonfinancial Noncorporate Businesses



Source: Flow of Funds, Haver Analytics

Note: Seasonally adjusted, annual rate.

and debt contracted slightly, but it remains well above pre-recession levels.

Small businesses generally have access to a narrower range of financing options than corporations and thus depend more on bank loans, frequently secured by real estate. Since the beginning of the financial crisis, lower real estate collateral values and strains in the banking sector have constrained credit availability for many small businesses. However, there are signs that credit conditions for small businesses are gradually improving. Net borrowing by nonfinancial noncorporate businesses turned positive in the second half of 2011, after declining substantially during the crisis **(Chart 4.2.11)**. Furthermore, after a sustained period of tightening of standards and terms on loans to small businesses, respondents to the SLOOS noted some easing on loan standards and spreads in recent quarters **(Chart 4.2.12)**. In addition, since the beginning of 2012, the fraction of banks reporting stronger demand for C&I loans from small businesses has edged up. While the stock of small loans to businesses on bank balance sheets at the end of last year was more than 15 percent below its peak before the crisis, these loans ticked up in the fourth quarter of 2011, registering their first increase since 2008, and continued to increase in the first quarter of 2012.

Business lending by credit unions, which predominantly lend to small businesses, increased by 6 percent in 2011 to reach nearly $16.5 billion. Similar improvements in credit conditions are evident in the small business surveys conducted by the National Federation of Independent Business. The fraction of firms reporting that credit had become more difficult to obtain declined through the first quarter of 2012 **(Chart 4.2.13)**.

Notwithstanding these improvements, the fraction of firms reporting difficulty obtaining credit remains elevated relative to the pre-crisis period. Owners of new businesses, who might have tapped into the equity in their homes or used their homes as collateral for small

business loans, have found conditions especially challenging in recent years. In addition, business receivables at finance companies, an important source of small business financing, continued to decline through February 2012 and were down nearly 30 percent from their peak in July 2008.

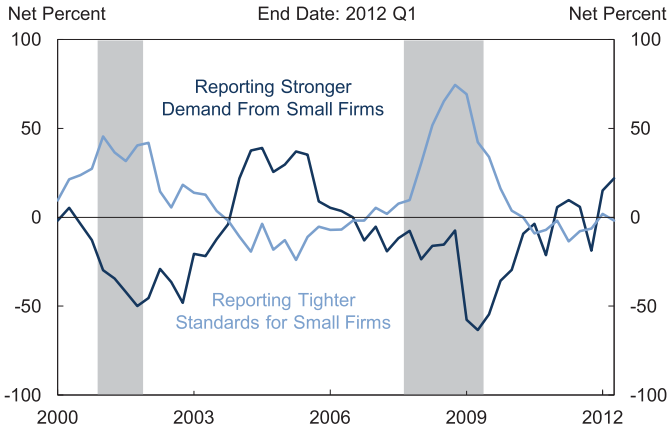
4.2.4 Household Sector

Household net worth improved slightly, on net, from the end of 2010 to the first quarter of 2012. The fraction of household income needed to cover debt service payments decreased further, though mortgage-related debt remains high relative to home values. Consumer credit has grown steadily, mostly owing to an expansion in non-revolving credit, including a significant increase in the amount of student loans to finance higher education.

Aggregate household net worth rose almost $1 trillion in 2011 to $60.0 trillion (nominal) in 2011:Q4, then jumped an additional $2.8 trillion in 2012:Q1. This large increase in household net worth in the first quarter primarily reflected gains on corporate equity (directly and indirectly held), although gains on real estate assets and net saving also contributed to this increase in net worth **(Chart 4.2.14)**. As discussed earlier, home prices continued to decline in 2011 but appear to have stabilized, and some measures of home prices have shown upticks recently. Owners' equity in housing has remained near a record low of approximately 40 percent since mid-2008 through March 2012, roughly 20 percentage points lower than its average over 1990 to 2005 **(Chart 4.2.15)**. All told, the ratio of household net worth to disposable personal income is now around its post-WWII average level, although it is far below the level reached in 2007. However, not all households have experienced a significant improvement in their balance sheet positions. For example, lower-income households with smaller exposures to the stock market have not benefitted much from the recovery in equity prices over the past several years.

Household debt outstanding, about three-quarters of which is accounted for by home

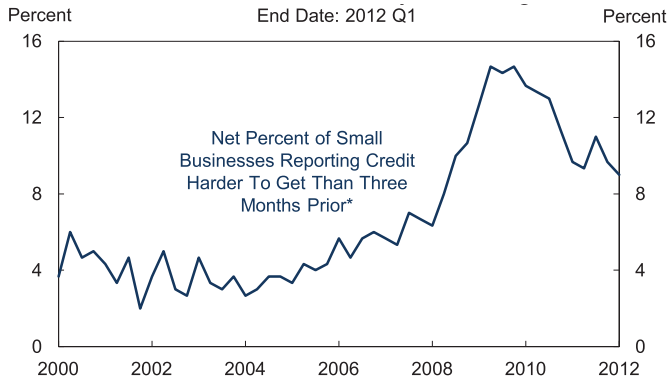
Chart 4.2.12 Bank Business Lending Standards and Demand



Source: SLOOS

Note: Gray bars signify NBER recessions.

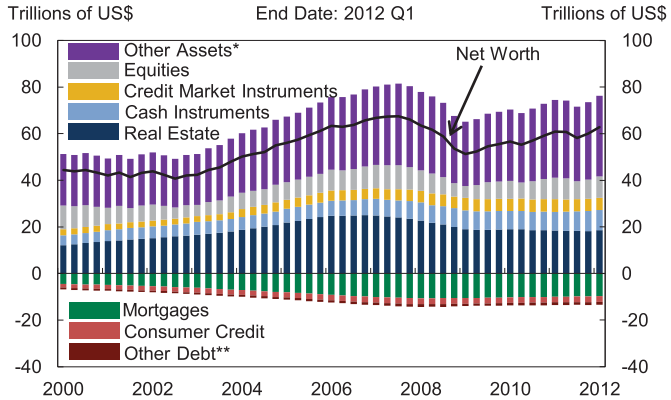
Chart 4.2.13 Small Businesses' Difficulty Obtaining Credit



*Note: Net Percent = small businesses reporting credit harder to get than three months prior minus those reporting credit easier to get than three months prior. For the population borrowing at least once every three months. Depicts quarterly averages of monthly data.

Source: NFIB, Haver Analytics

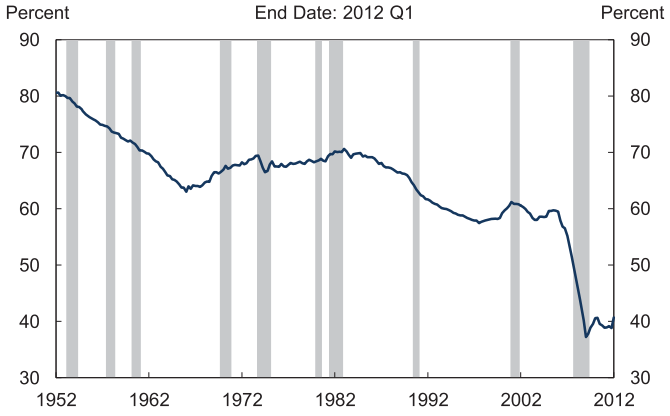
Chart 4.2.14 Household and Nonprofit Balance Sheets



Source: Flow of Funds, Haver Analytics

*Noncorporate equities, mutual fund shares, security credit, life insurance & pension fund reserves, tangible assets excl. real estate, misc. assets.
**Security credit, trade payables, unpaid life insurance premiums, other credit market instruments.

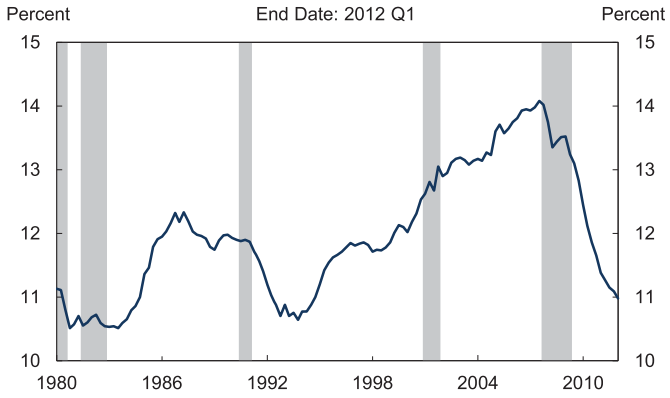
Chart 4.2.15 Share of Owners' Equity in Household Real Estate



Source: Flow of Funds, Haver Analytics

Note: Gray bars signify NBER recessions.

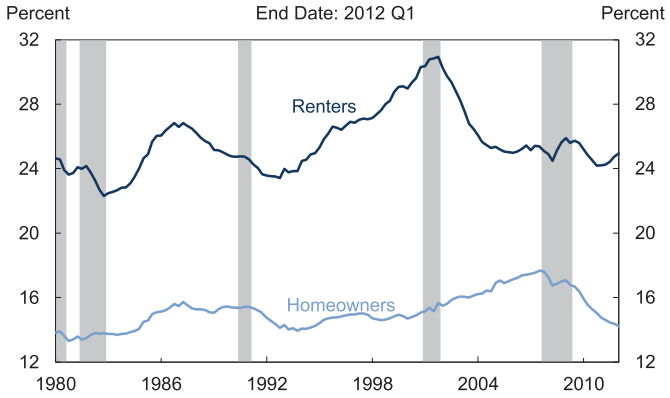
Chart 4.2.16 Household Debt Service Ratio



Source: Federal Reserve

Note: Ratio of debt-service payments to disposable personal income. Seasonally adjusted. Gray bars signify NBER recessions.

Chart 4.2.17 Household Financial Obligations Ratio



Source: Federal Reserve

Note: Ratio of debt-service payments to disposable personal income. Seasonally adjusted. Gray bars signify NBER recessions.

mortgages, declined further in 2011. This decline represented, to some degree, efforts by households to pay down their existing debt, as well as a low volume of new mortgage originations. It also reflects the effects of foreclosures and "short sales," which have, in the aggregate, reduced mortgage debt on household balance sheets. Moreover, access to residential mortgages remains constrained by tight underwriting standards, discussed further in Section 5.1.4. Deleveraging by households, along with low interest rates, various government tax and transfer programs, and rising employment and income, have helped households manage their monthly debt burdens. The household debt service ratio—the fraction of disposable income needed to cover household debt payments—continued to fall last year **(Chart 4.2.16)**. The financial obligations ratio, which measures a household's burden from a broader measure of commitments, including rent payments and homeowners' insurance, also moved down last year for homeowners **(Chart 4.2.17)**.

As of the first quarter of 2012, non-mortgage consumer credit outstanding increased nearly 5 percent from a year earlier to $2.5 trillion. Most of this increase in consumer borrowing is in non-revolving credit **(Chart 4.2.18)**, which accounts for nearly two-thirds of total consumer credit as of the first quarter in 2012. Among non-revolving credit, student and auto loans have been the fastest-growing categories, with new student loans primarily originated by the federal government.

Growth in revolving credit, on the other hand, has continued to be weak, even contracting recently after posting gains in the fourth quarter of 2011. The reduction in revolving credit is in part driven by the fact that all but "super prime" borrowers continue to face tight underwriting standards for credit cards as lenders pursue higher-quality borrowers. While the credit card limits for super prime borrowers with credit scores greater than 750 have been increasing since 2011, limits for "prime" borrowers with credit scores between

650 and 749 picked up only slightly. In contrast, credit card limits for "subprime" borrowers with credit scores less than 650 continued to edge down until the end of 2011 **(Chart 4.2.19)**. Data on credit card solicitations show a similar preference by banks toward higher quality borrowers.

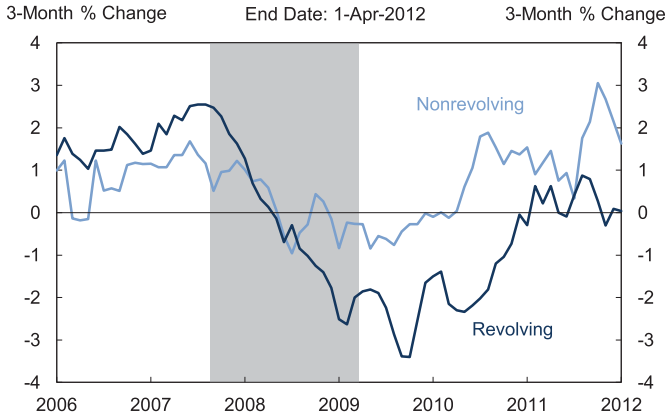
Delinquency rates for consumer credit remain low. Student loan delinquencies and defaults are above pre-crisis level, but are below the peaks seen during the recession. Relatively low delinquency rates for revolving credit and auto loans likely reflect, in part, the composition shift toward higher-quality borrowers. In particular, the increases in delinquency rates on credit card and auto loans during the crisis were largely driven by a sharp rise in the delinquency rate of subprime borrowers, which remains significantly above historical levels **(Chart 4.2.20)**. In contrast, the delinquency rates on credit card and auto loans to super prime and prime consumers were more stable through the crisis and are currently at their historical averages.

At the same time, demand for credit by most consumers continues to be modest relative to the pre-crisis period as households continue to recalibrate their balance sheets in the wake of large wealth losses during the crisis, tepid gains in labor markets, moderate economic growth, and economic uncertainties. Only a small fraction of respondents to the SLOOS, on net, report stronger demand for credit by consumers. Looking across the credit spectrum, credit applications increased slightly over the past year but, through the first quarter of 2012, remained largely subdued relative to the pre-crisis period **(Chart 4.2.21)**.

4.3 Government Sectors

Government finances in the United States deteriorated sharply during the recession, as public sector borrowing largely replaced private borrowing in credit markets **(Chart 4.3.1)**. *So far, global financial markets have been able to absorb the substantial increase in U.S. federal debt, but*

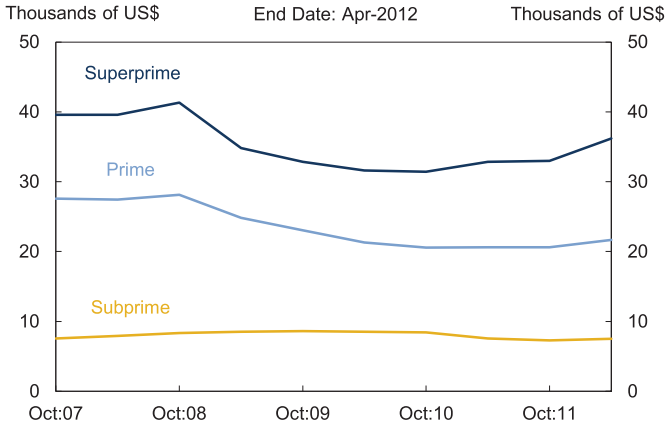
Chart 4.2.18 Nonmortgage Consumer Credit Flows



Source: Federal Reserve

Note: Gray bar signifies NBER recession.

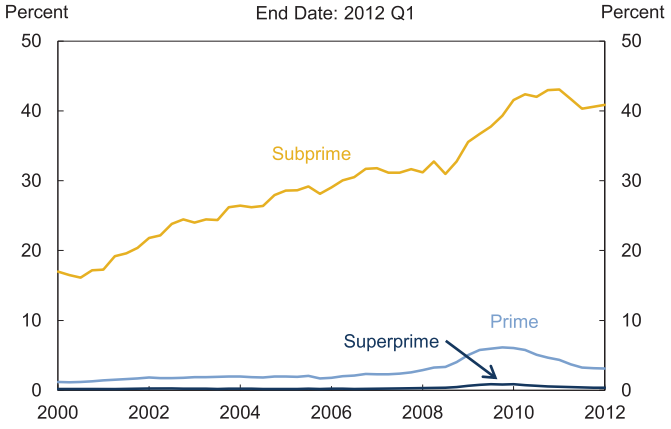
Chart 4.2.19 Average Amount of Revolving Credit Available



Source: FICO

Note: Subprime < 650, Prime 650-749, Superprime ≥ 750.

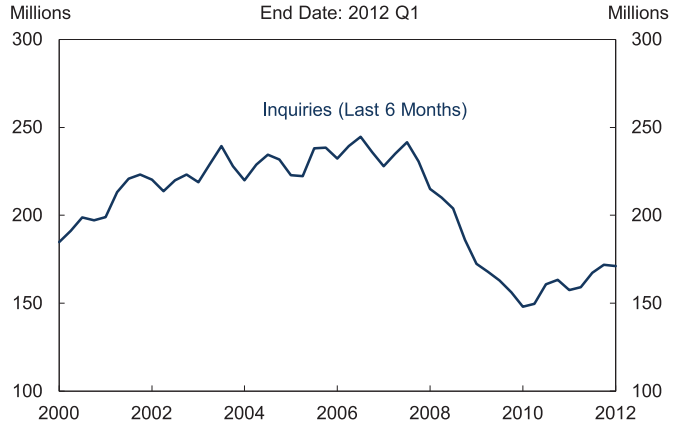
Chart 4.2.20 Credit Card Delinquency Rates by Credit Score



Source: Equifax

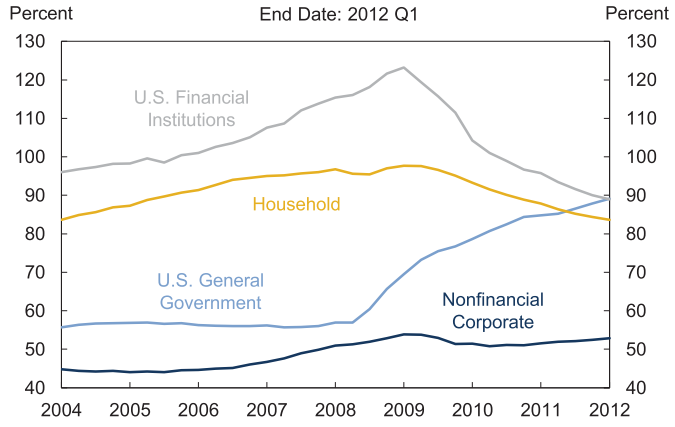
Note: Subprime < 659, Prime 659-780, Superprime > 780.

Chart 4.2.21 Applications for Credit



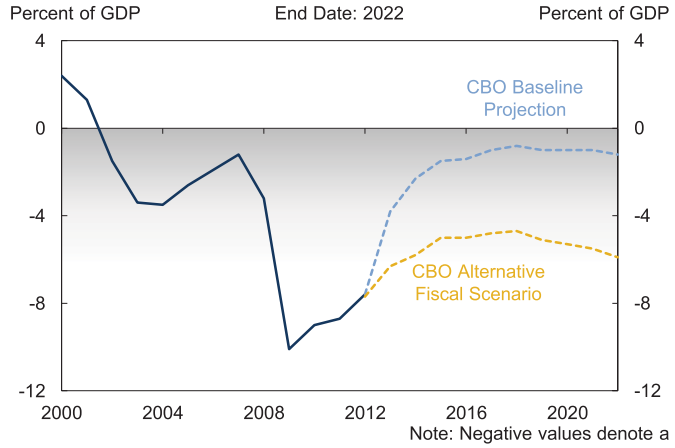
Source: FRBNY

Chart 4.3.1 Net Debt Outstanding as a Percent of GDP



Source: Flow of Funds, BEA, Haver Analytics

Chart 4.3.2 Federal Unified Budget Surplus



Source: Congressional Budget Office

Note: Negative values denote a deficit. Data for fiscal years.

concerns about the prospects for meaningful deficit reduction in coming years persist.

4.3.1 Federal Government

The deficit in the federal unified budget widened significantly during the recession and gradually narrowed thereafter. The Congressional Budget Office (CBO) projects the deficit in the current fiscal year to be 7.6 percent of nominal GDP—1.1 percentage points lower than in 2011 but substantially above the average value of 1.3 percent of GDP for pre-crisis fiscal years 2000 to 2007 **(Chart 4.3.2)**. This appreciable increase in the deficit mostly reflects the usual cyclical response of revenues and spending to a weak economy, as well as the fiscal actions taken to ease the effects of the recession and aid the recovery.

The outlook for the budget over the medium term is subject to considerable uncertainty with respect to both the performance of the economy and the policy path that will be followed. The CBO presents two scenarios based on different assumptions about expenditure and tax configurations. In the CBO baseline projection for the period through 2022, which assumes that current laws generally remain unchanged, the deficit shrinks appreciably over the next couple of years and remains small thereafter. However, in the CBO "Alternative Fiscal Scenario," which is arguably more plausible because it generally maintains the tax and spending policies that have recently been in effect, the deficit narrows much less in the near term and turns back up after 2018, mainly because of the budgetary pressures stemming from the aging of the population and rapidly rising costs for health care. Consistent with this projection for the deficit, federal debt held by the public is expected to rise from 68 percent of GDP at the end of fiscal year 2011 to 93 percent of GDP in 2022 **(Chart 4.3.3)**.

Concerns about the budget outlook weighed on the rating agencies' assessments of U.S. sovereign debt. In August 2011, Standard and Poor's downgraded the long-term sovereign credit rating of the United States, citing that

the effectiveness, stability, and predictability of American policymaking and political institutions had weakened at a time of fiscal and economic challenges. **(See Box A: Impacts of Downgrade of U.S. Treasury Securities.)** Moody's and Fitch have U.S. sovereign debt on negative outlook. These rating actions do not appear to have affected the demand for Treasury securities, as market participants continue to purchase U.S. debt for its relative safety and liquidity. Bid-to-cover ratios at Treasury security auctions remain at the top end of historical ranges, and indicators of foreign participation have remained on trend with recent years.

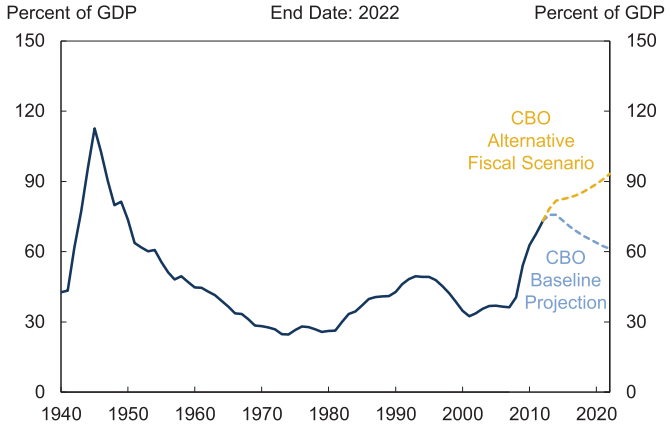
Despite the sizable increase in public debt outstanding, net interest costs amounted to only about 1.5 percent of GDP in recent years, consistent with trends of the past decade but lower than average values during the 1990s of about 3 percent of GDP **(Chart 4.3.4)**. This decline reflects the fact the interest rates have fallen to historically low levels even as debt outstanding has increased. The average maturity of public debt outstanding has risen sharply since late 2008 and is above its 30-year average.

4.3.2 State and Local Governments

State and local budgets were strained during the recession, and municipalities continue to struggle to repair their fiscal positions. From the middle of 2008 to April 2012, these governments cut roughly 650,000 jobs (more than 3 percent of their workforces) and trimmed other operating expenditures to satisfy balanced budget requirements. They have also reduced capital expenditures, which, in real terms, have fallen to their lowest levels since the late 1990s. In part because of the weakness in capital spending, state and local borrowing has decelerated noticeably since the onset of the recession, and posted a small decline in 2011 and in the first quarter of 2012 **(Chart 4.3.5)**.

State and local government tax revenues, in aggregate, began to register mild growth in 2010 after declining in the aftermath of the

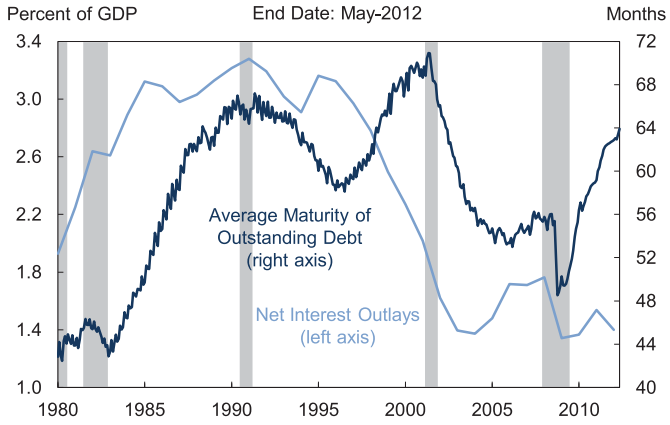
Chart 4.3.3 Federal Debt Held by the Public



Source: Congressional Budget Office

Note: Data for fiscal years.

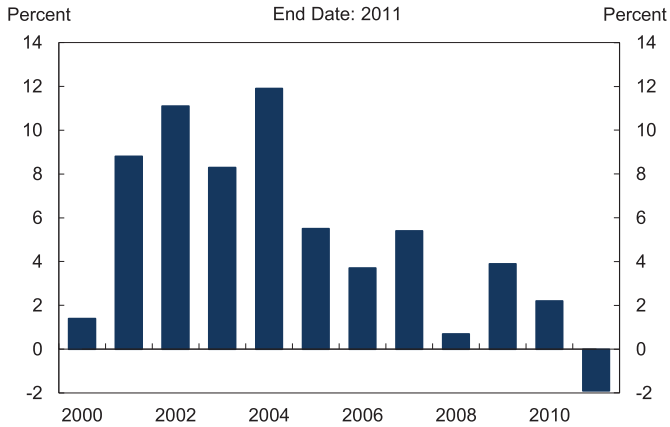
Chart 4.3.4 Interest Outlays and Average Maturity of U.S. Public Debt



Source: OMB, U.S. Department of Treasury

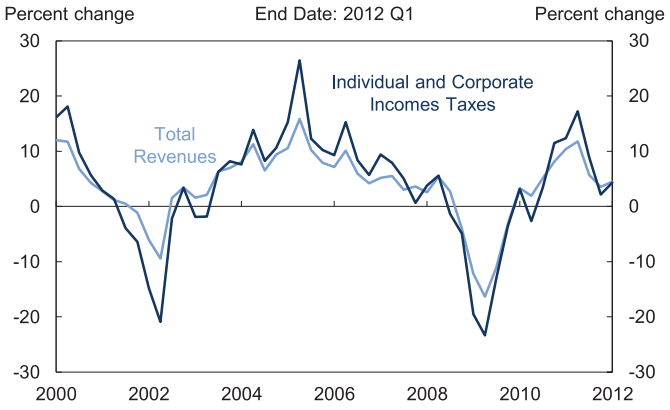
Note: Gray bars signify NBER recessions. 2012 outlays data is an OMB estimate.

Chart 4.3.5 Change in State and Local Government Debt



Source: Flow of Funds

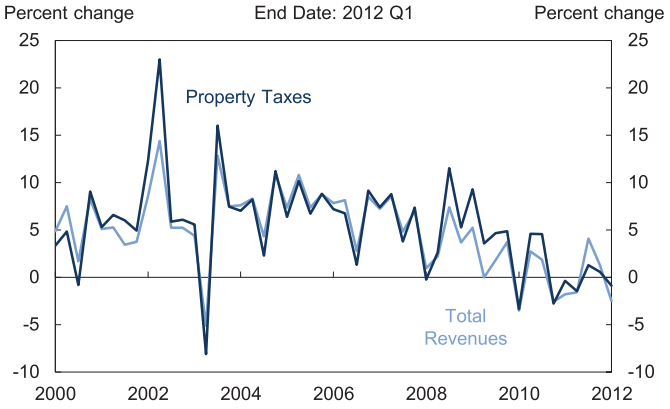
Chart 4.3.6 Change in State Tax Revenue



Source: Census Bureau

Note: Percent change from same quarter 1 year ago. Total Revenues is a sum of all tax revenue components.

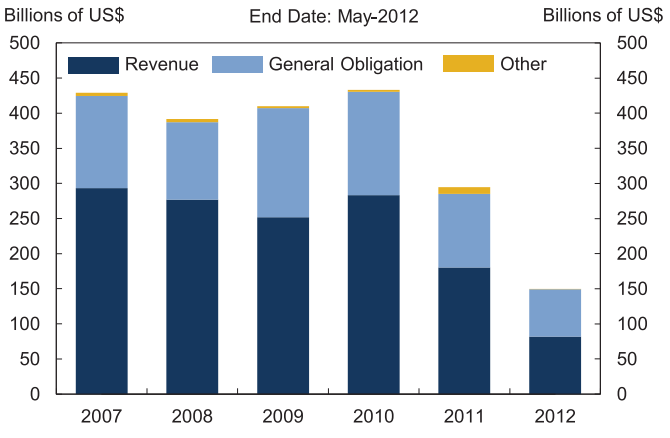
Chart 4.3.7 Change in Local Tax Revenue



Source: Census Bureau

Note: Percent change from same quarter 1 year ago. 2008:Q4-2009:Q3 adjusted to reflect change in sample. Total Revenues is a sum of all tax revenue components.

Chart 4.3.8 Municipal Bond Issuance by Type



Source: Thomson Reuters

Note: 2012 is year-to-date data.

financial crisis **(Chart 4.3.6)**. Much of the improvement has been at the state level, where personal income tax receipts in particular have picked up as the economic recovery has proceeded. In contrast, tax collections at the local level have exhibited essentially no growth over the past two years, mainly because property tax collections, which account for roughly three-fourths of local tax revenues, have been depressed by the downturn in home prices and a reluctance to raise tax rates at a time when real incomes of constituents are under pressure **(Chart 4.3.7)**.

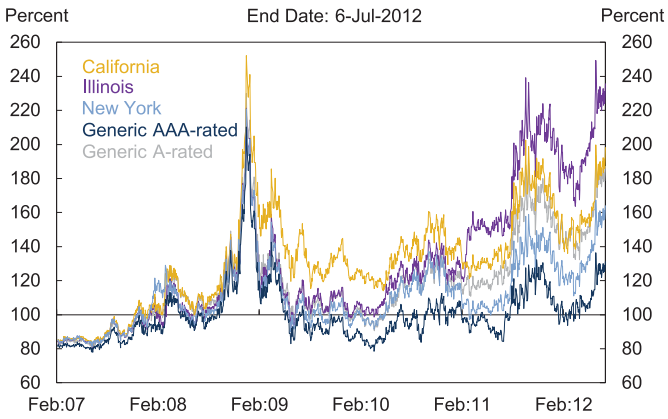
Overall, the resources available to state and local governments to finance their spending remain tight. The sector's tax revenues are only slightly higher than they were in 2008. The federal stimulus grants provided under the American Recovery and Reinvestment Act of 2009 have largely wound down, and other initiatives (e.g., the Build America Bonds program) have expired. Many states have cut back on assistance to their localities in order to shore up their own budgets. Finally, balances in reserve funds, which provide an important safety valve in times of budgetary stress, have been depleted in many cases.

As a result of these budgetary issues, net credit flows to state and local governments have been mixed over the past year. While the amount of revenue bonds issued continues to exceed the amount of general obligation bonds, the share of general obligation bonds among the total issuance increased substantially in 2012 **(Chart 4.3.8)**. Net issuance of municipal bonds has been slow as of late, in part reflecting the weakness in infrastructure investment and ratings downgrades by Moody's over the past 12 months, which have substantially outpaced upgrades. At the same time, the cost of municipal bonds—as measured by the yield ratio to similar maturity Treasury securities—has risen, with investors demanding higher returns from issuers facing fiscal challenges **(Chart 4.3.9)**. The issuance of Variable Rate Demand Obligations (VRDOs), an important source of funding for municipalities, has

also been declining since the financial crisis **(Chart 4.3.10)**. A primary reason is the gradual retraction of European banks from providing liquidity to this market.

Budget trajectories will remain challenged in coming years, as many state and local governments will need to increase their contributions to their employee pension funds, both to rebuild assets after experiencing significant financial losses and to address chronic underfunding during the past decade. In addition, many governments are not setting aside money to fund their ongoing obligations to provide health care to their retired employees. Unfunded liabilities remain substantial. Estimates of aggregate unfunded pension liabilities span a wide range, in part because of differences in how liabilities are valued, but may be in the range of $2 trillion to $3 trillion. (For an additional discussion of accounting issues related to state and local pension funds, see Section 5.3.5.) Estimates for the cost of providing retiree health benefits are subject to even greater uncertainty, in part because of the difficulty of projecting health care costs decades into the future, but one estimate put the states' collective unfunded liability as of 2010 at over $625 billion.

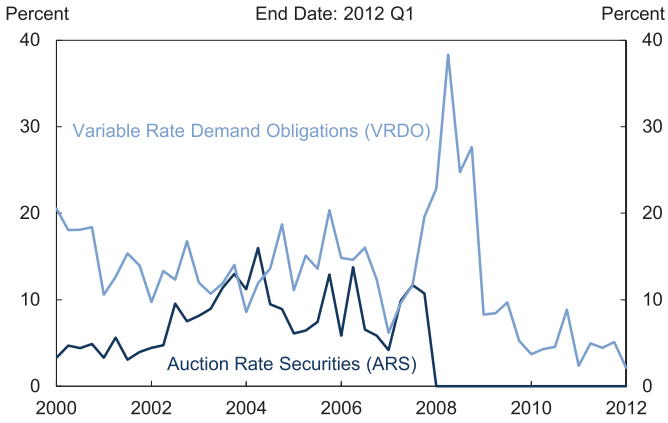
Chart 4.3.9 Municipal Tax-Exempt Bond Yield Ratios



Source: Bloomberg

Note: General Obligation 10-year Municipal Bond Yields to 10-year Treasury Yields.

Chart 4.3.10 ARS and VRDO Funding of Long-Term Muni Bonds



Source: Thomson Reuters

Note: Maturity at issuance greater than 13 months.

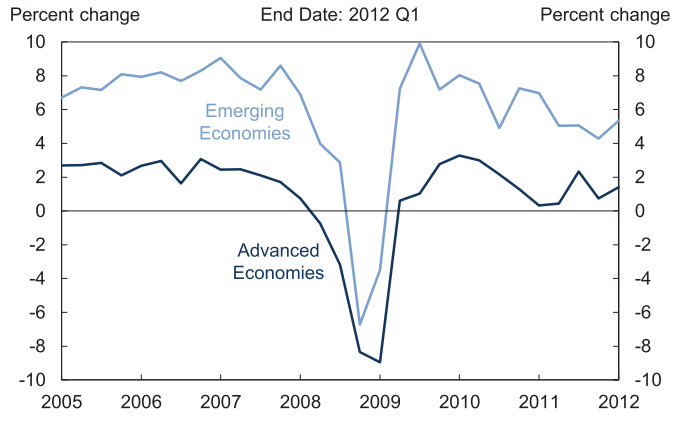
4.4 External Environment

Outside of the United States, both realized and prospective growth rates have been mixed over the past year. The primary financial stability focus has been on the developments in Europe. Despite ongoing efforts by European authorities to contain the crisis, debt sustainability concerns, fiscal consolidation efforts, bank deleveraging, and funding market stresses on banks and sovereigns continue to weigh on European growth prospects. Outside of the euro area, foreign growth picked up in 2012:Q1, with lower growth in the euro area and China partly offset by more positive developments in other regions. The tone of the incoming data in 2012:Q2 is decidedly weaker.

4.4.1 Advanced Foreign Economies

In the aggregate, the advanced economies maintained positive growth through 2011 and

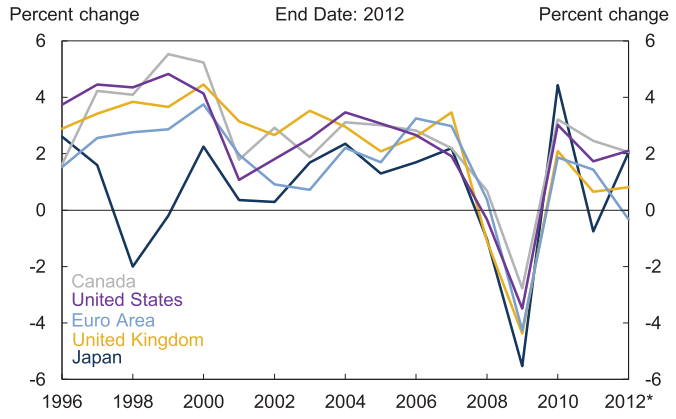
Chart 4.4.1 Real GDP Growth



Source: EMED, CEIC, Haver Analytics, FRBNY Calculations

Note: Seasonally adjusted, annualized rate.

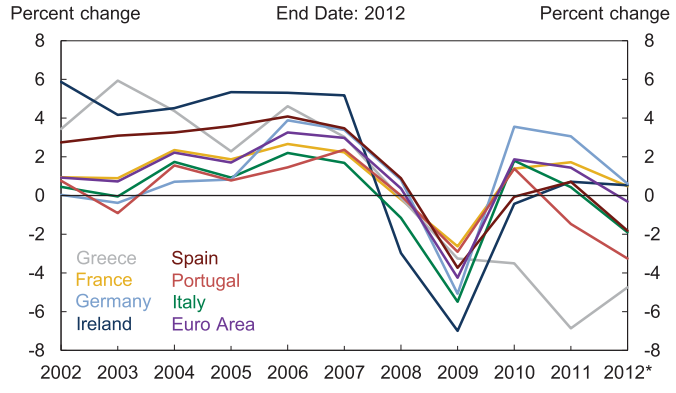
Chart 4.4.2 Developed Market Economies GDP Growth



Source: IMF, World Economic Outlook Database, April 2012

*Note: Year-over-year percent change. 2012 data is an IMF estimate.

Chart 4.4.3 Euro Area GDP Growth



Source: IMF, World Economic Outlook Database, April 2012

*Note: Year-over-year percent change. 2012 data is an IMF estimate. Not all euro area countries are included.

early 2012 **(Chart 4.4.1)**. The growth rates across advanced economies reflect a mix of more positive outcomes in the United States and Japan, among others, and the challenges within European countries in managing fiscal problems, bank funding stress and deleveraging, and structural change **(Chart 4.4.2)**.

Euro Area Economic Conditions and Policy Initiatives

Over the last 12 months, the euro area sovereign debt crisis intensified as concerns about the sustainability of public finances and the robustness of banks in some countries soared. Some European financial institutions faced reduced access to funds, reflecting in part their large exposures to stressed sovereigns as well as their reliance on wholesale funding markets, including short-term dollar funding provided by money market funds. European leaders recognize the need to deepen their economic and monetary union, as exemplified by the new fiscal compact treaty signed by most European Union (EU) members in March 2012 and by the proposal to establish a single European banking supervisor put forth in June 2012. Work continues on elaborating a system-wide solution capable of commanding both political and market support.

The euro area economies experienced a widespread slowing of economic activity due to the intensification of the crisis, the effects of banking problems and the related bank deleveraging on lending to the real economy, and the impact of fiscal consolidation efforts. Despite various measures implemented by the European authorities to combat the crisis, discussed below, the euro area GDP contracted by 1.2 percent (annual rate) in the fourth quarter of 2011, and the GDP growth rate for the first quarter of 2012 was near zero. Similarly, labor market conditions deteriorated further, as the unemployment rate reached 11.1 percent in May 2012, the highest level since 1995.

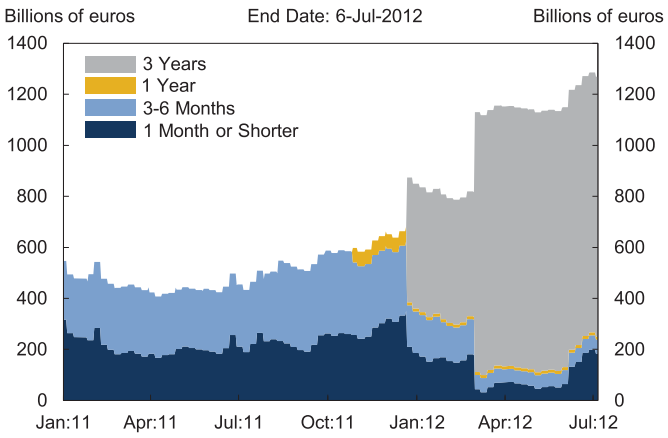
Growth prospects in the euro area differ across countries **(Chart 4.4.3)**. Germany, France, and

Ireland continue to grow, although at a more subdued pace, while Italy, Spain, Portugal, and Greece are projected to contract, with unemployment rates rising substantially. Vulnerable European countries continue to face important challenges as they strive to improve fiscal positions, strengthen vulnerable banks, and carry out structural reforms to improve their long-term growth outlook, even as short-term growth is weak or negative. The stresses in the sovereign debt markets of euro area countries are discussed in greater detail in Section 5.1.

European authorities responded to these developments with a number of policy measures. In response to Greece's plunging output and challenges meeting fiscal targets, EU and IMF officials, the Greek government, and private creditors finalized an enhanced rescue package in February 2012. This package included a more ambitious private-sector debt exchange involving a significant principal write-down, together with additional official financing through early 2016. **(See Box B: Greek Sovereign Debt Restructuring.)**

Additionally, European authorities took actions to improve the fiscal governance in the region and to enhance their ability to provide financial support to euro area countries under stress. EU members, excluding the United Kingdom and the Czech Republic, signed a new fiscal compact treaty designed to strengthen fiscal rules, enhance surveillance, and improve enforcement. This treaty, if ratified, would require countries to legislate national fiscal rules and should generally limit structural fiscal deficits to 0.5 percent of GDP. Authorities moved up the introduction of the European Stability Mechanism (ESM), a permanent €500 billion lending facility, to July 2012—about a year earlier than originally planned. In addition, they agreed to increase the combined lending capacity of their rescue facilities from €500 billion to €700 billion, of which €500 billion remains uncommitted. Moreover, European authorities augmented the scope and flexibility of the existing facilities, empowering

Chart 4.4.4 ECB Liquidity Providing Operations



Source: ECB

them to purchase sovereign debt in primary and secondary markets and offer debt guarantees.

European policymakers also took steps to strengthen the capital positions of euro area financial institutions. In October of 2011, the European Banking Authority (EBA) announced that large banks would be required to build up "exceptional and temporary" capital buffers to meet a core tier one capital ratio of 9 percent and cover the cost of marking to market their sovereign debt exposures by the end of June 2012. According to a December 2011 EBA report, 62 banks intended to create capital buffers equivalent to €98 billion, about 25 percent larger than required. (This does not include the Greek banks and three other institutions that would be recapitalized separately by national authorities.) More recently, in June 2012, Spain requested EU assistance to recapitalize its banking sector. **(See Box C: Recent Fiscal and Banking Developments in Spain.)** Finally, in an effort to address the link between banks and sovereigns, euro area leaders agreed in late June 2012 to establish a single supervisory mechanism for banks in the euro area and to grant the ESM the possibility of recapitalizing banks directly.

Meanwhile, the European Central Bank (ECB) adopted various policy measures to support liquidity conditions in financial markets. First, in August 2011, the ECB resumed purchases of euro area marketable debt, including the debt of Italy and Spain, in order to improve the functioning of sovereign debt markets and facilitate the transmission of monetary policy in the region. Then, in December 2011, the ECB eased rules on collateral for ECB refinancing operations and scheduled two longer-term refinancing operations (LTROs) to improve banks' funding conditions. With the LTROs, the value of outstanding ECB liquidity providing operations has increased to over €1.25 trillion **(Chart 4.4.4)**. Moreover, in November 2011, the Bank of Canada, the Bank of England, the Bank of Japan, the ECB, the Federal Reserve, and the Swiss National Bank engaged in coordinated actions to enhance

their capacity to provide liquidity support to the global financial system. In particular, the reduced fees applied to draws on dollar liquidity swap lines provided by the Federal Reserve, as well as the extended expiration of these facilities, were intended to ease strains in financial markets and thereby mitigate the effects of such strains on the supply of credit to households and businesses.

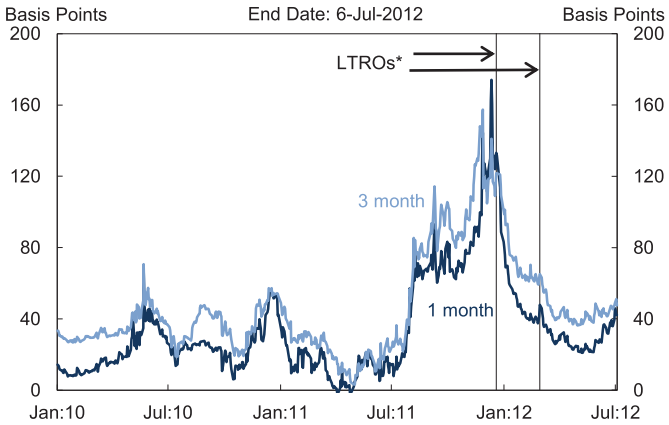
These measures contributed to improvements in euro area financial conditions during the first few months of this year, with dollar funding pressures substantially diminished. The net result was a considerable narrowing of euro-dollar foreign exchange (FX) swap basis spreads, reflecting reduced short-term dollar funding pressure for euro area institutions **(Chart 4.4.5)**. Recent utilization of the dollar liquidity swap lines peaked at over $100 billion in February 2012, with the outstanding amount for the Federal Reserve's dollar liquidity swap lines at $28 billion as of July 4 **(Chart 4.4.6)**.

Growth and financial stability conditions in the euro area remain under pressure. Market participants are attentive to the limited capacity of the euro area financial backstop in the context of its multiple possible uses. Although the Greek debt restructuring and subsequent triggering of credit default swap (CDS) contracts, discussed further in **Box B: Greek Sovereign Debt Restructuring**, passed without broad market disruption, much uncertainty remains in the region. Uncertainty about fiscal consolidation and structural reform highlight the challenges of adjustment within a monetary union. Meanwhile, concerns about other European peripherals (including Portugal, Ireland, Italy, and Spain), especially around fiscal sustainability, health of their banking sectors, and general competitiveness of their economies, continue to weigh on real growth and financial activity in these countries.

4.4.2 Emerging Market Economies

In the second half of last year, economic growth in many EMEs slowed slightly, as earlier policy tightening, a weakening of external demand

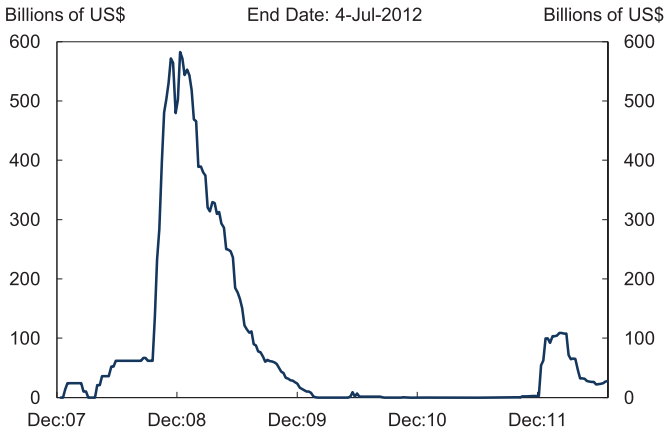
Chart 4.4.5 Euro-Dollar Implied FX Swap Basis



Source: Bloomberg, FRBNY calculations

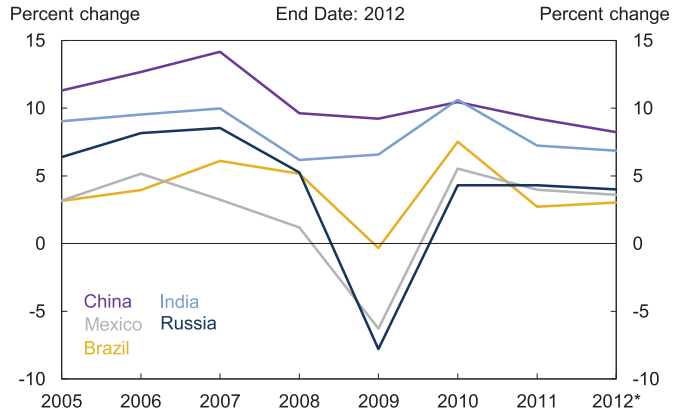
*Note: LTRO = longer-term refinancing operation.

Chart 4.4.6 Total Swap Line Amount Outstanding



Source: Federal Reserve

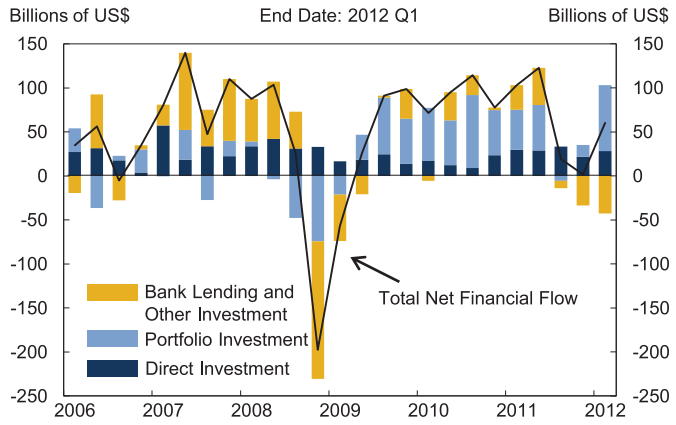
Chart 4.4.7 Emerging Market Economies GDP Growth



Source: IMF, World Economic Outlook Database, April 2012

*Note: Year-over-year percent change. 2012 data is an IMF estimate.

Chart 4.4.8 Net International Financial Flows to EMEs



Source: Haver Analytics, FSOC calculations

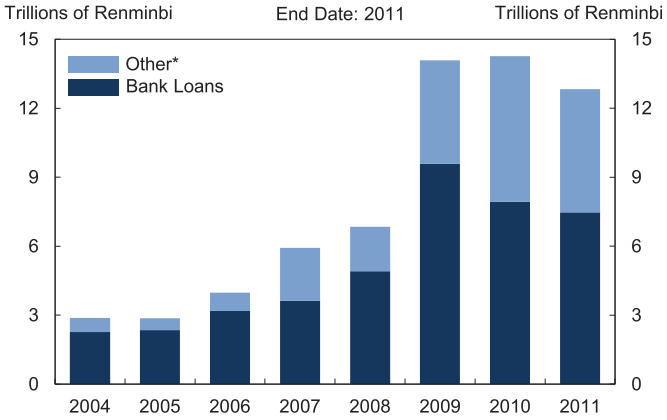
owing to the fiscal crisis in Europe, and supply chain disruptions stemming from floods in Thailand weighed on growth **(Chart 4.4.7)**. At the beginning of this year, growth in EMEs rebounded, reflecting a restoration of the normal supply chain and some improvement in demand from advanced economies. However, the indicators for the second quarter of 2012 suggest significantly weaker activity in EMEs.

On balance, EMEs have received substantial volumes of net inflows of capital since late 2009, which also contributed to currency appreciation pressures. These inflows decelerated in the second half of last year, reflecting both a general flight to safety and concerns about growth spillovers from the deteriorating situation in Europe **(Chart 4.4.8)**. Declining commodity prices are also a concern for some emerging economies, particularly in Latin America. Overall, while growth across major EMEs, including Brazil, Mexico, India, Russia, and China, stayed firmly in positive territory, these global headwinds weighed on local prospects.

Chinese growth prospects remain relatively solid by international standards. Year-over-year growth slowed in 2012:Q1 to just above 8 percent, reflecting weaker investment spending, with macro-prudential restrictions weighing on the property sector, and slower export growth, especially to Europe. A possible hard landing of the Chinese economy is a risk that could spill over to other EMEs and the global economy, which has created some anxiety in financial markets. There are growing concerns that weaker external demand in the advanced economies, combined with a deceleration in domestic investment, could lead to a more prolonged economic slowdown in China than was previously expected. Another source of concern is the movement of savings into less-well-regulated nonbank financing channels in an effort to obtain higher yields. Finally, additional risks could emerge from stresses in the banking sector, stemming from the massive increase in credit to the domestic economy ("social financing" in the official Chinese

terminology), deployed as part of China's policy response to the global financial crisis in 2008-2009 **(Chart 4.4.9)**. To contain a potential run-up in inflation, property prices, and debt levels resulting from this credit expansion, Chinese authorities began taking a tighter monetary stance in late 2010, with some success. But with the latest data pointing to weaker-than-expected economic activity in China in the first five months of 2012, authorities began implementing a number of fiscal and monetary measures to support growth.

Chart 4.4.9 Change in Total Chinese Social Financing



*Note: Includes other forms of credit such as trust loans and bank acceptances.

Source: CEIC

5 Financial Developments

5.1 Major Financial Markets

5.1.1 Sovereign Debt Markets

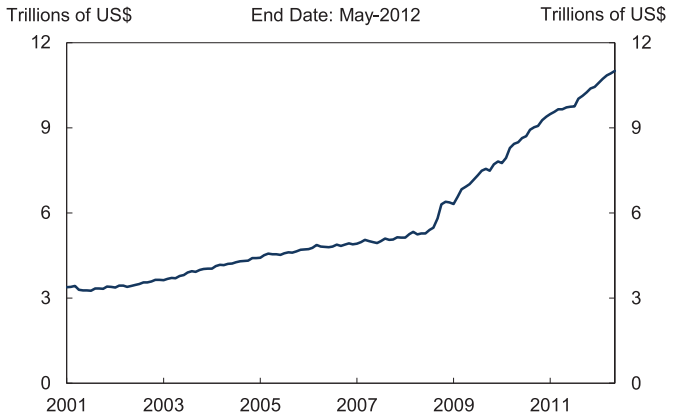
Developments in sovereign debt markets during the last year were heavily influenced by the escalation of uncertainty in euro area sovereign and banking sectors and by continued concerns about the domestic and global growth outlook. While sovereign debt from the euro area periphery remains stressed, yields for sovereign debt from the United States, the United Kingdom, Germany, Switzerland, and Japan are at record or near-record lows, reflecting flight to quality and continued expectations of accommodative monetary policy.

U.S. Sovereign Debt

The total amount of outstanding U.S. sovereign debt has risen to $11.0 trillion as of May 31, 2012 **(Chart 5.1.1)**. Despite this increase in supply, the U.S. sovereign yield curve flattened considerably since mid-2011, with a decline in longer-term yields driving this change **(Chart 5.1.2)**. The historically low levels of longer-term yields are a reflection of both flight to quality and continued monetary policy accommodation associated with the weak pace of economic growth and the elevated unemployment rate.

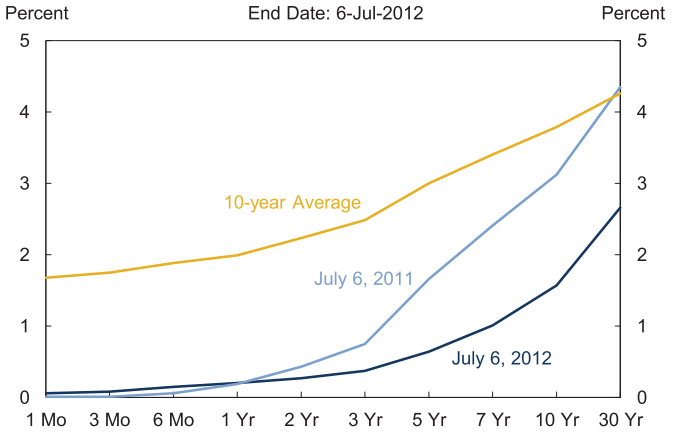
Foreign holdings of U.S. debt remain substantial, with over $2.2 trillion of U.S. Treasury securities held by China and Japan and almost $3 trillion across other foreign holders in April 2012 compared to about $2 trillion and $2.4 trillion, respectively, in April 2011 **(Chart 5.1.3)**. Nearly three-quarters of these holdings are by foreign official entities.

Chart 5.1.1 Federal Debt Outstanding Held by Public



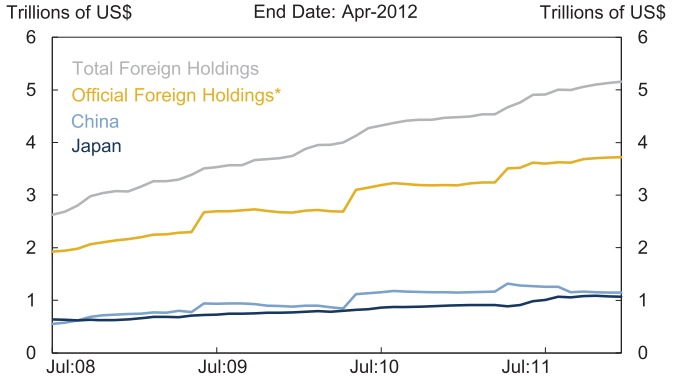
Source: U.S. Department of Treasury

Chart 5.1.2 Yield Curve



Source: U.S. Department of Treasury

Chart 5.1.3 Foreign Holders of U.S. Federal Debt



*Official institutions = governments and multinational institutions involved in international monetary policy.

Source: U.S. Department of Treasury

Note: Data based on annual survey results. June benchmark surveys each year represent most accurate information.

BOX A: IMPACTS OF DOWNGRADE OF U.S. TREASURY SECURITIES

On August 5, 2011, Standard & Poor's (S&P) lowered their long-term sovereign credit rating on the United States of America to AA+ from AAA and reaffirmed their short-term rating of A-1+. S&P stated that the downgrade reflected their opinion that the Budget Control Act, which was signed into law on August 2, fell short of what would be "necessary to stabilize the government's medium-term debt dynamics." They further stated that, "More broadly, the downgrade reflects our view that the effectiveness, stability and predictability of American policymaking and political institutions had weakened at a time of ongoing fiscal and economic challenges."

Before the downgrade, there was significant market focus on the debt ceiling debate in Congress. As the deadline approached, there were dislocations in the front end of the Treasury yield curve, and some T-Bill yields rose dramatically then normalized after the debt limit was raised.

Because of widespread speculation in the market that S&P would take action, and the relatively minor scale of the downgrade, Treasury market participants were prepared, and there were no reports of forced selling. Also, many institutions' portfolio restrictions specifically carved out "obligations of the U.S. government" rather than specifying a level or degree of credit rating.

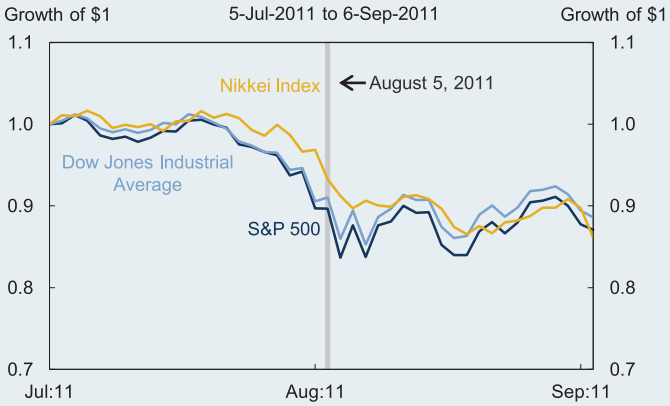
Treasury yields fell immediately following the downgrade, while major stock indices declined, indicating that investors were less concerned with the inherent riskiness of Treasury securities than with the potential consequences of fiscal retrenchment for the near-term macroeconomic recovery. Specifically, on Monday August 8 (the business day immediately following the downgrade), the 10-year Treasury yield closed down 24 basis points. The cumulative yield changes through August 11 for the two-year, five-year, and ten-year yields were -10 basis points, -23 basis points, and -22 basis points, respectively **(Chart A.1)**. Risky securities lost value following news of the downgrade, with the S&P 500 index registering a 6.8 percent decline and the Nikkei index falling by 2.2 percent by close of trading August 8 **(Chart A.2)**.

Chart A.1 S&P Downgrade of U.S. Debt: Flight to Quality

Source: Bloomberg, Haver Analytics

*Note: Spread to Treasuries.

Chart A.2 S&P Downgrade of U.S. Debt: Effect on Equities



Source: Bloomberg

In addition to the U.S. sovereign rating, several other entities were downgraded shortly after August 5. These included clearinghouses, highly rated insurers, and various government related entities and their debt.

There was little market reaction to a move by the Chicago Mercantile Exchange (CME) to increase haircuts on U.S. Treasury securities just before the downgrade, and most clearinghouses did not adjust their haircuts on Treasury securities even after the downgrade.

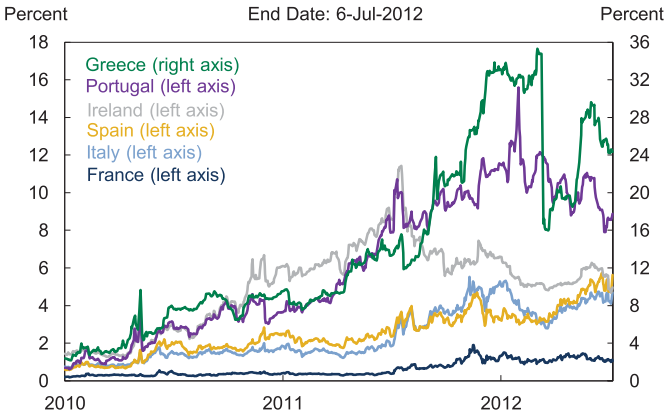
European Sovereign Debt

Over the last 12 months, the European fiscal crisis intensified as concerns about the sustainability of public finances in peripheral European countries escalated and banks struggled to obtain financing. (See Section 4.4.) In July 2011, euro area authorities proposed a voluntary debt exchange on Greek sovereign bonds. This, along with weakening growth prospects and fiscal slippage, led to a surge in Greek government bond yields **(Chart 5.1.4)**.

As discussed in Section 4.4, European authorities responded to these developments with a number of policy measures. The private sector exchange of Greek sovereign debt, which was largely concluded in March of this year, involved a significant principal write-down and additional official disbursements of aid financing through early 2016. The insertion and triggering of collective action clauses for the purpose of the debt exchange caused credit default swaps (CDS) contracts written on Greek sovereign debt to be triggered, which occurred without any significant market disruptions. The participation rate in this exchange was over 95 percent. **(See Box B: Greek Sovereign Debt Restructuring.)**

More recently, market pressure on Spain intensified. On May 11, the Spanish government announced a series of measures to address vulnerabilities in the Spanish banking sector, including enhanced provisioning requirements on real estate related loans, clear separation of problem real estate assets into independently managed asset management vehicles, and plans to have independent external auditors evaluate the quality of bank assets. This was followed two weeks later by an unexpectedly large capital support request from Bankia, Spain's fourth largest bank, and on June 9 by Spain's announcement of its intent to request European support for bank recapitalization (for which European authorities agreed to provide up to €100 billion). **(See Box C: Recent Fiscal and Banking Developments in Spain.)**

Chart 5.1.4 Euro Area 10-Year Yield Spreads to German Debt



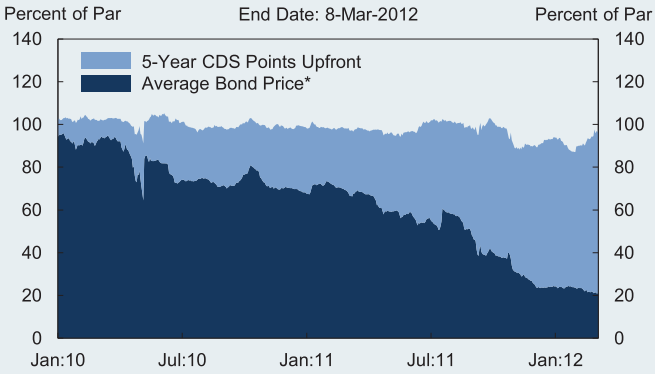
Source: Bloomberg

Note: After Oct-2011, Ireland switched to a 9-yr benchmark bond. Other series are 10-yr benchmark yields.

BOX B: GREEK SOVEREIGN DEBT RESTRUCTURING

In March and April 2012, Greece restructured approximately €199 billion in government and government-guaranteed debt through a discounted exchange of instruments. Due to the use of collective action procedures, the restructuring was subsequently deemed a credit event by the International Swaps and Derivatives Association (ISDA), triggering payouts on Greek credit default swaps (CDS). In the aftermath of the Greek restructuring event, the CDS market largely functioned as intended. Despite early attempts to achieve a purely voluntary restructuring that would have circumvented a CDS trigger, low preliminary participation rates indicated a need to trigger collective action clauses to force higher participation, which in turn triggered CDS payouts **(Chart B.1)**.

Chart B.1 Greece: Average Bond Price and CDS

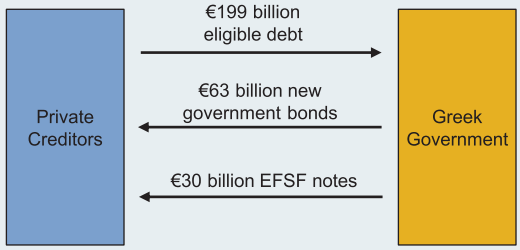


Stacked chart: points upfront plus price sum to approximately 100.
*Unweighted average, constructed hybrid of pre- and post-exchange bonds.

Source: Bloomberg, Markit

The exchange reduced Greece's debt held by the private sector by €106 billion, equivalent to 53.5 percent of the tendered debt. Creditors participating in the exchange received a combination of new Greek government bonds (31.5 percent for a total of €63 billion) and short-term European Financial Stability Facility (EFSF) notes (15 percent for a total of €30 billion) **(Chart B.2)**. Participating creditors also received detachable GDP warrants, which pay up to 1 percent of the outstanding bonds' face amount in years when real GDP growth and nominal GDP exceed specified targets. Taking into consideration the lower coupons and extended maturities of the new bonds, the exchange entailed net present value losses for participating creditors estimated at 75-80 percent. CDS protection sellers subsequently paid out only an estimated $2.5 billion to protection buyers, reflecting the relatively small net exposure to outstanding CDS contracts.

Chart B.2 Greece: Debt Exchange



Source: Greek Public Debt Management Agency, FRBNY calculations

As with all International Monetary Fund (IMF) programs, sustainable debt dynamics were a pre-condition for European Union (EU) and IMF lenders to disburse funds under a second official sector aid program. Greece's debt restructuring helped to achieve this, putting Greece's high public debt burden (165 percent of GDP in 2011) on a path toward 120 percent by 2020. Although the debt exchange substantially reduced Greece's outstanding debt to private sector creditors, Greece's overall debt burden is expected to remain quite heavy, reflecting continued borrowing from official sector creditors to finance the debt exchange, bank recapitalization costs related to losses resulting from the debt exchange and deteriorating asset quality, and continued deficit financing. As a result, public sector creditors are projected to hold nearly three-quarters of Greek sovereign debt by end of 2012. The new Greek bonds trade at distressed levels; yields hovering near 20 percent reflect Greece's heavy indebtedness and the high degree of uncertainty about the outlook for implementation of Greece's reform program. On June 17, parties supporting the EU/IMF aid program won enough seats in the Greek Parliament to form a governing majority, easing fears about a near-term exit from the euro and confirming Greece's commitment to reform.

The strains in the peripheral euro area sovereign debt and bank funding markets also caused additional pressure in some core countries, such as France. In August 2011, the central banks of the euro system recommenced purchasing euro area sovereign bonds, including Spanish and Italian bonds, in the context of the Securities Markets Programme (SMP), to address the severe tensions in some market segments that had been hampering monetary policy transmission. This activity occurred in the context of intensified strains in peripheral sovereign debt markets, widening credit spreads and bid-ask spreads, particularly for Spanish and Italian sovereign debt, and sharply higher liquidity risk premia. As funding markets tightened further, euro area governments announced plans for enhanced fiscal and structural reforms, while central banks announced the extension and repricing of U.S. dollar swap lines, and the European Central Bank (ECB) implemented two unprecedented three-year longer-term refinancing operations (LTROs), as discussed in Section 4.4.

These various measures helped stabilize markets in late 2011 and early 2012, as new governments were elected in Spain and Italy. However, general uncertainty over conditions in the euro area has increased once again over the past few months, as the sustainability of the strategies currently being undertaken in the hardest hit countries is called into question. Sovereign debt and bank credit spreads increased for Spain and Italy, after having narrowed over the first quarter of 2012. Credit spreads remain elevated in many sovereign debt and bank funding markets—notably for bank maturities beyond the ECB LTRO period of three years—and market functioning remains irregular with marked recent pressure on spreads in Italy and Spain. The primary buyers of Italian and Spanish sovereign debt in recent months have been their own domestic banks, which in turn rely on ECB financing and support. Private foreign investors, such as prime money market funds (see Section 5.3), have continued to reduce participation in euro area

BOX C: RECENT FISCAL AND BANKING DEVELOPMENTS IN SPAIN

Spain announced on June 9 that it intends to request European Union (EU) assistance to recapitalize its troubled banking sector. Euro area finance ministers indicated they would support the request for up to €100 billion (10 percent of GDP), which is expected to cover estimated stress-case capital needs plus an additional safety margin. On June 21, independent consultants engaged by the Spanish government estimated the recapitalization needs of Spanish banks at up to €62 billion under an adverse macroeconomic scenario. The formal request is expected to follow this estimate, which is within the range of most private estimates of capital needs (€50 billion to €100 billion). Although the announcement stipulates that no additional explicit conditionality will be imposed with regards to fiscal policy, Spain must meet existing fiscal and structural reform commitments, which were previously agreed with the EU.

On June 29, euro area heads of government agreed to use euro area funds to support Spanish banks. The region's finance ministers subsequently announced that the agreement would be signed on July 20 and an initial tranche of €30 billion would be disbursed by the end of July. The funds will be channeled through the EFSF to the Spanish government, and then transferred to the European Stability Mechanism (ESM) once it is fully operational. Direct ESM funding to Spanish banks will become available only after the establishment of a single supervisory mechanism for euro area banks. It was further agreed that aid for the Spanish banking sector would not be subject to the preferred creditor status embedded in the ESM treaty.

Separately, Moody's, S&P, and Fitch downgraded the Spanish sovereign by several notches into the BBB range within the last two months, largely reflecting concerns about the Spanish banking sector and fiscal performance. The sovereign downgrades were followed by downgrades of the banks themselves. Notably, the International Monetary Fund (IMF) concluded from its stress tests that Spain's largest banks appear sufficiently capitalized to withstand a significantly weaker macroeconomic environment, given their substantial earnings generation from international operations.

Concern about Spanish fiscal performance has persisted, fueling doubts about the prudence of adhering to strict budget targets amid deepening recession. As a result, euro area finance ministers agreed on July 9 to ease Spain's deficit objectives, raising the 2012 target by one percentage point to 6.3 percent of GDP and giving the government an additional year—to 2014—to lower the deficit below 3 percent of GDP. The agreement will be made official at the next Eurogroup meeting on July 20.

The relaxation of fiscal targets follows two revisions to the 2011 fiscal deficit. On May 20, the Spanish government revised its 2011 budget deficit upward to 8.9 percent of GDP from a previous 8.5 percent estimate, a major deviation from the 6 percent target. Both the overrun and the latest revision were driven by the deficits of regional governments, exposing the difficulty of reining in these regional deficits. Market reaction to developments in Spain subsequent to the assistance request was generally negative, with yields on 10-year Spanish sovereign debt exceeding 7 percent, a euro era high.

sovereign and bank funding markets. European pension funds and insurance companies also have reduced exposures to the periphery, including to Spanish and Italian sovereign debt.

Other Sovereign Debt

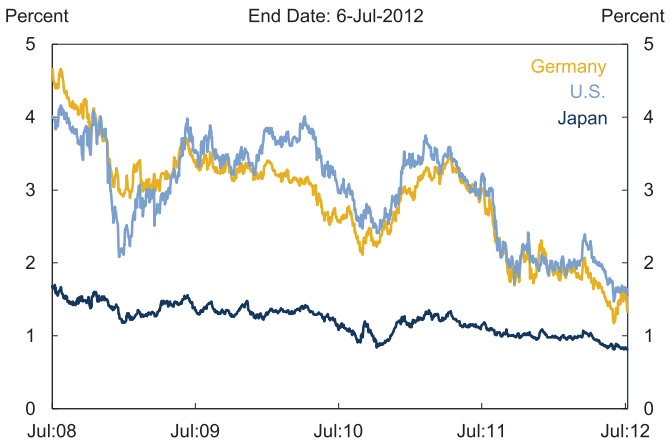
The decline in yields across a range of developed countries' sovereign bonds has been further reinforced by strong investor interest in high credit quality assets and more accommodative monetary policies. Through early July 2012, 10-year nominal U.S. Treasury yields had declined more than 150 basis points since July 2011, in part reflecting both the lower expected path of short-term interest rates and a fall in the term premium. The pattern of decline in yields has been similar for German, Swiss, and U.K. sovereign debt. In Japan, 10-year sovereign debt yields, which were already close to 115 basis points, declined more modestly to just below 85 basis points over the same period **(Chart 5.1.5)**.

Emerging European market spreads to Treasury yields as measured by the Emerging Markets Bond Index Plus (EMBI+), have widened over 100 basis points over the past year through early July—largely in line with U.S. BBB corporate credit spreads—reflecting global growth concerns and the pull-back in risk appetite, as well as specific developments in certain countries. The spreads on bonds for other emerging markets also fluctuated in response to stresses and policies in external markets **(Chart 5.1.6)**. Some differences across emerging market economies are likely associated with country risk and growth prospects, as well as their policies for managing capital inflows and outflows.

5.1.2 Other Asset Markets

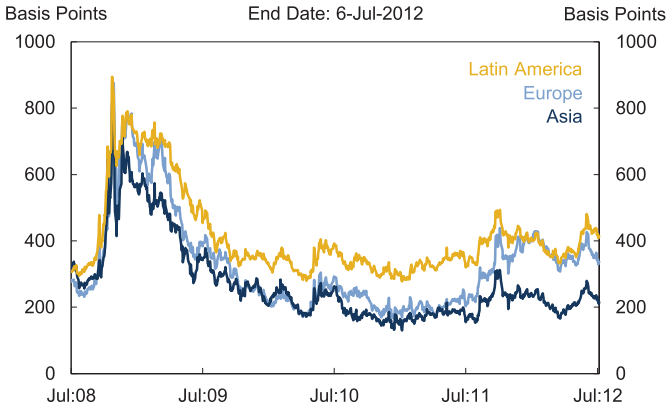
Asset markets outside of sovereign debt have also been heavily influenced by developments in the euro area and the growth outlook, with the notable exception of agricultural land and some commodities. Corporate debt spreads widened over the past 12 months, with spreads for financial firms increasing more than for nonfinancial firms. The dollar appreciated against the euro, reflecting continued concerns with euro area peripheral sovereign debt.

Chart 5.1.5 10-Year Sovereign Debt Yields



Source: Financial Times, Haver Analytics, U.S. Department of Treasury

Chart 5.1.6 Emerging Market Bond Spreads



Source: JP Morgan, Haver Analytics

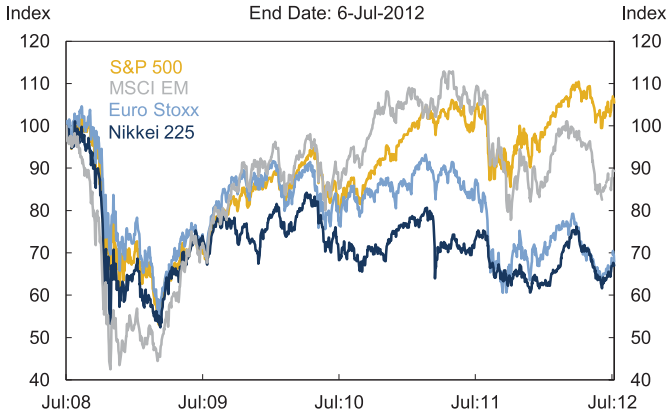
Note: JP Morgan EMBI+ Sovereign Spreads indices for each region.

Chart 5.1.7 Price Changes in Selected Equities Indices

	Change from 30-Jun-2011 to 6-Jul-2012	Change from Post-Crisis Low to 6-Jul-2012
Major Economies		
U.S. (S&P)	-3%	100%
Euro (Euro Stoxx)	-22%	24%
Japan (Nikkei)	-8%	28%
U.K. (FTSE)	-5%	61%
Selected Europe		
Germany (DAX)	-13%	75%
France (CAC)	-20%	26%
Italy (FTSEMIB)	-32%	9%
Spain (IBEX)	-35%	11%
Emerging Markets		
Brazil (Bovespa)	-12%	87%
Russia (RTS)	-29%	173%
India (Sensex)	-7%	115%
China (Shanghai SE)	-19%	30%

Source: Capital IQ

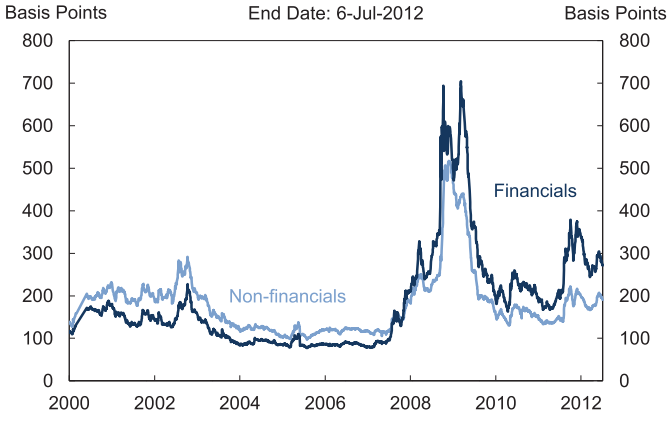
Chart 5.1.8 Global Equities



Source: Capital IQ

Note: 1-Jul-2008 = 100.

Chart 5.1.9 U.S. Corporate Bond Spreads—Investment Grade



Source: JP Morgan

Equities

U.S. equity markets outperformed other major equities markets from mid-year 2011 through early July 2012 after a period of considerable volatility **(Chart 5.1.7)**. Equity markets in advanced and emerging economies fell sharply in the third quarter of 2011 as numerous concerns—including the unfolding European crisis, the sustainability of U.S. fiscal policy, and a slowdown in global growth—weighed on sentiment **(Charts 5.1.8)**. By early October 2011, the S&P 500 was around 17 percent below its level at the end of June 2011. The Euro Stoxx index declined around 27 percent over the same period, reflecting outsized declines in peripheral equity markets. As concerns subsequently eased during the first quarter of 2012, buoyed in part by global central bank actions and ongoing signs of economic recovery in the United States, U.S. equity markets reported strong gains. However, much of these recent gains in the United States have reversed following weaker than expected data on the U.S. recovery, weak global economic data and renewed concerns about the European crisis. As of July 6, 2012, the S&P 500 was nearly 4 percent lower than at the end of the first quarter of 2012, and European stocks fell almost 10 percent over the same period.

Corporate Bonds

Corporate bond spreads to sovereign equivalents in the United States and Europe have generally widened since mid-2011, although this development has been less pronounced in the United States. A particular feature has been the large divergence between spreads on debt issued by financial firms versus nonfinancial firms, as investors focus on risks associated with the financial sector **(Chart 5.1.9)**. A similar pattern can be found in the relative increase in CDS spreads of financial firms over nonfinancial firms. Issuance of covered bonds has outpaced unsecured debt issuance in a number of European banking systems, reflecting increased concerns about the creditworthiness of these institutions. Overall, U.S. dollar corporate bond issuance has rebounded strongly in 2012, particularly among nonfinancial issuers.

Foreign Exchange

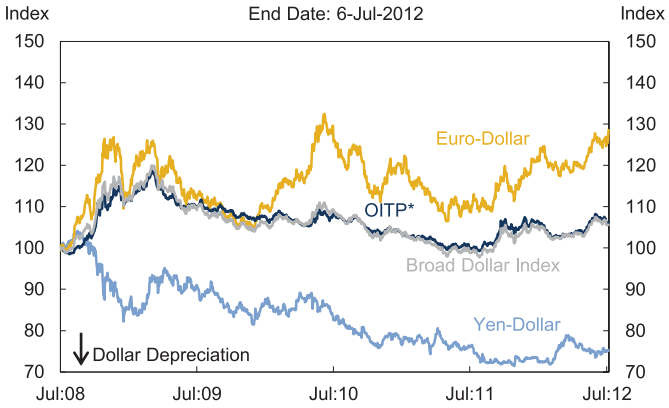
Over the past 12 months, foreign exchange markets were strongly influenced by euro area developments and monetary policy expectations. The euro broadly declined over the second half of 2011 and first half of 2012, with downside pressure against the major currencies particularly evident late in 2011 and 2012:Q2. In dollar-euro markets, bid-ask spreads widened slightly and options markets placed above average value on protection from further euro depreciation. Within Europe, the sharp depreciation against the safe haven of the Swiss franc prompted a strong market intervention by the Swiss National Bank in August and early September 2011, culminating with the establishment of a floor for the euro-franc exchange rate. Downside pressure on the euro against major currencies abated somewhat in early 2012, particularly against the yen. The Bank of Japan had intervened in foreign exchange markets in late October through early November 2011, selling yen and buying dollars, and also engaged in further monetary easing through the end of April 2012. The improvement in risk tone over that period was also associated with a partial rebound in many emerging market currencies, after they had depreciated sharply in the second half of 2011 as reflected in the other important trading partners (OITP) and broad dollar indices **(Chart 5.1.10)**. More recently many emerging market currencies fell against the dollar, prompting intervention by some of these countries to support their currencies.

Overall, between July 2011 and July 2012, the U.S. dollar appreciated by nearly 15 percent against the euro, was broadly unchanged against the yen, and appreciated against most emerging markets currencies. Options markets are again placing a relatively high value on protection against euro depreciation, as measured by the price differential between out-of-the-money puts and calls.

Commodities

Commodity prices have displayed elevated volatility for the past several years, driven by

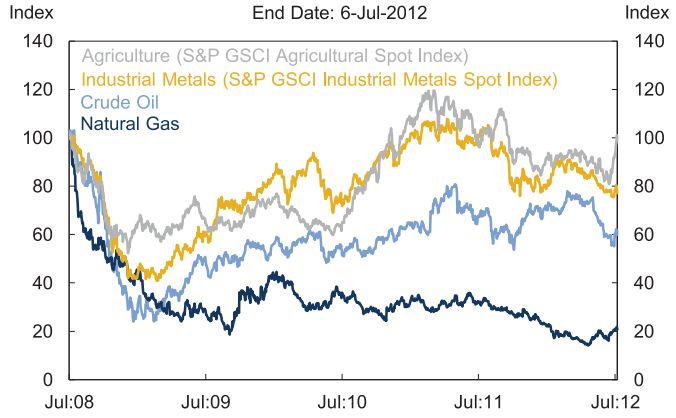
Chart 5.1.10 U.S. Dollar Exchange Rates



Source: Bloomberg, Federal Reserve

Note: 1-Jul-2008 = 100. *Other Important Trading Partners – a weighted average of the FX values of the dollar against a subset of currencies in the broad index that do not circulate widely outside the country of issue.

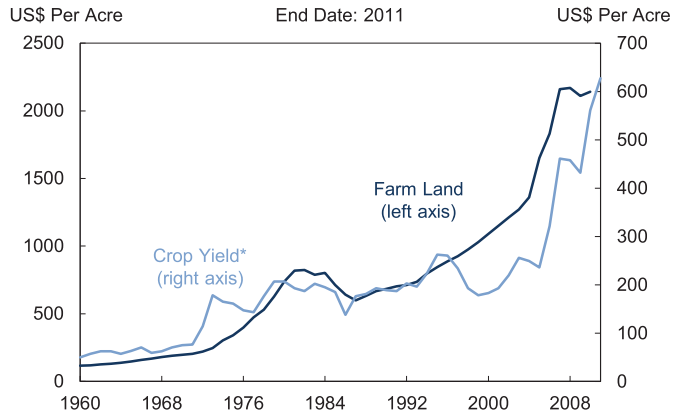
Chart 5.1.11 Commodities



Source: Bloomberg

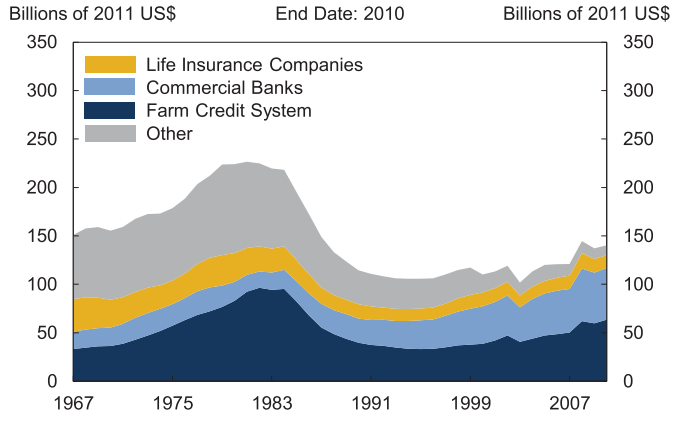
Note: 1-Jul-2008 = 100.

Chart 5.1.12 Farm Land Prices and Value of Crop Yield



Source: USDA, FSOC Calculations *Note: US$ value of crops grown per acre.

Chart 5.1.13 Agricultural Real Estate Debt Outstanding



Source: USDA, Haver Analytics

market-specific fundamental factors as well as broader global growth concerns and risk sentiment. Oil prices were near their three-year highs early in 2012, with continued geopolitical uncertainty in the Middle East raising concerns over global supply and limited spare capacity. More recently, however, prices moderated slightly. In the United States, nominal gasoline prices were also near historic highs early in 2012 but have likewise moderated. Natural gas prices almost halved over the past year on expectations of increased supply arising from hydraulic fracturing technology **(Chart 5.1.11)**, though prices increased again through July 6, albeit from quite a low base, as result of announced cutbacks in drilling and some signs of accelerated coal-to-gas switching activity. Industrial metal prices have also declined since June 2011, with the majority of the fall occurring in the third quarter of 2011, when global growth fears were most pronounced. This period was also associated with marked strength in gold prices. Commodity markets continued to function well with only limited impact from the bankruptcy of MF Global*, despite its role as a futures clearing merchant in these markets. **(See Box D: MF Global Bankruptcy.)**

Agricultural Land

Agricultural land values are estimated to have increased further through mid-2011, driven by increasing crop yields, rising commodity prices, favorable crop export conditions, and low interest rates **(Chart 5.1.12)**. Adjusting for commodity prices and improvements in crop yields, agricultural land values have retreated somewhat from the record highs reached in 2005 and 2006. Price-to-rent ratios for agricultural land are at multi-decade highs for a number of Corn Belt and Plains states but have moderated from peaks for the United States as a whole.

Currently, 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 to have

* Chairman Gensler did not participate in the preparation or review of the portions of this report specifically regarding MF Global.

been rising sharply. Adjusting for inflation, current agricultural real estate debt levels remain significantly below the levels of the late 1970s **(Chart 5.1.13)**. The Farm Credit System and community banks that specialize in agriculture lending have the bulk of exposures to agricultural land. Delinquency rates on real estate farm loans at commercial banks declined in recent quarters to about 3 percent at the end of 2011, slightly above the historical average of about 2.6 percent over the past 20 years.

5.1.3 Wholesale Funding Markets

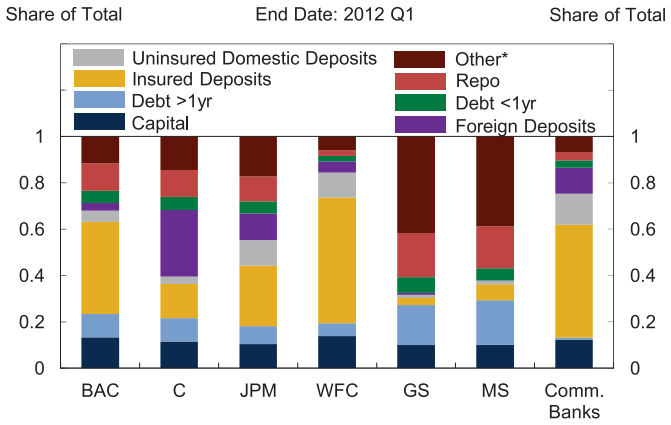
Use of short-term wholesale funding has dropped significantly, with declines in outstanding volumes of both repurchase agreements and corporate paper. This development is likely to enhance stability of funding sources for financial institutions, as these entities shift to more stable funding such as retail deposits. However, this shift is partially due to market reaction to uncertainty and flight to safety, and it could be retraced as these uncertainties abate.

Short-Term Wholesale Funding Markets Overview

Short-term wholesale funding markets, which include large time and checking deposits, repurchase agreements (repos), and commercial paper, provide financial intermediaries with funds that supplement retail deposits to support their activities **(Chart 5.1.14)**. Sources of lending in the wholesale short-term funding markets are largely wholesale cash pools, including cash on the balance sheets of nonfinancial companies, reinvestments of cash collateral from securities lending, cash held by long-term mutual funds, and money market funds. These sources of funds have grown markedly as a percentage of GDP over the past two decades, although this percentage has been declining through the first quarter of 2012 **(Chart 5.1.15)**. Nonfinancial corporate cash, in particular, has been growing at an accelerating rate, a pattern that continued through early 2012.

Measures of reliance on short-term wholesale funding of domestic banking firms continue to decline and remain well below their peaks in 2008 **(Chart 5.1.16)**. Slow growth in loans

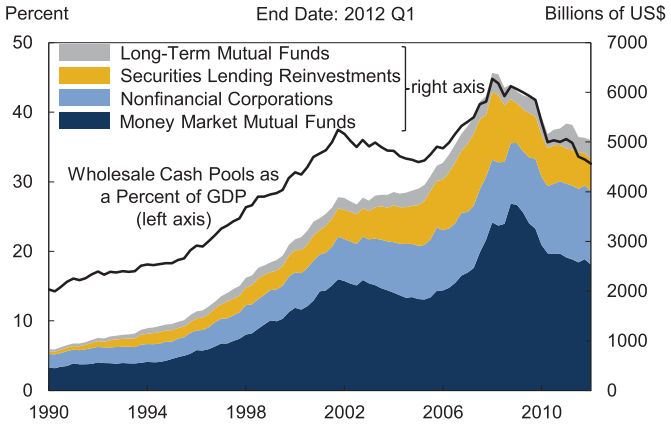
Chart 5.1.14 Large Bank Holding Company Liability Structure



Source: FDIC, FR Y-9C

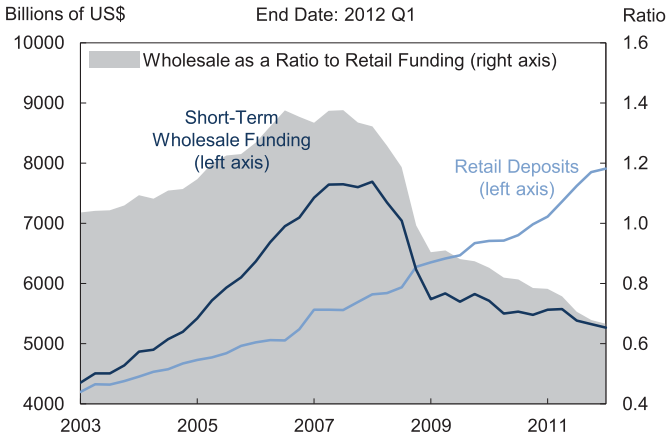
* Other = commercial paper, derivative payables, securities sold short and everything categorized as "Other" reported in FR Y-9C.

Chart 5.1.15 Wholesale Cash Investors



Source: Flow of Funds, Haver Analytics

Chart 5.1.16 Retail Deposits vs. Short-Term Wholesale Funding



Source: Flow of Funds, FDIC, Haver Analytics

relative to large deposit inflows, which have been bolstered by the FDIC's temporary unlimited insurance coverage for non-interest-bearing transaction deposits, also supported this decline.

Recent LIBOR Investigations

Recent investigations into possible manipulation of the London Interbank Offered Rate (LIBOR) underscore the importance of effective control processes to help ensure the integrity of funding markets. LIBOR rates serve as reference rates for most interest rate derivatives and variable rate loans. However, LIBOR rates are not transaction rates. Rather, the LIBOR rate for a given currency and tenor is calculated based on the rates submitted by a panel of member banks each morning to the British Bankers' Association (BBA). The accuracy of LIBOR as a measure of interest rates in the London interbank market depends crucially on the accuracy of banks' responses to the BBA survey.

While media reports of attempts to manipulate the rates have surfaced as far back as 2007, concerns with the integrity of the LIBOR process escalated in late June 2012. Specifically, on June 27, in an internationally coordinated enforcement effort, the CFTC, U. S. Department of Justice (DOJ) and the United Kingdom Financial Services Authority (FSA) each announced actions finding that Barclays had provided false information to the BBA surveys and attempted to manipulate LIBOR and another benchmark, the Euro Interbank Offered Rate (Euribor), on numerous occasions and sometimes on a daily basis over a four-year period, commencing as early as 2005. In addition, certain Barclays euro swaps traders, led at the time by a senior trader, coordinated with and aided and abetted traders at other banks in attempts to manipulate Euribor. Among other things, Barclays improperly made submissions both to benefit its derivatives trading positions and to protect against negative perceptions of the bank's health.

Barclays entered into settlement agreements with the CFTC, DOJ and FSA. The CFTC

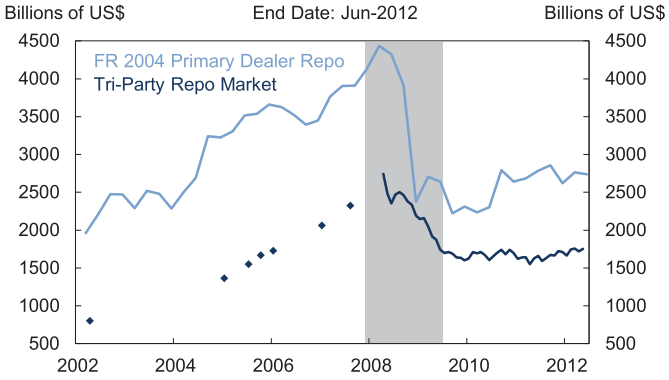
imposed a $200 million penalty and issued an Order requiring Barclays to implement measures to help ensure that its submissions are transaction focused, based upon a rigorous and honest assessment of information and not influenced by conflicts of interest. Among other undertakings in the CFTC Order, in making submissions, Barclays transactions will be given the greatest weight subject to certain specified adjustments and considerations. In addition, Barclays was ordered to implement firewalls to prevent improper communications and submissions. As part of a non-prosecution agreement, the DOJ ordered Barclays to pay a $160 million penalty. In its action, the FSA imposed a penalty of £59.5 million.

Repo Markets

The overall repo market is composed of both bilateral transactions negotiated between two market participants and tri-party repo transactions in which the exchange of cash and collateral is administered by a clearing bank. The size of the overall repo market is difficult to measure, due to issues related to netting and accounting conventions. Additionally, existing data do not provide adequate visibility into the composition of repo activity. **Chart 5.1.17** displays two measures of the size of the repo market: tri-party repos and primary dealer repos, which include both tri-party and bilateral repos. According to both measures, the overall volume of repo activity remains substantially below that seen in the run-up to the crisis. In particular, tri-party repo activity peaked in 2008 at $2.7 trillion and fell below $1.8 trillion in the years since the end of the recession, well below pre-crisis levels.

As the volume of tri-party activity has declined, so has the level of traditional and non-traditional collateral in tri-party since July 2008. Traditional collateral consists of Treasury securities, agency mortgage-backed securities (MBS), agency debentures, and agency collateralized mortgage obligations (CMOs). Non-traditional collateral includes corporate bonds, equities, private label CMOs, asset-backed securities (ABS), commercial paper

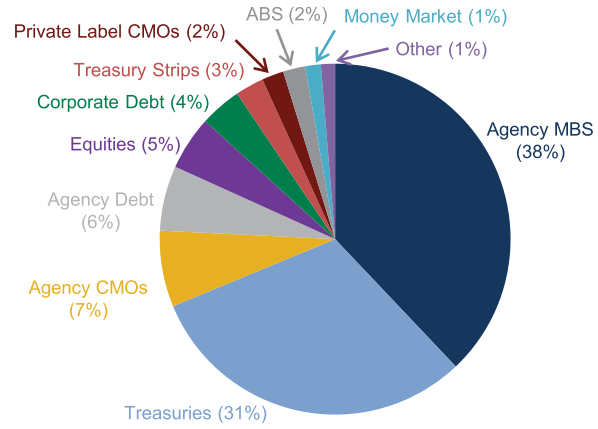
Chart 5.1.17 Estimated Value of the Repo Market



Source: FRBNY White Paper, Tri-Party Repo Infrastructure Reform Task Force, Flow of Funds, Haver Analytics

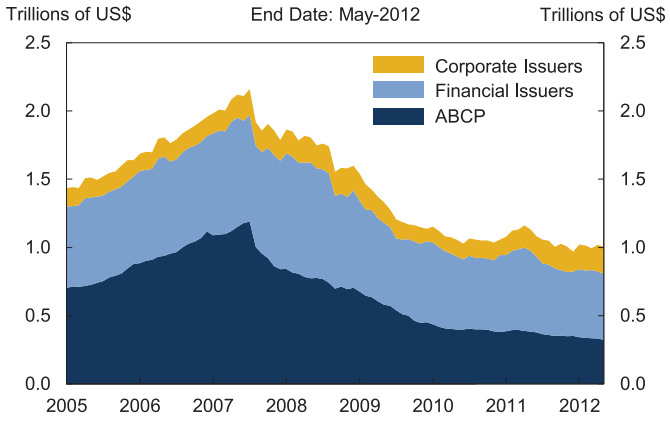
Note: Limited data were provided by clearing banks prior to April 2008. These figures are estimates based on the data provided. Gray bar signifies NBER recession.

Chart 5.1.18 Tri-Party Repo Collateral Distribution



Source: Tri-Party Repo Infrastructure Reform Task Force As Of: May-2012

Chart 5.1.19 Commercial Paper Outstanding



Source: Federal Reserve, Haver Analytics

(CP), other money market instruments, whole loans, and municipal bonds. Non-traditional collateral accounts for only 16 percent of tri-party collateral as of May 2012 **(Chart 5.1.18)**, down from 21 percent of the total in May 2011 and 25 percent in July 2008. Among traditional collateral in the tri-party repo market, the share of Treasury securities has increased at the expense of agency paper, consistent with relative shifts in supply and flight-to-quality in recent years. Most types of non-traditional collateral have fallen significantly, with private CMOs declining the most.

There are considerable concerns about structural weaknesses in the tri-party repo market. **(See Box G: Ongoing Vulnerabilities in the Tri-Party Repo Market.)**

Commercial Paper and Asset-Backed Commercial Paper

CP outstanding peaked at $2.2 trillion in July 2007 and stood at $1.0 trillion at May-end 2012 **(Chart 5.1.19)**. As of May 2012, asset-backed commercial paper (ABCP) accounts for 32 percent of the market, financial commercial paper accounts for 48 percent, and nonfinancial corporate commercial paper accounts for 20 percent. Financial CP and certificates of deposit (CD) outstanding are around 40 to 50 percent below their pre-crisis peaks and, in recent months, financial commercial paper outstanding has continued to decline, largely due to reduced demand from investors for foreign bank commercial paper.

ABCP was only about 6 percent of the total commercial paper market in 1990, but it accounted for about 60 percent of the total market in mid-2007, or approximately $1.2 trillion. The market has shrunk steadily and, as of the beginning of July 2012, it is currently at about $311 billion outstanding, with foreign bank sponsored conduits comprising the majority of the market. The Moody's downgrade of 15 large U.S. and European banks in June 2012, discussed in Section 5.2, also resulted in the downgrade of 18 ABCP conduits that rely on these banks for liquidity support. The

affected conduits have a combined value of almost $70 billion. These downgrades elicited a noticeable market response, with an increase in the cost of funding these conduits.

Securities Lending

Securities lending is a transaction involving the temporary transfer of a security by one party (the lender) to another (the borrower), in exchange for collateral in the form of either cash or non-cash instruments. Institutions may want to borrow securities to facilitate short selling, for derivative hedges, or to avoid failing on a delivery. The main lenders of securities are institutional investors, such as pension plans, investment funds, and insurance companies. The main borrowers are hedge funds, broker-dealers, asset managers, derivatives traders, and market makers. Most domestic securities lending is done against cash collateral. Typically, the lender of a security pays an interest rate to the borrower for the cash collateral. Lenders, in turn, seek to earn an additional return by investing this cash in a variety of instruments.

The global value of securities lending transactions remained fairly flat through June 2012 at an average value below $2 trillion **(Chart 5.1.20)**. The total market value of securities on loan in the United States was about $820 billion at the end of the second quarter of 2012. About 50 percent of the total U.S. market is represented by U.S. government securities, about 40 percent by equities, and the rest by fixed income securities. Reinvestment of cash collateral from securities lending declined in volume over the past year from $775 billion in 2011:Q1 to $670 billion in 2012:Q1. In addition, the weighted average maturity of such cash reinvestment declined markedly in late 2011, likely in response to concerns associated with the euro area debt situation **(Chart 5.1.21)**.

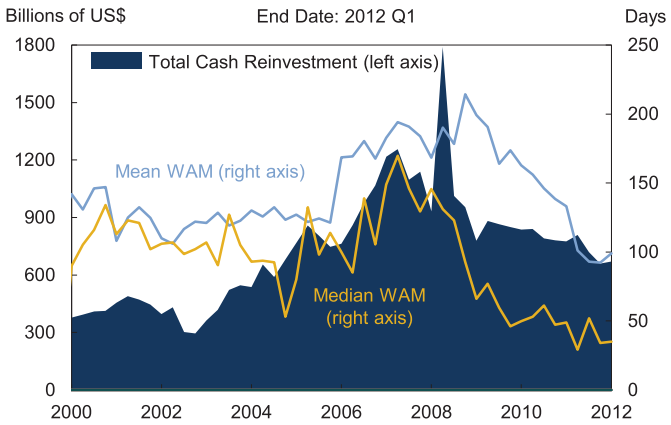
5.1.4 Housing Markets

The housing market remains stressed. However, national home prices show signs of stabilizing after a long-term decline, and some measures of house prices have shown upticks recently. Housing markets

Chart 5.1.20 Value of Securities on Loan

Source: Markit

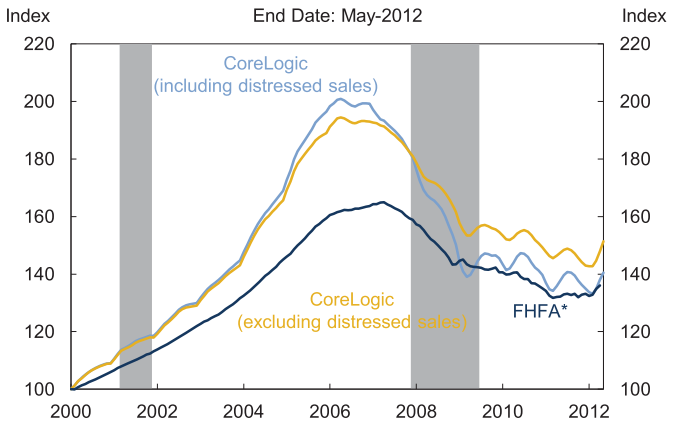
Chart 5.1.21 Securities Lending Cash Reinvestment



Source: The Risk Management Association

Note: WAM = weighted average maturity.

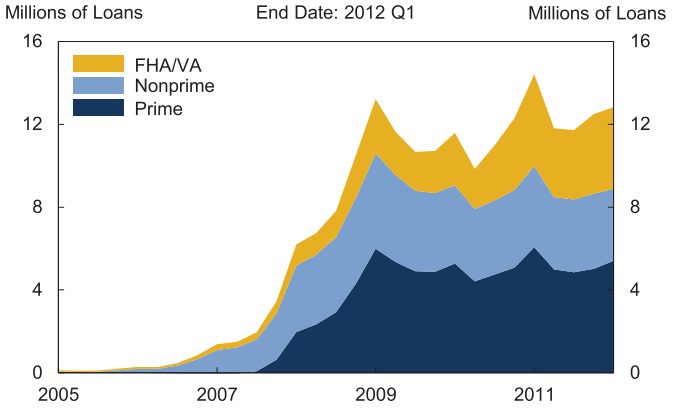
Chart 5.1.22 National Repeat Sales Home Price Indices



Source: FHFA, CoreLogic, FSOC Calculations

Note: Jan-2000 = 100. *Seasonally Adjusted. Gray bars signify NBER recessions.

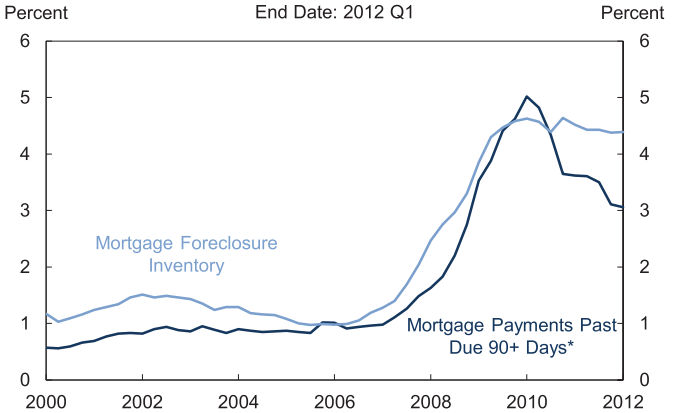
Chart 5.1.23 Mortgages with Negative Equity



Source: LPS Applied Analytics, CoreLogic

Note: Likely understated because of incomplete data on junior liens.

Chart 5.1.24 Mortgage Delinquency and Foreclosure



Source: Mortgage Bankers Association, Haver Analytics

Note: Percent of all mortgages. *Seasonally Adjusted.

continue to be weighed down by elevated inventories of foreclosed homes, homes in the foreclosure process, and homes in danger of foreclosure, although the latter has been decreasing over the past year. In addition, the inventory of existing homes for sale has continued to decline and now stands at levels comparable to 2004. Despite the overall improvement in economic and financial market conditions and historically low interest rates, access to residential mortgages remains constrained. The public sector continues to offer solutions aimed at stabilizing the housing markets by providing refinancing and modification options to prevent additional foreclosures.

Housing Market Overview

Housing activity remains at a historically low level. Home prices continued to decline through late 2011, though early 2012 showed signs of stabilization, including a rise in some housing price indices **(Chart 5.1.22)**. National house prices are still as much as 30 percent below their peak in 2006. Going into the second quarter of 2012, nearly 13 million homeowners had mortgage balances exceeding the values of their homes, a condition known as "negative equity" **(Chart 5.1.23)**. Although housing starts and existing home sales remain significantly below pre-crisis highs, they have risen by more than 30 percent from their respective 2009 and 2010 lows through April 2012. The inventory of existing homes for sale has declined significantly over the last two years and is currently comparable to levels last seen in 2004.

Indicators of credit quality in the residential mortgage sector continue to reflect the challenges confronting homeowners and lenders. The fraction of mortgages that are delinquent more than 90 days but not yet in foreclosure is sometimes referred to as the "shadow inventory" of homes in danger of foreclosure. This measure has declined from a high of 5 percent to around 3 percent; however, it remains at elevated levels. Moreover, there has been little change in the fraction of mortgages that are in foreclosure, which remains around 4.4 percent **(Chart 5.1.24)**. The inventory of mortgages

that are in some stage of the foreclosure process remains high **(Chart 5.1.25)**.

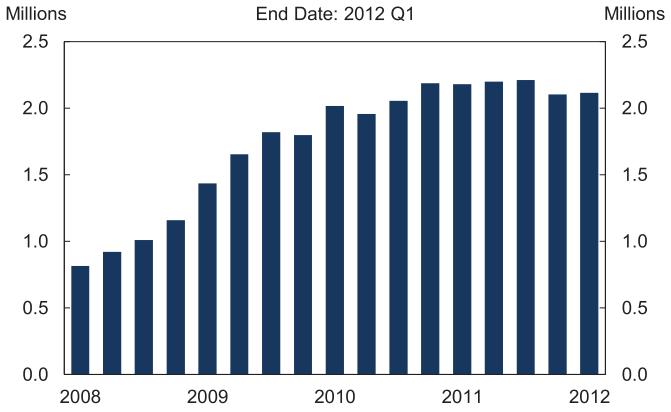
Mortgage Credit Flows

Mortgage credit flows remain quite constrained. High unemployment and heightened uncertainty contributed to weak provision of housing credit, but tighter credit standards have also been a major factor. In particular, the credit quality of new originations—both purchases and refinances—is far higher than prior to the crisis **(Chart 5.1.26)**. According to the Senior Loan Officer Opinion Survey (SLOOS) data, the persistent net tightening in mortgage credit standards from 2007 through 2009 has only recently begun to ease, and only for prime residential loans. When asked to indicate their willingness to originate government-sponsored enterprise (GSE) eligible mortgages relative to 2006 for borrowers across a range of creditworthiness, banks were less likely to lend to all credit categories except those with pristine credit. While higher credit scores and larger down payments tended to increase banks' willingness to lend, many banks were unwilling to provide mortgage credit even when the loans were within GSE requirements. Higher "put-back risk" (the risk that the mortgage originator may have to repurchase the loan if it violates the GSE's requirements) and borrower costs, along with difficulty in obtaining mortgage insurance, were cited as important factors contributing to banks' reluctance to originate such loans. The events of the last several years also exposed severe deficiencies in the nation's housing finance infrastructure. In areas ranging from the securitization process to servicing of delinquent mortgages to the foreclosure process, a system that was designed for a rising market was shown to function poorly in a declining price environment. This increased the level of uncertainty among market participants, contributing to constrained credit availability.

Measures to Strengthen the Housing Market

To strengthen the housing market, the government developed a number of programs

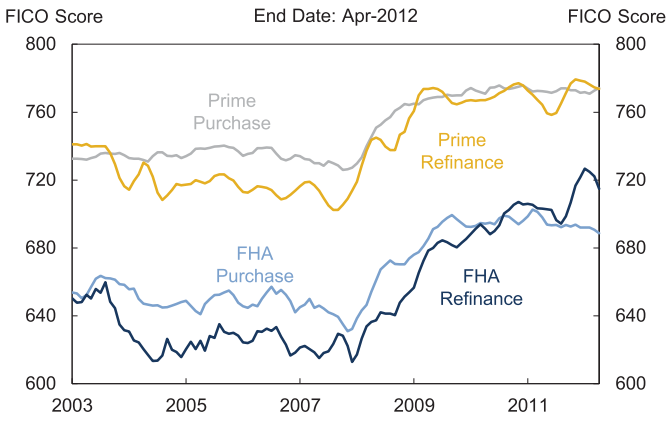
Chart 5.1.25 Foreclosure Pipeline



Source: OCC and OTS Mortgage Metrics Reports

Note: Numbers scaled by estimated coverage rate.

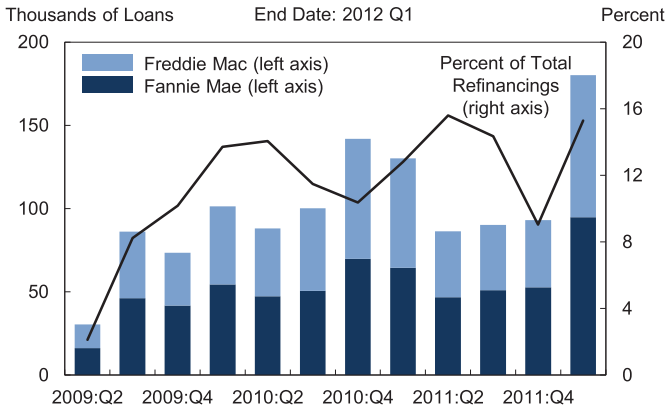
Chart 5.1.26 Median Credit Score at Mortgage Origination



Source: LPS Applied Analytics

Note: Three month moving average.

Chart 5.1.27 HARP Refinancings



Source: FHFA

aimed at providing relief to struggling homeowners, including Making Home Affordable (MHA), the Home Affordable Refinance Program (HARP) and the Hardest Hit Fund. MHA, which was announced in 2009, was enhanced in January 2012, with expanded eligibility to reach a broader pool of distressed borrowers. As of April 2012, MHA has granted over 1.1 million homeowner assistance actions, mostly through the Home Affordable Modification Program (HAMP), which provides first lien permanent modifications. Additional MHA programs include a second-lien modification program, an unemployment forbearance program, and a short-sale or deed-in-lieu-of-foreclosure program. The end-date of MHA, based on the January 2012 enhancements, is December 31, 2013.

In April of 2009, the Home Affordable Refinance Program (HARP) was established to help homeowners refinance their GSE-guaranteed mortgages if they had a loan-to-value ratio (LTV) higher than 80 percent. As of March 2012, 1.2 million loans had been refinanced out of an estimated 3 to 4 million HARP-eligible homeowners. In October of 2011, the FHFA announced modifications to HARP in an effort to increase efficiency and expand the eligible universe of borrowers who can benefit from refinancing. The revisions extended the expiration until December 2013, removed the 125 percent LTV cap in order to accommodate more borrowers with negative equity, and provided additional representation and warranty relief for same-servicer refinances. These changes seem to have led to increased HARP refinancing in early 2012 **(Chart 5.1.27)**.

In 2010, the Hardest Hit Fund was announced, which provides $7.6 billion to Housing Finance Authorities in the 18 states most affected by price declines and unemployment as well as in the District of Columbia. These funds have been used to develop a range of programs tailored to their local housing markets, including mortgage payment assistance for unemployed borrowers, reinstatement

programs, principal reduction, and transition assistance for borrowers.

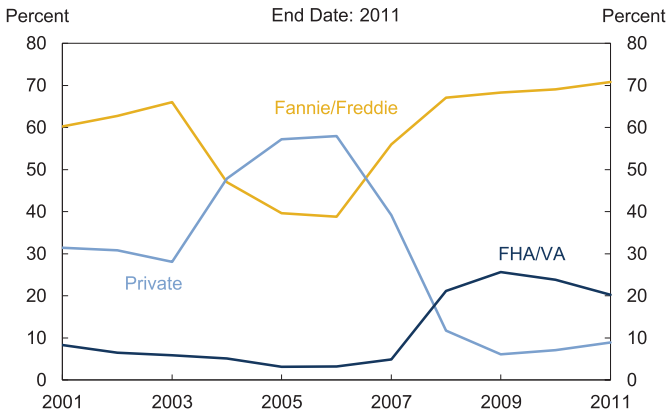
In addition to these programs, the government agencies have made substantial efforts to address loan servicing and foreclosure abuses. In early 2012, 49 states and the federal government announced a $25 billion settlement with the five largest loan servicers. Under the terms of the settlement agreement, servicers are required to pay $5 billion to be allocated to states, borrowers, and the FHFA. In addition, servicers are also required to dedicate $20 billion toward various forms of financial relief to borrowers, including reduction of principal balances on loans with negative equity and assistance in refinancing. These actions complement consent orders and other actions already being taken by the OCC, the FDIC, the Federal Reserve, and the FHFA to address and correct deficiencies in mortgage foreclosure processing.

Government-Sponsored Housing Enterprises

Government support to Fannie Mae and Freddie Mac has helped keep mortgage credit markets functioning, as private securitization largely remains absent. At the end of 2011, GSE mortgage credit flow accounted for 71 percent of total mortgage origination **(Chart 5.1.28)**, considerably higher than pre-crisis levels, with most of the remaining originations coming from the Federal Housing Administration (FHA) and Department of Veterans Affairs (VA). Residential mortgage-backed securities (RMBSs) continue to be issued solely by housing-related GSEs and Ginnie Mae (GNMA), with negligible issuance of securities by non-agency entities **(Chart 5.1.29)**.

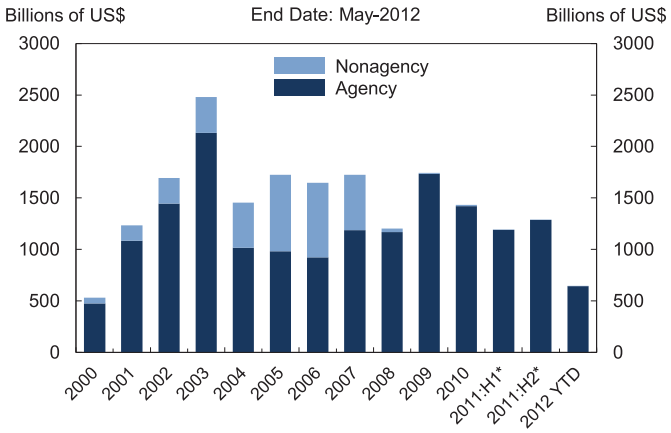
The financial position of the GSEs has improved recently. In 2012:Q1, Fannie Mae earned $2.7 billion income, and it did not request additional capital support from the government. In contrast, Freddie Mac reported a net income gain of $577 million for the same quarter and is seeking an additional $19 million in capital from the Treasury **(Chart 5.1.30)**. Although the loss rate from single-family

Chart 5.1.28 Mortgage Originations



Source: Inside Mortgage Finance

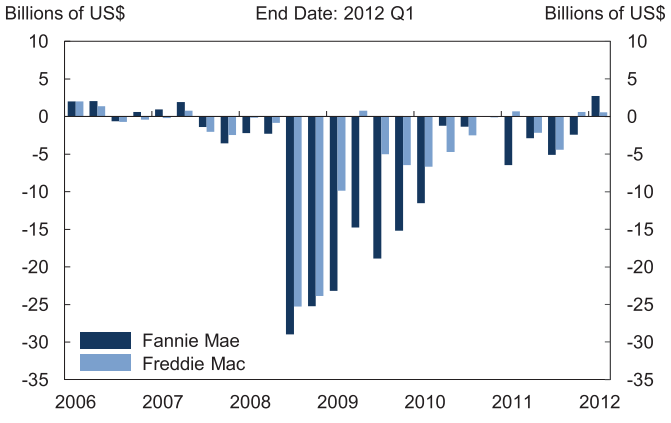
Chart 5.1.29 Issuance of RMBS



Source: Thomson Reuters, Dealogic

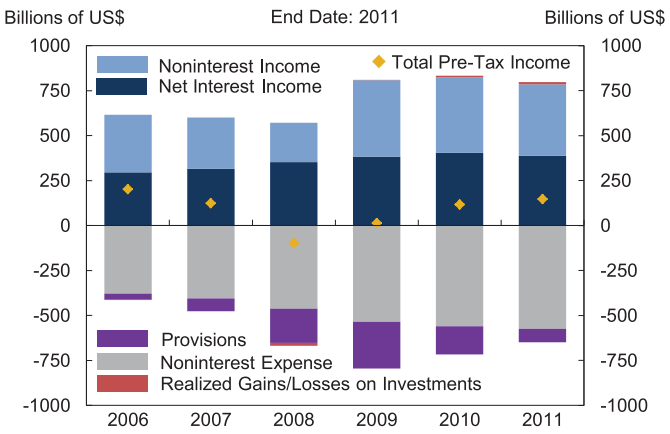
*Note: Annual rate.

Chart 5.1.30 GSE Net Income and Losses



Source: SEC, SNL Financial

Chart 5.2.1 Aggregate BHC Pre-Tax Income



Source: FR Y-9C

Note: Includes all BHCs filing Y-9C.

loans has been declining, this activity is still the main driver of losses at the GSEs. As of March 31, 2012, Fannie Mae and Freddie Mac reported single-family mortgage delinquency rates of 3.7 percent and 3.5 percent respectively, representing the lowest delinquency rates since 2009.

5.2 Bank Holding Companies and Depository Institutions

5.2.1 Bank Holding Companies

Bank holding companies (BHCs) continue to enhance their overall strength with improved capital and liquidity positions. Both the quality and amount of capital at BHCs continue to improve due to positive operating results, capital raising, and regulatory changes. Most of the largest BHCs have resumed capital distributions after undergoing stress testing and capital planning under the enhanced supervision of the Federal Reserve. However, revenues at the largest BHCs remain challenged by general market uncertainty, slowing global growth, and the low interest rate environment; credit default swap (CDS) spreads remain elevated, and increases in pretax income continue to be driven largely by non-recurring items.

A majority of commercial banks are owned by BHCs, which include the bank and any nonbank subsidiaries such as broker-dealers, investment companies, or insurance companies. As of year-end 2011, there were 4,743 top tier BHCs in the United States (excluding Puerto Rico), with aggregate assets of about $17.4 trillion. Aggregate pretax income in 2011 totaled $148 billion, an increase of 26 percent from 2010 **(Chart 5.2.1)**.

Capital and Liquidity

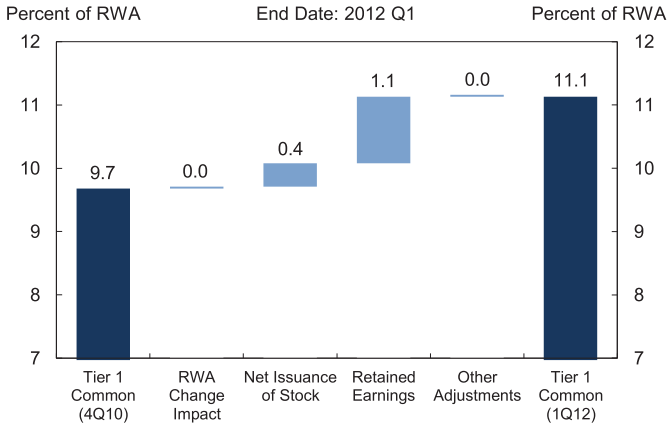
In aggregate, capital ratios for BHCs improved from 2010:Q4 to 2012:Q1, with the tier one common capital ratio under current risk-based capital rules ("Basel I") increasing 1.4 percentage points to 11.1 percent as of 2012:Q1. Increases in retained earnings, primarily from positive operating results, contributed 1.1 percentage points to this increase, while

additional capital raising contributed 0.4 percentage points **(Chart 5.2.2)**.

For the 19 largest U.S. BHCs, capital ratios continue to improve from post-crisis levels, with the aggregate tier one common capital ratio under Basel I improving 1.5 percentage points from 2010:Q4 to 2012:Q1 to 10.9 percent **(Chart 5.2.3)**. These 19 BHCs also underwent additional stress testing as part of the Comprehensive Capital Analysis and Review 2012 (CCAR 2012). Similar to the 2011 exercise, CCAR 2012 was a forward-looking cross-sectional analysis designed to examine the capital planning processes at these firms. A key part of the Federal Reserve's examination was a supervisory assessment of capital adequacy under a hypothetical stress scenario. This stress scenario was intended to help ensure a rigorous assessment of the BHCs' capital plans and was significantly more severe than prior stress tests. For example, one of the macroeconomic factors used in the stress scenario is the unemployment rate, which peaks at just over 13 percent for CCAR 2012—considerably higher than the comparable stress scenarios in both the 2009 Supervisory Capital Assessment Program (SCAP) and the prior year's CCAR exercise **(Chart 5.2.4)**.

In the hypothetical stress scenario, the Federal Reserve projected that the 19 BHCs would have a total of $438 billion in tier one common capital, implying an aggregate tier one common ratio under Basel I of 6.3 percent at the end of the nine-quarter projection period—well above the 5 percent target established in the Capital Plans Rule issued by the Federal Reserve in November 2011. The pro forma capital level under the stress scenario actually exceeded the BHCs' aggregate tier one common ratio at the start of the 2009 SCAP, reflecting the more than $300 billion increase in tier one common equity at these BHCs since early 2009 **(Chart 5.2.5)**. However, 4 of the 19 BHCs had one or more projected regulatory capital ratios fall below regulatory minimum levels at some point over the stress scenario horizon.

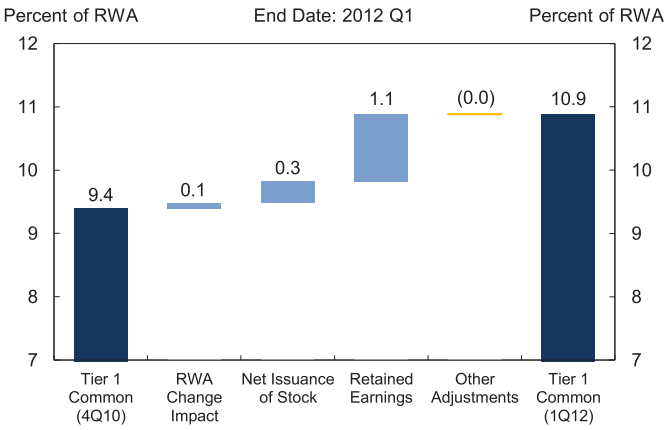
Chart 5.2.2 Change in Tier 1 Common Ratios for Aggregate U.S. BHCs



Source: FR Y-9C

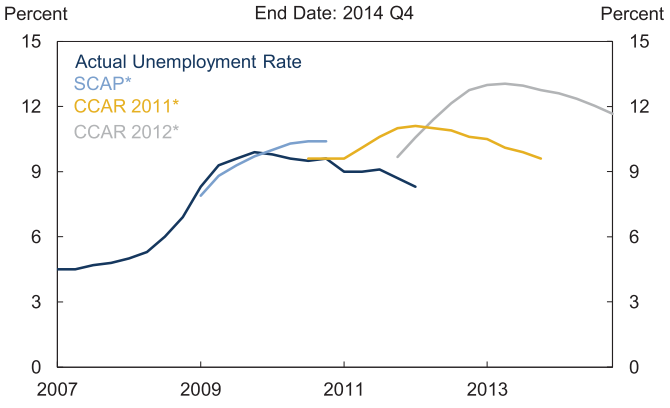
Note: Domestically owned BHCs.

Chart 5.2.3 Change in Tier 1 Common Ratios for 19 Largest BHCs



Source: FR Y-9C

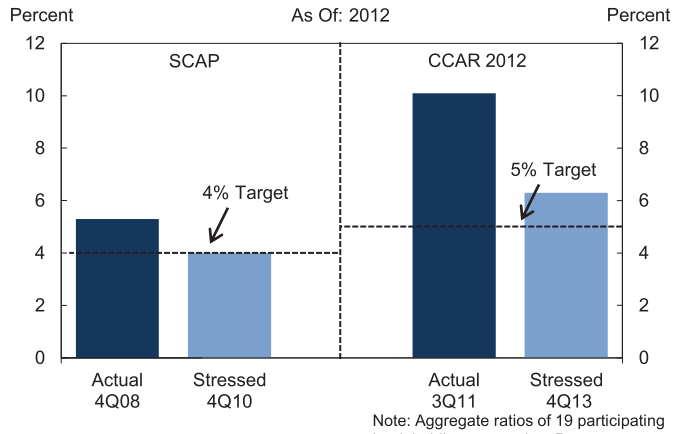
Chart 5.2.4 U.S. Unemployment Rate: Actual vs. Stress Scenarios



Source: Federal Reserve

*Note: Unemployment rate trajectory in respective stress scenarios.

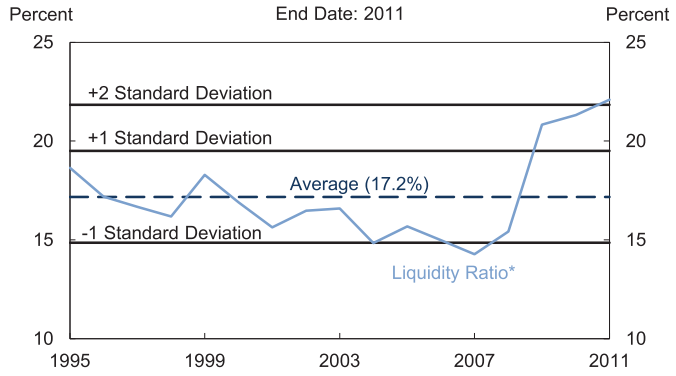
Chart 5.2.5 Initial and Stressed Tier 1 Common Capital Ratios



Note: Aggregate ratios of 19 participating bank holding companies. Post-stress estimates are supervisory estimates.

Source: Federal Reserve

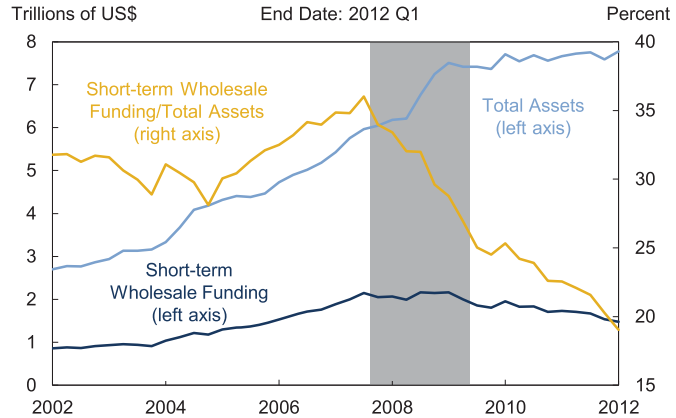
Chart 5.2.6 Consolidated Liquidity Ratio* for Top 50 BHCs



*Liquidity Ratio = sum of Cash & Due From, FFS, Repos, U.S. Treasuries, U.S. Gov. Agencies and U.S. Gov. Sponsored Agencies divided by Total Assets.

Source: FR Y-9C, BHCPR, OCC Calculations Note: Top 50 BHCs by asset size.

Chart 5.2.7 Short-Term Wholesale Funding at Largest BHCs



Note: Aggregation of BAC, C, JPM, and WFC. Gray bar signifies NBER recession.

Source: FR Y-9C

Along with higher capital levels, balance sheets at the largest BHCs continue to be more robust, as assets became more liquid and liabilities more stable following the financial crisis. In particular, the fraction of assets on BHC balance sheets consisting of highly liquid assets is more than two standard deviations above its average from 1995 to the end of 2011 **(Chart 5.2.6)**. Less reliance on short-term wholesale funding **(Chart 5.2.7)**, combined with an increase in core deposits, offers a more stable and resilient funding base.

Since some of this rebalancing away from short-term funding across all banks is a result of flight to quality by wholesale funding suppliers and since some of the increase in core deposits may be associated with the expanded FDIC guarantee that is scheduled to expire at the end of 2012, the longer-run persistence of these balance sheet improvements is unresolved. Moreover, some banks have large amounts of wholesale funding that are not necessarily fully covered by liquidity buffers.

For U.S. BHCs with assets less than $50 billion, the tier one common ratio under Basel I improved by approximately 1.6 percentage points to 12.6 percent over the 2010:Q4 to 2012:Q1 period, primarily due to capital raising (1.4 percentage points) and positive operating results contributing to retained earnings (1 percentage point) **(Chart 5.2.8)**. These increases were somewhat mitigated by the increase in risk-weighted assets that reduced the tier one common capital ratio under Basel I by 0.7 percentage point.

Many BHCs continue to engage in moderate share repurchases and dividend payouts in spite of continued economic uncertainty, forthcoming higher regulatory capital requirements, and enhanced regulatory scrutiny. Although many of the 19 largest BHCs that participated in the CCAR resumed distributions of capital in the form of dividends and share repurchases in 2011, U.S. BHCs saw only a slight increase in dividends and a net issuance of common equity in aggregate **(Chart 5.2.9)**.

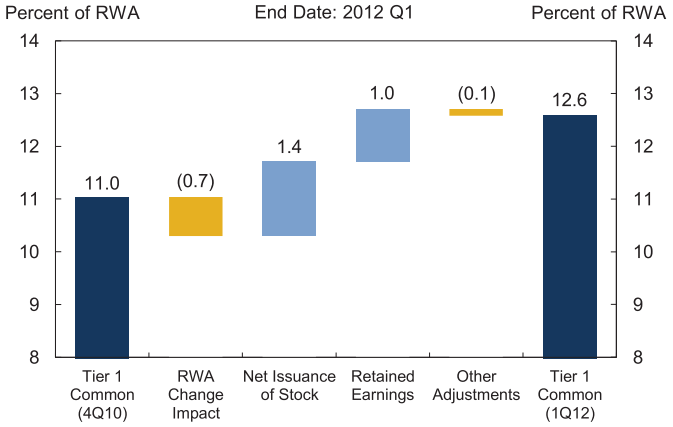
As noted in the Council's 2011 Annual Report, the Basel Committee on Banking Supervision (BCBS) agreed in December 2010 to a further revised set of capital and liquidity standards collectively referred to as Basel III. In June 2012, the Federal Reserve, FDIC, and OCC invited public comment on three proposed rules that would revise and replace the agencies' current capital rules. These proposals would implement, in the United States, the Basel III regulatory capital reforms from the BCBS and the changes required by the Dodd-Frank Act. Among other minimum standards, the proposals would establish a tier one common equity requirement equal to 4.5 percent of risk-weighted assets. It would also establish a capital conservation buffer above the minimum risk-based capital requirements, which must be maintained to avoid restrictions on capital distributions and certain discretionary bonus payments. As proposed, and consistent with Basel III, banking organizations generally would begin implementing the proposed capital reforms on January 1, 2013, and would be fully subject to the new standards by January 1, 2019. Concurrently, the agencies also approved a final rule to implement changes to the market risk capital rule, including those made by the BCBS in 2005 and 2010, to better capture positions for which the market risk capital rule is appropriate. The final rule will be effective on January 1, 2013.

In November 2011, the BCBS released its framework and assessment methodology to identify globally systemically important banks (G-SIB) that are subject to an additional common equity tier one capital buffer ranging from 1.0 to 3.5 percent of risk-weighted assets. Eight U.S. BHCs were designated as G-SIB and would be subject to the higher capital standards beginning in 2016, with full implementation by 2019. As with Basel III standards, the G-SIB framework would be incorporated by member jurisdictions into their local capital rules.

Performance

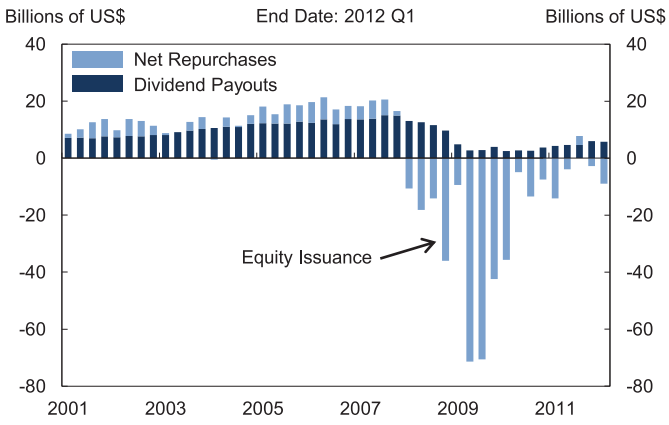
Despite strengthened balance sheets and liquidity, BHC market indicators have been

Chart 5.2.8 Change in Tier 1 Common Ratios for BHCs < $50B



Source: FR Y-9C

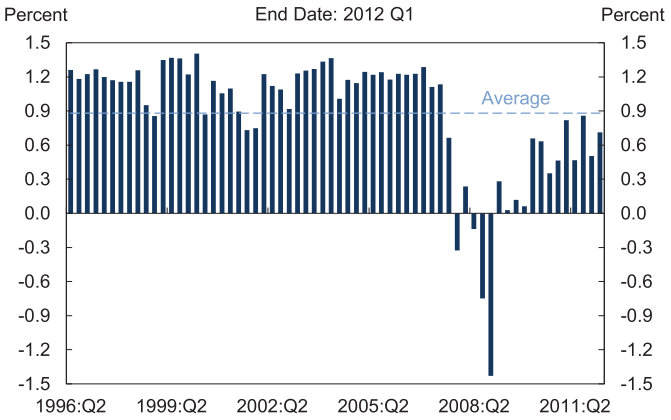
Chart 5.2.9 BHC Dividends and Repurchases



Source: FR Y-9C

Note: Domestically owned BHCs.

Chart 5.2.10 Return on Average Assets



Source: FR Y-9C Note: Includes only BHCs with total assets over $10 billion.

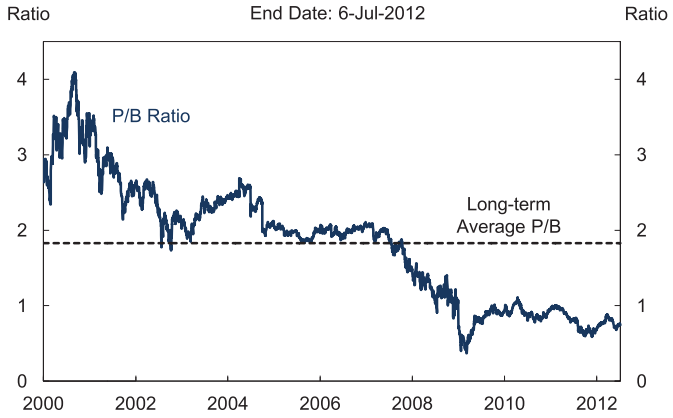
weighed down by concerns around potential contagion from Europe, among other vulnerabilities, discussed further in Section 7. Within the subset of 69 BHCs with assets greater than $10 billion, aggregate pretax income increased by 20 percent in 2011 to $138 billion, but return on assets still remains lower than the levels that prevailed in the 10 years before the crisis **(Chart 5.2.10)**. Trading revenue in 2011 was negatively affected by sharply lower client activity and volumes amid fears of European contagion and concerns of slowing global economic growth. Earnings were also adversely affected by the interest rate environment characterized by both low short-term rates and low term premiums. Furthermore, approximately 40 percent of this pretax income for 2011 was due to two non-recurring accounting items: (1) increased releases of reserves against losses on loans and leases due to improved credit quality; and (2) so-called "debt valuation adjustments" (DVA), whereby decreases in the mark-to-market value of a BHC's liabilities is booked as a profit. It is unclear to what degree these non-recurring items will contribute to the profitability of U.S. BHCs going forward, as the pace of reserve releases continues to decline, and potentially tightening credit spreads would result in reversals of these mark-to-market DVA gains.

On June 21, 2012, Moody's announced the results of its review of the credit ratings of large international banks with global capital markets operations. Fifteen global banks were downgraded, with 10 of these banks incurring a two-notch downgrade to their long-term ratings; Credit Suisse was downgraded three notches. (In addition, two dealer banks, Nomura and Macquarie, had been downgraded in March.) These downgrades reflected a re-assessment by Moody's of heightened uncertainties associated with capital market operations. However, Moody's continues to rate more highly those banks seen to have superior risk-management capabilities, more conservative funding profiles, and/or lower reliance on capital markets activities. These ratings actions were generally in line with market expectations and with prior guidance provided by Moody's in February.

Market Indicators

Following the heightened level of duress in capital markets during the second half of 2011, market indicators for BHCs reflected an improved investor sentiment and greater risk appetite in early 2012. These improvements later receded during the second quarter of 2012. The market capitalization weighted price-to-book ratio of the six largest BHCs improved in 2012, but market valuations remained at a more than 25 percent discount to book value in July 2012, which is below both the pre-crisis level and the average level over the past 12 years **(Chart 5.2.11)**. In late 2011, an equally weighted average of CDS spreads for the six largest BHCs reached levels last seen during the crisis. Spreads remain elevated relative to early 2011 levels **(Chart 5.2.12)**.

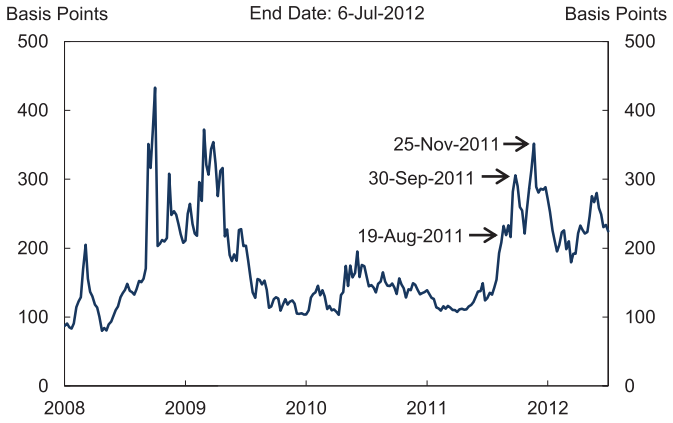
Chart 5.2.11 Price-to-Book Ratio of 6 Large Complex BHCs



Source: Bloomberg

Note: Market-cap weighted average.

Chart 5.2.12 CDS Spreads of 6 Large Complex BHCs



Source: Bloomberg

Note: Equal-weighted average of BAC, C, JPM, WFC, GS, MS.

5.2.2 Insured Depository Institutions

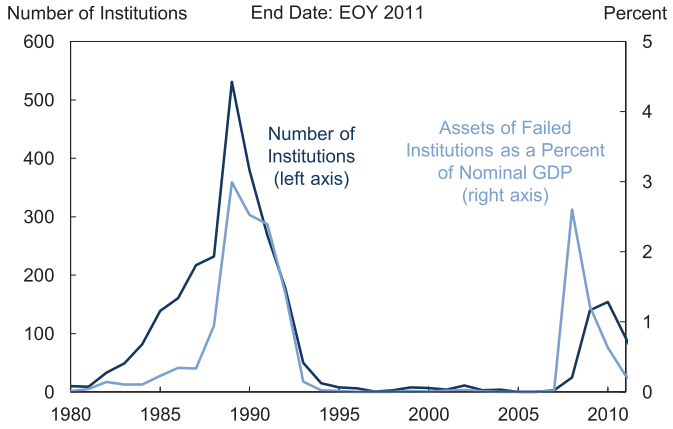
Performance within the commercial banking industry continues to rebound, coinciding with the general improvement in credit quality within the economy. Despite the rate of bank failures declining, the commercial banking sector has become more concentrated, as larger banks have seen higher levels of profitability and rebounded faster post-crisis.

Insured Commercial Banks and Savings Institutions

The banking industry is composed of more than 7,300 commercial banks and savings institutions. Of these, approximately 6,600 institutions have assets under $1 billion, 88 institutions have assets between $10 billion and $100 billion, and 19 institutions have assets over $100 billion. Failures, mergers, and a decline in chartering activity have contributed to further consolidation over the past several years.

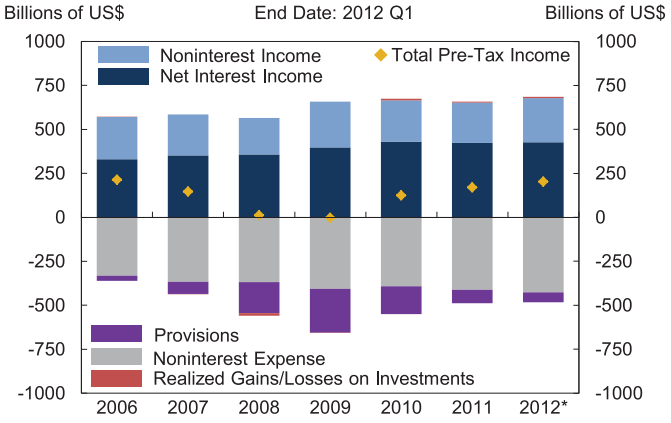
Failures of insured depository institutions continue to decline from crisis levels, as 92 institutions representing $35 billion in assets failed in 2011 **(Chart 5.2.13)**. An additional 31 insured institutions have failed thus far in 2012 (through July 6) representing $7.6 billion in assets. As of March 31, 2012, some 772 institutions, accounting for 10.6 percent of all institutions, were on the FDIC's problem bank

Chart 5.2.13 FDIC-Insured Failed Institutions



Source: FDIC

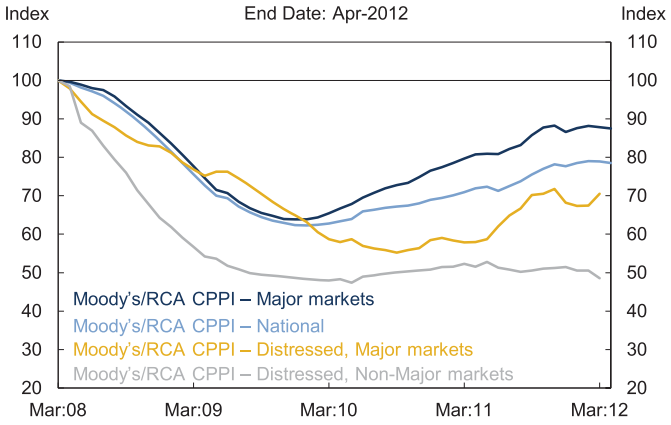
Chart 5.2.14 Commercial Bank and Thrift Pre-Tax Income



Source: FDIC

Note: *Annualized. Includes all FDIC-insured commercial banks and thrifts.

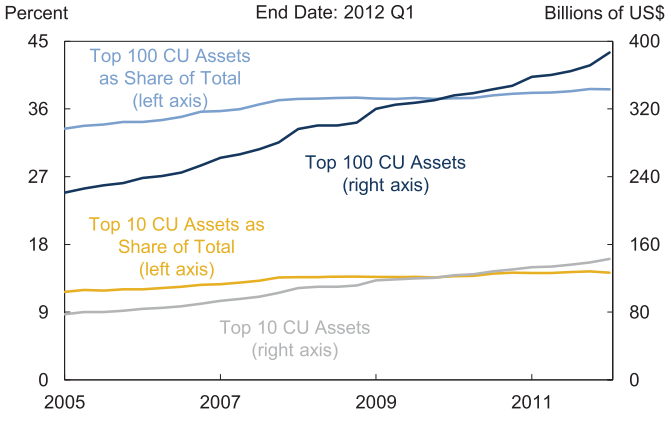
Chart 5.2.15 Commercial Property Price Indices



Source: Moody's Investors Service

Note: Mar 2008 = 100.

Chart 5.2.16 Concentration of Credit Union Assets



Source: NCUA

list, with financial, operational, or managerial weaknesses that threatened their continued financial viability.

Pretax net income for U.S. commercial banks and savings institutions totaled $169.3 billion in 2011, representing a significant increase over 2010 and a continuation of the rebound following the crisis. A rebound in credit quality with the associated reduction of loan loss provisions and other expenses continues to drive the improvements in pretax net income since 2009 **(Chart 5.2.14)**. Although the largest institutions and community banks 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 relatively outsized concentrations in the commercial real estate sector, which remains depressed **(Chart 5.2.15)**.

Credit Unions

The number of credit unions declined to 7,094 institutions by year-end 2011, down from 7,339 at year-end 2010. This 3 percent decline in the number of credit unions is in line with recent trends. As in other parts of the banking system, assets in the credit union system have become more concentrated, with the top 100 credit unions increasing their share of total credit union assets to 39 percent **(Chart 5.2.16)**. Corporate credit unions—which provide critical services to the broader credit union system—are consolidating and deleveraging as they refocus their business models on providing operational support to consumer credit unions, raising capital, and adjusting to the new regulatory environment. As of year-end 2011, there are 24 corporate credit unions with $34 billion in assets—a decline from 27 corporate credit unions with $96 billion in assets in 2007.

The credit union system experienced an improved return on assets (ROA) in 2011 of 67 basis points, an increase from 50 basis points in 2010. Improved credit conditions were the

primary driver behind the provision for loan losses declining from 0.8 percent of assets in 2010 to 0.5 percent of assets in 2011 **(Chart 5.2.17)**. Aggregate net income increased to $6.3 billion, a 39 percent improvement from 2010. Overall loan levels within the credit union system rebounded by 1.2 percent to $571 billion after experiencing a decline of 1.4 percent in 2010. In 2011 loan growth was driven by increases in real estate, credit cards, and auto loans.

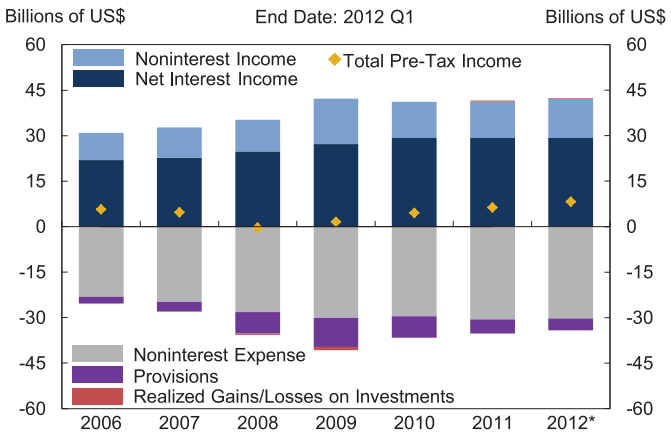
Profitability continues to vary based on the size of the institution, with smaller credit unions historically lagging behind larger credit unions. The industry still faces some uncertainty over future losses associated with failed corporate credit unions; with future resolution costs projected to total between $2.7 billion and $6.0 billion over the coming years, these assessments are not likely to curtail industry growth and profitability. Larger concerns for the industry are challenges related to the low interest rate environment and managing through a transition into a higher rate environment. As **Chart 5.2.18** shows, fixed-rate real estate as a share of loans and long-term assets as a share of assets have risen over the past several years.

5.2.3 U.S. Branches and Agencies of Foreign Banks

U.S. branches and agencies of foreign banks support lending activity in the United States, but also tend to rely on a funding mix that is less stable than that of most U.S. commercial banks. These branches and agencies are sensitive to the funding and liquidity needs of their parent organizations and depend on access to uninsured deposits that pose a heightened flight risk. Stresses on parent banks and constrained access to short-term dollar funding impinged on branch lending and investment in the United States over the past year, especially by the European branches and agencies.

In addition to the U.S. BHCs, foreign bank families have a large presence within the United States. Together, the U.S. branches and agencies of foreign banks account for close to $2 trillion of banking assets, over 15 percent of total U.S.

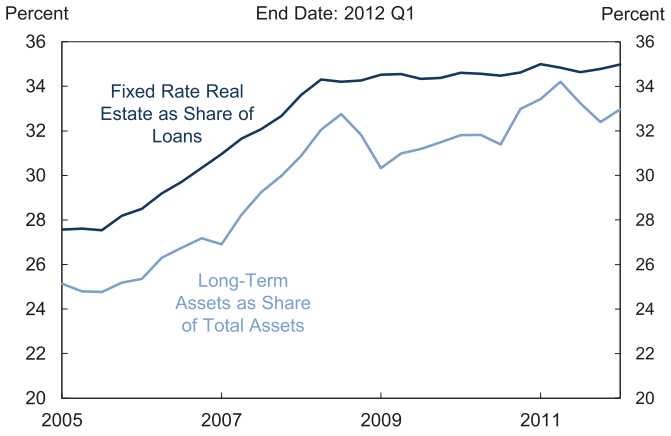
Chart 5.2.17 Federally Insured Credit Union Income



Source: NCUA

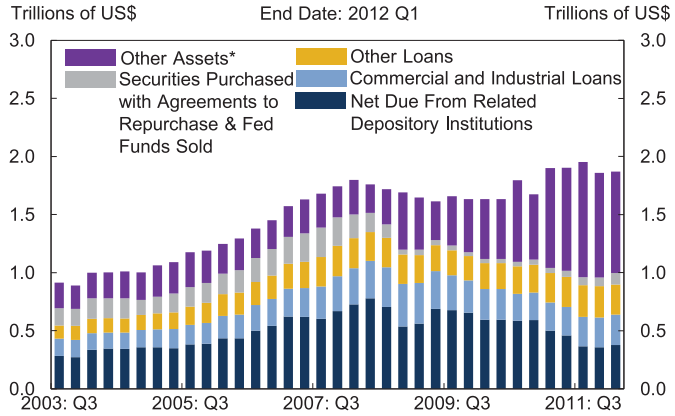
Note: *Annualized

Chart 5.2.18 Credit Union Fixed Rate Real Estate and Long-Term Assets



Source: NCUA

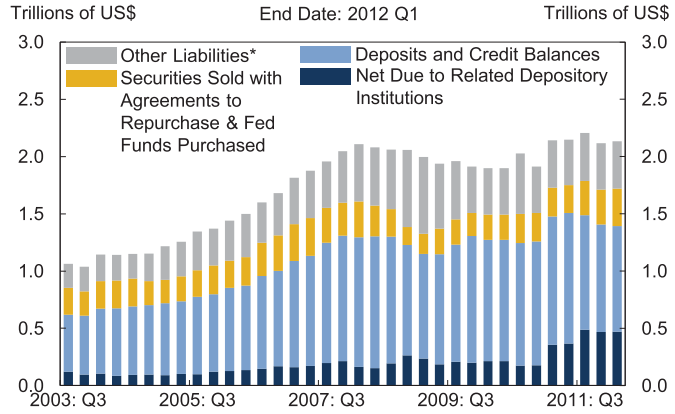
Chart 5.2.19 U.S. Branches and Agencies of Foreign Banks: Assets



*Note: Includes government securities, asset-backed securities, and other trading assets.

Source: Federal Reserve

Chart 5.2.20 U.S. Branches and Agencies of Foreign Banks: Liabilities



*Note: Includes transaction accounts, non-transaction accounts, and other borrowed money.

Source: Federal Reserve

banking assets. These entities represent an important source of credit for U.S. borrowers.

There are different business models in the operations of branches in the United States, with a mix of targeted investment and asset strategies and a range of different funding approaches. On average, branches and agencies generally dedicate about 30 percent of their balance sheets to loans, but can differ substantially in the composition of their lending across commercial and industrial (C&I) activity versus other U.S. domestic customers. Direct C&I loans outstanding by these banks, which represents a major source of financing for U.S. businesses and investment projects, has been as high as $365 billion, but more recently has fallen closer to $260 billion, out of total loans of over $500 billion **(Chart 5.2.19)**. Other securities held as assets have risen sharply from about $300 billion pre-crisis to closer to $1 trillion by 2012:Q1. Some of these branches and agencies also send dollar flows to their parent organizations and related affiliates, as indicated by the levels of Net Due from Related Depository Institutions in the balance sheet decompositions in Chart 5.2.19. These flows support dollar lending and investment activities in the United States and elsewhere. European parent banks in particular have actively used their branches to source dollar funding. Outstanding positions vis-à-vis parent banks currently are a smaller percentage of branch and agency assets than at any point in recent history.

The liability side of balance sheets of the U.S. branches and agencies of foreign banks also has bearing on financial stability **(Chart 5.2.20)**. Most of these U.S. branches are not allowed to offer deposits insured by FDIC and thus lack access to the stable source of funds represented by households' checking, savings, and other transaction accounts. Instead, money market funds and other noninsured deposits provide the majority of funding for these institutions. When such funds and depositors withdraw from particular banks, which occurred in the summer of 2011 when European banks were

viewed as particularly risky, it can destabilize the balance sheets of those banks, leading to deleveraging or potential reversals of support to the parent organization. **(See Box H: Money Market Fund Responses to Euro Area Uncertainty.)** Such dynamics are masked, to some extent, in the aggregate statistics, as these deposits may be reoriented to other U.S. branches and agencies. However, the recent increases in Net Due to Related Depository Institutions shows a greater degree of support from foreign parent banks than previously had been the case, as investments are made to maintain the presence of these banks in U.S. asset classes and reduce contractions of lending activity and asset sell-offs that could otherwise occur.

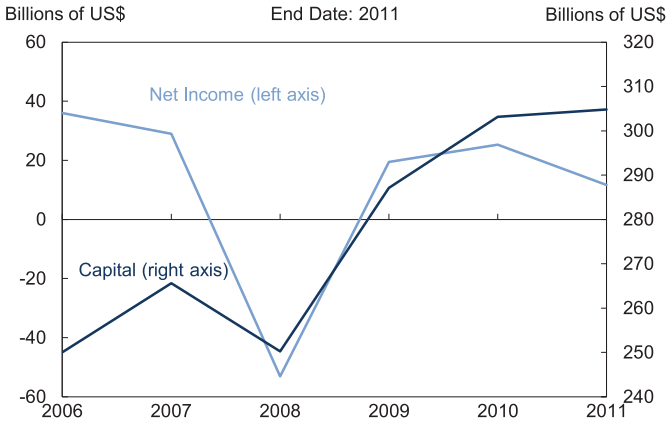
5.3 Other Financial Institutions

5.3.1 Insurance

Despite a substantial net decline in income in 2011, capital levels within the insurance industry improved. The life insurance industry continues to play a significant role in long-term funding of assets through the investment of premium income. The low interest rate environment has proved challenging for life life insurers to generate sufficient investment returns to meet high guaranteed benefits promised in prior years. Property and casualty insurers faced historically higher catastrophe losses that impeded performance in 2011.

For life insurance companies, which sell retirement products such as traditional life insurance contracts and annuities, book capital grew modestly, despite net income declining by over 50 percent or $13.6 billion in 2011 compared to 2010 **(Chart 5.3.1)**. The spread between the yield that life insurers earn on their investments and a measure of the interest rate necessary to maintain policyholder reserves, also known as the required interest rate, has narrowed since 2007 **(Chart 5.3.2)**. If this spread had stayed at 2007 levels, net income would have been $13.0 billion higher during the period from 2008 through 2011—$1.2 billion higher in 2011 alone.

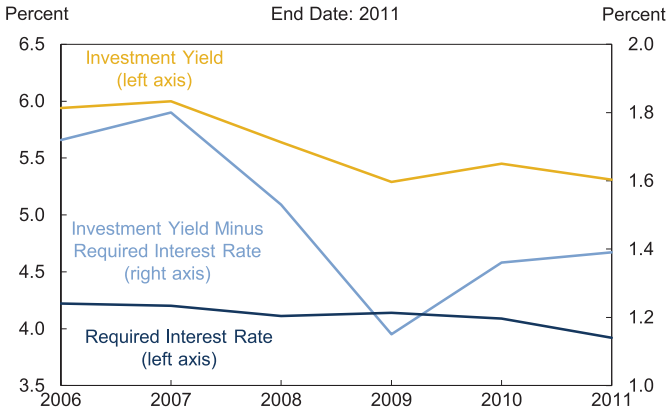
Chart 5.3.1 Life and Other Insurance: Capital and Income



Source: NAIC

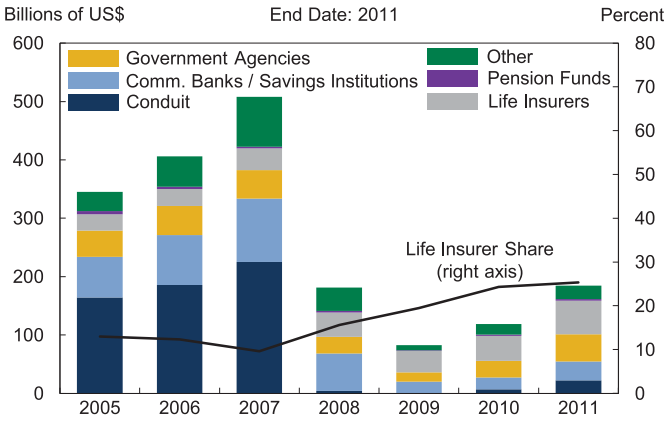
Note: Includes accident and health.

Chart 5.3.2 Life Insurers: Impact of Low Rate Environment



Source: NAIC

Chart 5.3.3 Commercial Mortgage Origination by Lender Type



Source: Mortgage Bankers Association

The low interest rate environment poses a significant challenge for life insurers with sizable blocks of liabilities incorporating embedded interest rate guarantees, such as annuities or universal life insurance policies. The industry has reduced its minimum guarantees over time, but products sold when interest rates were higher represent a continued drag on profits. The share of life and annuity product account values subject to a minimum guaranteed rate of return of 5 percent or higher fell from 20 percent to 10 percent over the 2006-2010 period, but more than 40 percent of account values were still subject to a minimum guaranteed rate of return of 3.5 percent or higher in 2010. Life insurers have exited selected markets due to the inability to meet the minimum guaranteed returns associated with the underlying products in this low rate environment. Of note, life insurers have increased their use of non-traditional investments, such as hedge funds and private equity, perhaps as a response to the low interest rates that currently prevail.

The role of the life insurance industry in funding new commercial mortgages has increased since the collapse of conduit activity in 2008. Life insurers funded roughly 25 percent of new commercial mortgages in 2011, compared to 10 percent in 2007 **(Chart 5.3.3)**. Although the industry is playing a larger role in financing new loans, commercial mortgages as a share of total life insurance assets have decreased modestly from 2007 to 2011 to less than 1 percent of assets.

Property and casualty insurers, who sell insurance on homes, cars, and businesses, are less affected by the low interest rate environment because they underwrite shorter duration liabilities without embedded interest rate guarantees. However, property and casualty insurers were pressured by large catastrophe losses in 2011. Insured catastrophe losses were $33.6 billion in 2011, 135 percent higher than in 2010 and exceeded only by the extraordinary losses associated with Hurricane Katrina in 2005. Property and casualty assets fell slightly

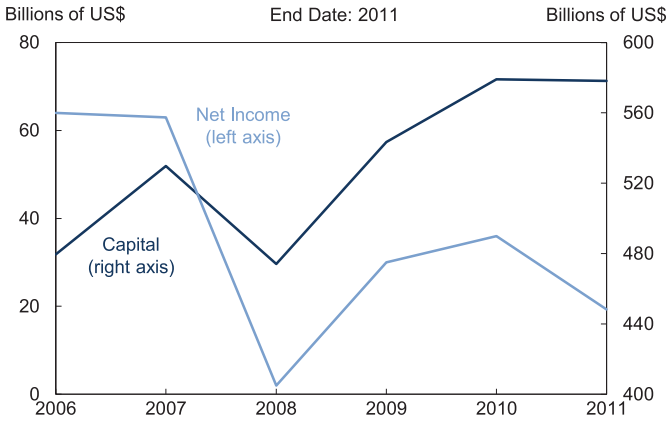
during 2011, although book capital levels were largely unchanged despite a 46 percent decline in net income from 2010 to 2011 **(Chart 5.3.4)**.

5.3.2 Money Market Funds

Total money market fund (MMF) assets declined over calendar year 2011, reflecting low yields and concerns over European exposures. Low rates also reduced revenue flows to fund managers. Substantial redemptions from MMFs in the summer of 2011 in response to heightened financial market uncertainty associated with euro area stresses and federal budget negotiations in the United States illustrates the extent to which MMFs are still subject to pro-cyclical redemption pressures.

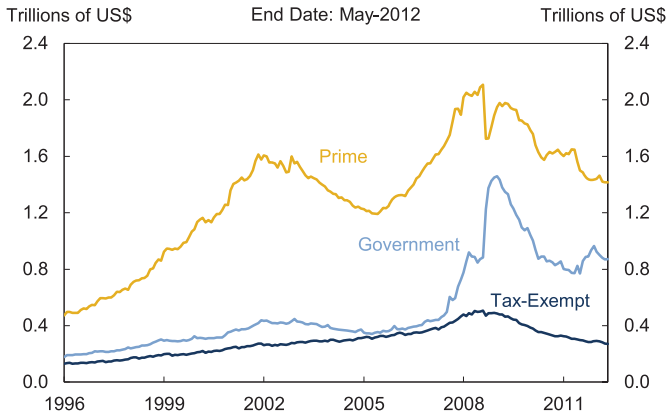
Total U.S. MMF assets declined from $2.80 trillion at year-end 2010 to $2.56 trillion as of May 2012. Prime MMF assets declined from $1.62 trillion to $1.42 trillion, while government and Treasury MMF assets increased from $855 billion to $872 billion during this period. Tax-exempt funds also declined from $330 billion to $272 billion **(Chart 5.3.5)**. During July and August of 2011, there was significant redemption activity due to the European debt crisis and the political uncertainty in the United States leading up to the debt limit extension in early August 2011. Between the end of May and the end of August 2011, prime MMF assets fell by more than $160 billion (9.8 percent) **(Chart 5.3.6)**, with some funds diminished by as much as 50 percent over this period. Prime fund bank holdings in France continued to decline through the end of 2011. **(See Box H: Money Market Fund Responses to Euro Area Uncertainty.)** Since that period, prime MMFs have bolstered their liquidity levels to better handle redemptions, with daily liquidity levels ranging from 26 percent to over 30 percent and weekly liquidity levels holding at over 40 percent in late 2011 and early 2012 **(Chart 5.3.7)**. MMFs also reduced maturities since the summer of 2011, with the weighted average life for prime MMFs falling to around 70 days **(Chart 5.3.8)**.

Chart 5.3.4 Property and Casualty Insurance: Capital and Income



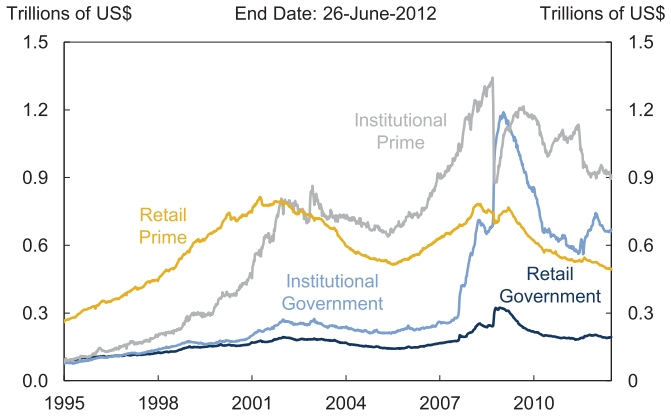
Source: NAIC

Chart 5.3.5 Money Market Mutual Fund Assets by Fund Type



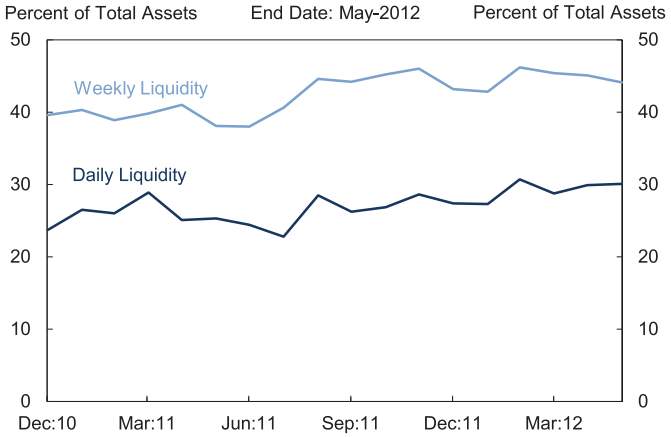
Source: ICI, Haver Analytics

Chart 5.3.6 Institutional vs. Retail Money Market Fund Assets



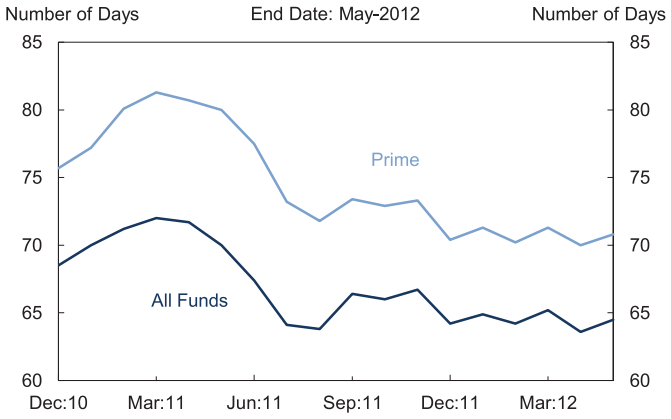
Source: iMoneyNet

Chart 5.3.7 Prime Funds Liquidity



Source: OFR, SEC

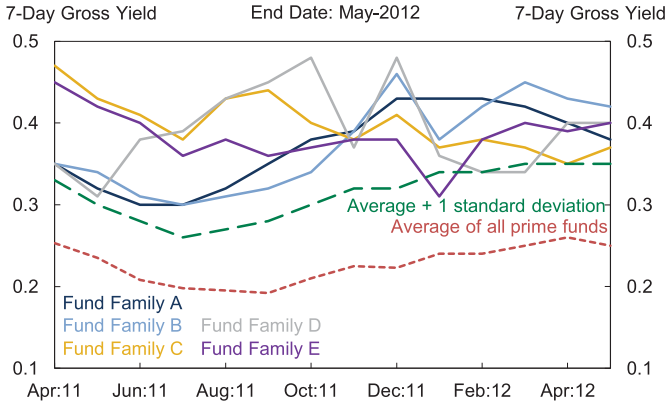
Chart 5.3.8 MMF WAL*



Source: OFR

Note: *Weighted average lives, weighted by size of fund.

Chart 5.3.9 Gross Yield of 5 Outlier MMF Families



Source: SEC

Note: Fund families are not named to retain anonymity.

The low interest rate environment also affected revenues of MMF managers. Total expense ratios for MMFs have fallen from 49 basis points to 25 basis points for retail MMFs and from 26 basis points to 18 basis points for institutional MMFs from 2009 to 2011. This significant drop, particularly among retail MMFs, is primarily due to fee waivers by MMF sponsors to preserve a positive net yield for MMF investors. As the extended low interest rate environment continues to put pressure on MMF yields, some MMFs have shown a willingness to take on additional portfolio risk **(Chart 5.3.9)**, which increases MMF gross yields and offsets the pressure to provide fee waivers. Thus, while on average, MMFs have shown a decreased risk appetite in 2012, some funds have sought to increase their risk profile.

5.3.3 Broker-dealers

The broker-dealer (BD) industry contracted significantly while reducing leverage. Concentration in the industry increased.

As of year-end 2011, there were 4,679 domestic- and foreign-owned BDs operating in the United States. Coinciding with a sharp decline in leverage within the industry, assets held within the U.S. BD industry fell sharply to $4.8 trillion at 2012:Q1—a decline of 25 percent since 2007 **(Chart 5.3.10)**.

The U.S. BD sector is relatively concentrated; at year-end 2011, 60 percent of industry assets were held by the top 10 BDs, the largest of which are affiliated with foreign banks and domestic BHCs. By contrast, the top 10 independent BDs represented only 6 percent of industry assets. In late 2011, the third largest independent BD, MF Global, filed for bankruptcy. **(See Box D: MF Global Bankruptcy.)**

Aggregate pretax income declined by 59 percent in 2011 to $14 billion, as trading revenues declined sharply **(Chart 5.3.11)**.

5.3.4 Specialty Lenders

Specialty lenders continue to play a critical role in providing credit to those markets not served by the traditional banking industry and providing necessary funding in certain segments of the mortgage markets.

The specialty lending sector is composed of a wide range of entities, ranging from real estate investment trusts (REITs) who invest a majority of their capital in mortgage and mortgage-related holdings, to captive finance arms of major manufacturers who facilitate the financing of the parent firm's products. As of April 2012, specialty lenders owned approximately $654 billion of consumer loans, $330 billion of real estate loans, and $434 billion of business loans. Aside from consumer credit revolving loans and retail business loans **(Charts 5.3.12 and 5.3.13)**, specialty lenders experienced a slight decline in loan balances across a wide variety of loan categories, which was consistent with overall trends in the traditional banking industry.

As the GSEs have reduced their investment portfolios, REITs have been a rapidly growing source of investment capital for agency mortgage-backed securities (MBS). As of 2012:Q1, REITs held $299.4 billion of agency MBS, a 109 percent increase from 2010 and roughly five times pre-crisis levels **(Chart 5.3.14)**.

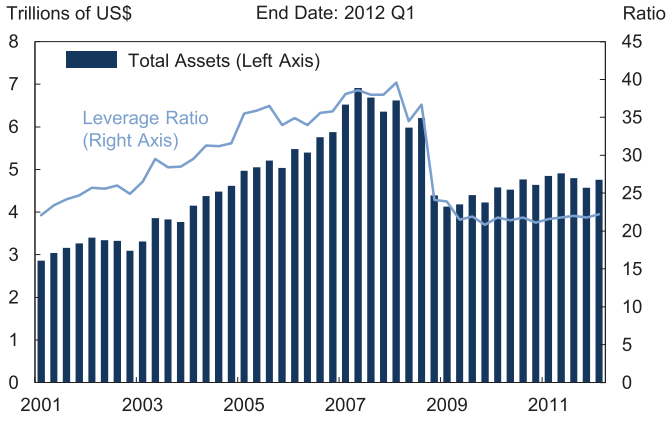
5.3.5 Investment Funds

Across the various types of investment companies, fund flows seem to reflect a general shift towards deleveraging and risk reduction by households and corporations within the uncertain financial environment. Performance in this low interest rate environment tended to be lackluster.

Mutual Funds

Mutual fund flows from year-end 2010 to 2012:Q1 reflect growing investor preference for capital preservation, income generation, and lower volatility. Mutual funds had an estimated $202 billion net inflow for the period, largely attributable to taxable bond funds, which received a net $217 billion **(Chart 5.3.15)**. Of

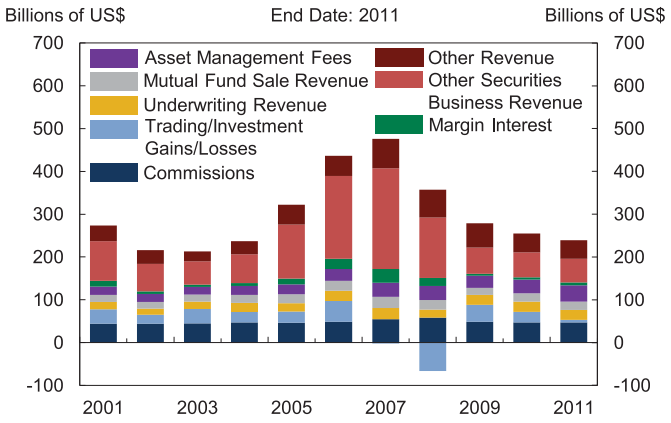
Chart 5.3.10 Aggregate Broker-Dealer Assets and Leverage



Source: SIFMA DataBank

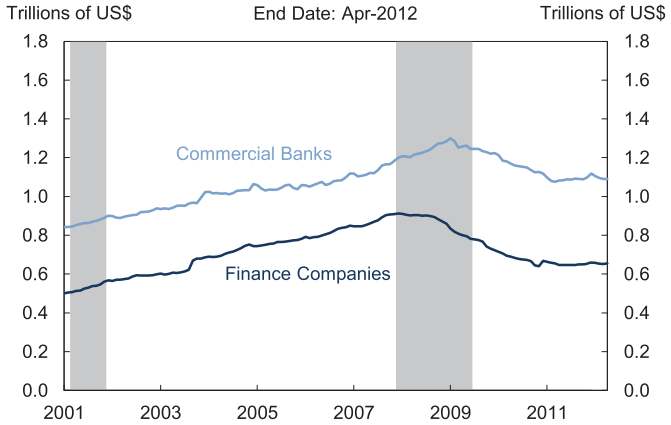
Note: Leverage is total assets as a multiple of equity.

Chart 5.3.11 Broker-Dealer Revenues



Source: SIFMA DataBank

Chart 5.3.12 Consumer Loans Outstanding



Source: Federal Reserve

Note: Loans owned and securitized. Gray bars signify NBER recessions.

BOX D: MF GLOBAL BANKRUPTCY

MF Global Holdings Ltd. (MFG) and MF Global Finance USA Inc. filed on a consolidated basis for relief under Chapter 11 bankruptcy protection on October 31, 2011. Of particular interest in the United States was the jointly registered broker-dealer (BD) and futures commission merchant (FCM), operating as MF Global Inc., which entered liquidation proceedings under the Securities Investor Protection Act (SIPA).

The jointly registered BD-FCM was a clearing member at several domestic central counterparty (CCP) clearing houses, including the Chicago Mercantile Exchange (CME), the Options Clearing Corporation, and National Securities Clearing Corporation (NSCC). The BD was also a primary dealer in government securities with the Federal Reserve Bank of New York. The BD-FCM conducted business for its own account, as well as for customers.

A series of events led to the bankruptcy of MFG. Between March 2010 and March 2011, MFG entered into repurchase agreement transactions collateralized to maturity with European sovereign debt securities. During 2011, the company continued its almost uninterrupted series of quarterly operating losses (9 of 11 quarters through September 2011) that resulted partly from declining interest income earned from investing customer funds. On October 24, Moody's downgraded MF Global Holdings Inc., citing exposure to European sovereign debt, high leverage, and its likely inability to achieve financial targets. The following day, MFG announced a $192 million quarterly loss. MF Global Holdings Inc.'s debt was subsequently downgraded to junk. Industry observers believe that the ratings downgrade also precipitated the lowering of the collateral advance rate on the term to maturity repurchase agreements, prompting a margin call. The earnings report and credit-rating downgrade also impacted MFG's liquidity, as certain counterparties and clearing organizations assessed their credit exposure to MFG and imposed increased collateral requirements.

On the day of the bankruptcy, the company did not default to the CME, the Options Clearing Corporation, or NSCC. However, later on the same day, the company reported a shortfall in customer-segregated assets. The full extent of the shortfall in commodities customer funds will not be known until the Trustee managing MFG's liquidation completes its efforts to recover assets and finalizes the customer claims process. The Trustee has distributed approximately $3.9 billion to date to customers who were trading primarily on U.S. futures markets. This represents approximately 72 percent of such customers' account balances. The Trustee also received the approval of the Bankruptcy Court on April 26, 2012, to distribute up to an additional $685 million, including $600 million to customers with claims for accounts trading on U.S. contract markets.

The Trustee, however, has stated that there is an approximate $1.6 billion gap between the value of the Trustee's estimate of potentially allowable commodities claims and the assets that are currently under the Trustee's control. A significant component of the gap in customer funds is attributable to approximately $700 million of customer assets that were deposited with MF Global UK Limited, an MFG affiliate in the United Kingdom, for trading on non-U.S. markets. The Trustee is disputing the treatment of these funds under English law with the Joint Special Administrators of MF Global UK Limited, and the likelihood of such assets being repatriated is uncertain at this time and is expected to be subject to future litigation or further United Kingdom court action. In addition, multiple federal agencies are reviewing the circumstances surrounding the transfers of monies out of customer-segregated bank accounts (particularly certain transfers that occurred during the week prior to the bankruptcy filing).

An SIPC-led liquidation was initiated on October 31. The firm had 200 to 300 securities accounts totaling less than $500 million in assets and over 38,000 commodity customer accounts totaling over $7 billion. The SIPA Trustee managing the liquidation is responsible for returning customers' property as quickly as possible, including both securities and commodities customers. As stated previously, approximately 72 percent of U.S. segregated customer property has been distributed to commodities customers trading on U.S. designated futures markets as of April 25 on a pro rata basis. As a result of a distribution

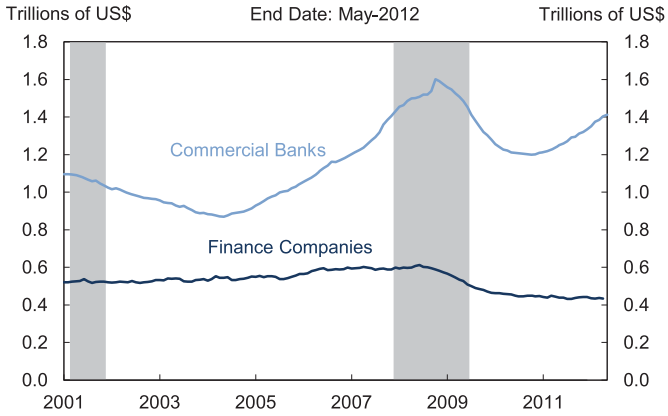
of funds recently approved by the bankruptcy court, that number should increase to over 80 percent.

The missing customer money highlights the issue of customer protection for commodities accounts. FCM accounts at custodians that contain customer property are under the control of the account holder, the FCM. FCMs routinely keep substantial amounts of their own capital in their customer accounts in order to protect against any possibility of a shortfall in customer accounts that may result from daily market moves, margin requirements, and other activity. Accordingly, it is critical for custodians to monitor the transfer of any money out of segregated accounts.

The CFTC has taken steps to enhance customer protection. In December 2011, the CFTC amended its regulations governing derivatives clearing organizations (DCOs) and FCM investment of customer funds. Among other things, the CFTC eliminated from the list of permitted investments BD-FCM in-house transactions that are the economic equivalent of repurchase agreements, repurchase agreements with affiliates, corporate notes and bonds that are not federally guaranteed, and foreign sovereign debt instruments. The amended regulations also imposed asset-based concentration limits and repo counterparty concentration limits, in addition to mandating stricter issuer-based concentration limits than had been applied previously.

The CFTC has also issued a new rule for customer segregation of cleared swaps, called legal segregation with operational commingling (LSOC). Under this model, each FCM will provide the DCO with position and collateral valuation information at the customer account level. The DCO can hold customer collateral provided by FCMs in the same commingled manner as it holds margin assets for exchange traded products. In a situation of "double default," where the default of an FCM customer causes the FCM to default to the DCO, the DCO would be able to then identify and access the collateral of the defaulting customers of the FCM but not the collateral of the non-defaulting customers, as is permitted today with exchange-traded futures.

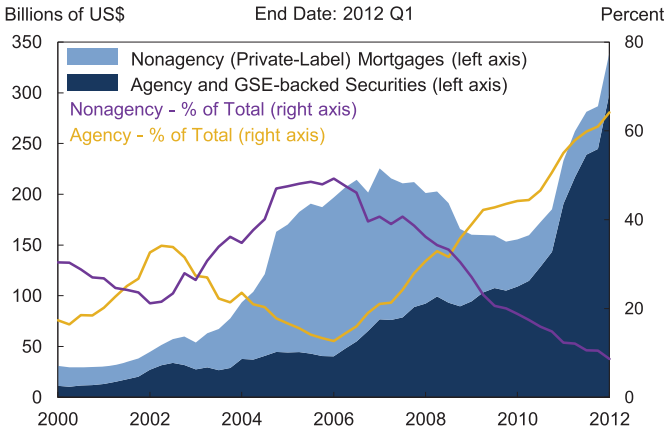
Chart 5.3.13 Business Loans Outstanding



Source: Federal Reserve

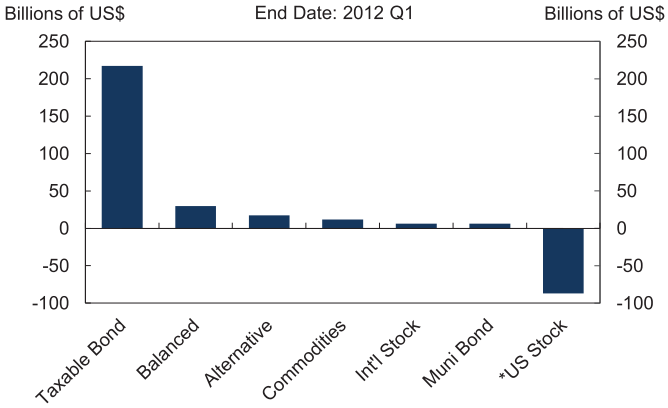
Note: Loans owned and securitized. Gray bars signify NBER recessions.

Chart 5.3.14 Real Estate Investment Trust (REIT) Assets



Source: Flow of Funds, Haver Analytics

Chart 5.3.15 Mutual Fund Flows by Asset Class (2011 to 2012 Q1)



Source: Morningstar

*Note: Includes sectors stock funds with int'l exposure.

note, the strong asset growth rates in high-yield funds (17 percent growth rate, relative to 2011 year-end net assets) and emerging market bonds (55 percent growth rate) over this period may reflect investor preference for yield among lower volatility fixed income products **(Chart 5.3.16)**. In contrast, U.S. equity funds had net outflows of $86 billion, with net monthly outflows since May 2011.

Pension Funds

As of the fourth quarter 2011, the combined assets under management of private and public pensions were over $15.3 trillion **(Chart 5.3.17)**.

Both public and private defined benefit plans remain significantly underfunded relative to the present value of their liabilities due to inadequate past contributions, low interest rates, and losses incurred in 2007 and 2008. As of year-end 2011, public defined benefit plans were only 76 percent funded, while private defined benefit plans were 79 percent funded **(Chart 5.3.18)**. Some private pension funds have received contributions to make up shortfalls or have been able to adjust their plans to reduce future outlays.

A number of state and local pension funds continue to grapple with structural shortfalls between their assets and liabilities. While these pension funds face pressure to reduce their expected return assumptions, many are reluctant to change assumptions in a meaningful way, reducing expected returns by only 25 to 50 basis points over the past three years. Currently the median assumed expected return across public plans is 8 percent, while private sector estimates of returns are closer to 6 percent.

Over the past three years, many states and localities have increased efforts to address long-term pension funding issues by curtailing benefits and increasing employee contributions, among other measures. Analyst views on the impact of these changes on pension funding profiles differ, with some viewing them as positive for long-term plan sustainability, while

others regard them as insufficient to address medium-term funding needs. To reduce fiscal pressures, state and local pension funds may seek to further curtail benefits for current and future retirees or seek increased financial support from their respective sponsors. If successful, these developments could lead to lower expected payouts for employees, reduced services, higher taxes, or some combination of all three. However, public pension benefits are often legally guaranteed, and amending them remains challenging.

Private Equity Funds

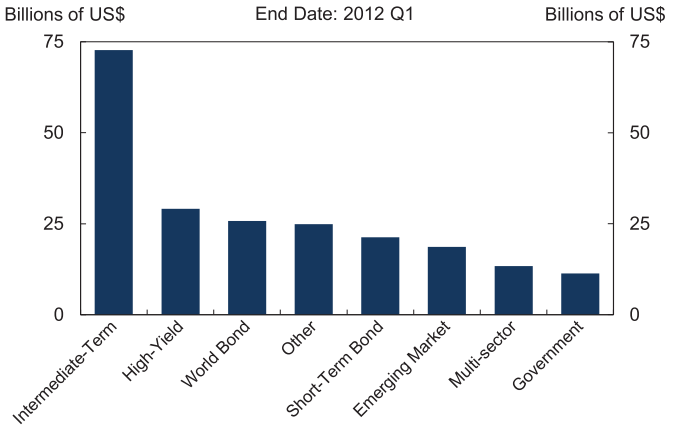
U.S. private equity assets under management increased to $1.7 trillion in 2011 **(Chart 5.3.19)**. The growth in assets continued to be supported by allocations from institutional investors such as pension funds, which comprise 43 percent of U.S. private equity capital. Although leveraged buyouts and venture capital account for over half of private equity assets under management, advisers continue to diversify their investment strategies into areas such as real estate, natural resources, distressed assets, and emerging market opportunities **(Chart 5.3.20)**.

The high volume of fund-raising and robust deal activity that signified pre-crisis private equity activity created the conditions that currently prevail, with advisers now focused on exiting existing investments and deploying committed capital. Given the constrained initial public offering (IPO) environment and tepid mergers and acquisitions activity amid ongoing economic uncertainty, private equity firms are focused on realizing returns on historically high levels of existing portfolio investments. They are also seeking investment opportunities for over $500 billion in undeployed capital commitments stemming from record levels of fund-raising from 2005 to 2007. (See Chart 5.3.19.)

Hedge Funds

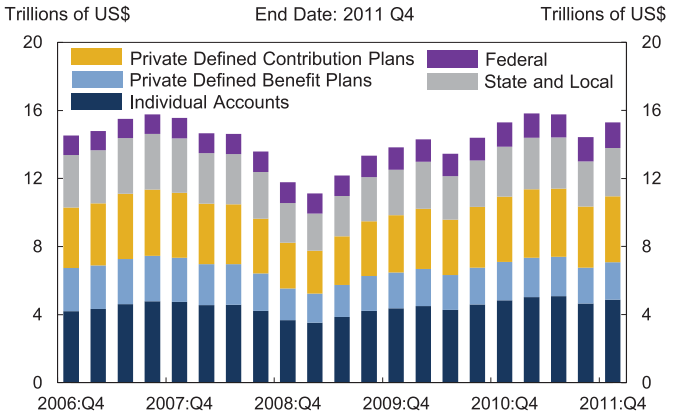
Institutional investors continue to be interested in hedge funds as an asset class in part because of the perception that the correlations between hedge funds and broad asset classes are low.

Chart 5.3.16 Mutual Fund Taxable Bond Flows (2011 to 2012 Q1)



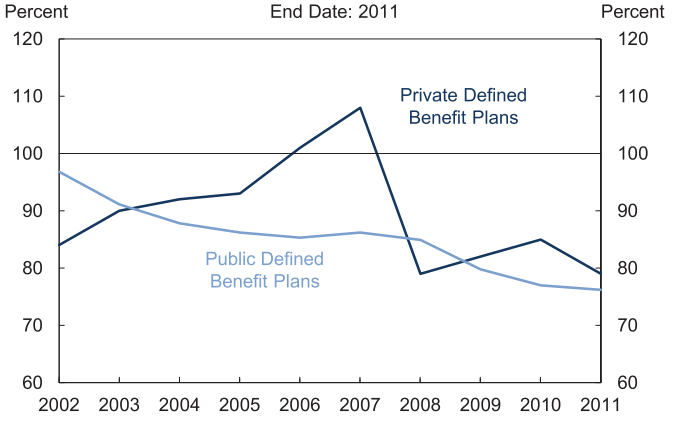
Source: Morningstar

Chart 5.3.17 Retirement Funds by Type



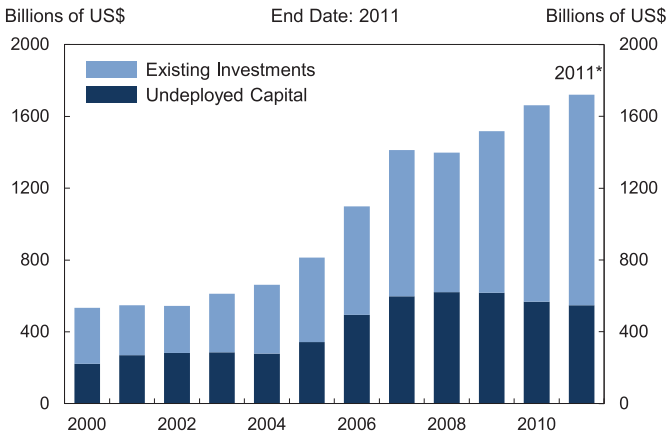
Source: Flow of Funds, Haver Analytics

Chart 5.3.18 Public and Private Pension Funding Level



Source: NASRA, Goldman Sachs Asset Management

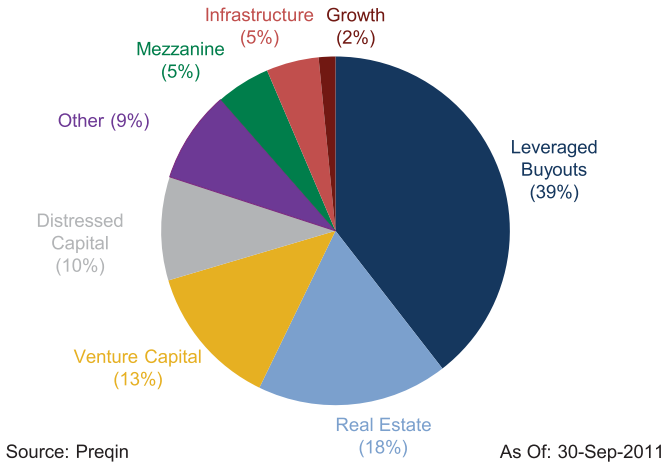
Chart 5.3.19 U.S. Private Equity AUM



Source: Preqin

Note: *As of 30-Sep-2011.

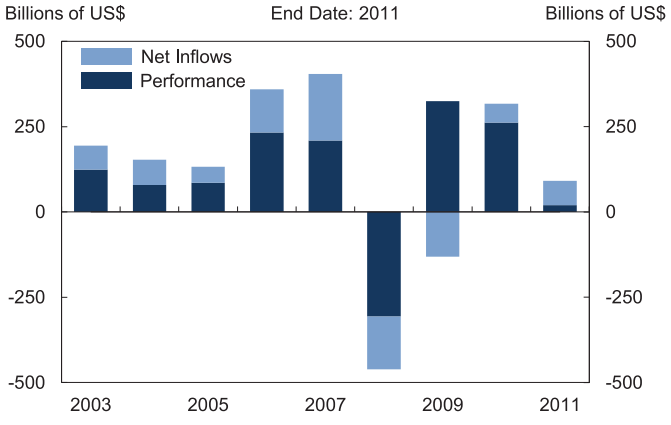
Chart 5.3.20 U.S. Private Equity AUM by Strategy



Source: Preqin

As Of: 30-Sep-2011

Chart 5.3.21 Change in Hedge Fund AUM



Source: Hedge Fund Research, FSOC calculations

At year-end 2011, assets managed by hedge funds were approximately $2.13 trillion, which represents a 3.5 percent increase from year 2010. This growth in assets under management primarily reflected inflows, rather than fund performance in 2011 **(Chart 5.3.21)**. In fact, hedge funds had lackluster performance across the major strategies for the calendar year **(Chart 5.3.22)**. Similar to other investment options, hedge fund performance has rebounded slightly in early 2012.

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. This trend continued through 2011 and into 2012 as larger funds benefitted from the perception of increased stability.

Exchange Traded Funds

Exchange traded funds (ETFs) remain a popular means of achieving exposure to various market indices, as evidenced by their continued growth in terms of product launches and asset growth **(Chart 5.3.23)**. In 2011, the number of U.S.-listed ETFs grew by 28 percent to 1,353 products, and ETF assets grew by 6 percent to $1.06 trillion. Compared to 2010, net inflows in 2011 remained flat at $121 billion with higher concentrations of funds moving into ETFs with taxable bond, U.S. stock, and sector-specific strategies.

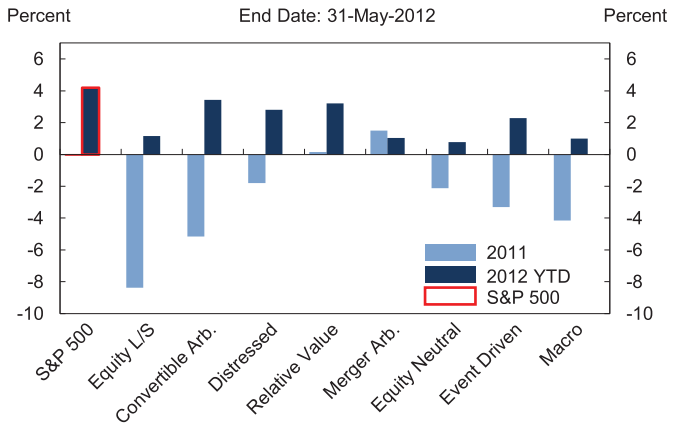
The U.S. ETF market remains populated predominately by passively managed products that track widely followed indexes in equity, fixed income, and commodity markets. Recently, alternative index strategies have emerged as ETF providers adapt to an increasingly saturated market. These "fundamental indexing" products rebalance their holdings according to proprietary methodologies that seek to extract value that is either not captured, or is obscured by, existing index construction. For example, among equity-based ETFs, such products may focus on lower volatility, lower beta to the broader market, higher earnings quality, higher dividend yield,

and so forth. On a related note, fixed income is widely viewed by industry observers as a likely avenue of growth for passively managed funds.

In addition to the growth of fundamental indexing, actively managed ETFs are cited by some as a potential new avenue for the ETF industry to grow. ETFs are required to disclose their holdings daily, while traditional mutual funds generally disclose their holdings quarterly. The requirement for daily disclosure is a matter of concern to some active managers, who fear the exposure of their strategies in the ETF structure may adversely affect the values of their funds. However, 2012 has seen notable launches of and filings for new actively managed ETFs, particularly for fixed income products, indicating that active management may indeed overcome the disclosure issue.

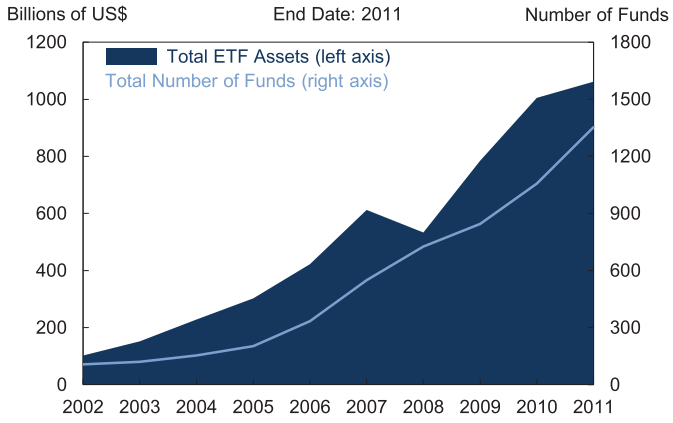
Despite the continued robust growth of the global ETF market, market participants remain attentive to some potential risks pertaining to ETFs, which may not yet be fully understood. In particular, some market participants continue to highlight the synthetic ETF structure as a potential transmission mechanism for risks between the United States and European financial systems. A synthetic ETF generates the return of an index through a total return swap with a bank, whereas a "physical" ETF holds the actual index constituents. Synthetic ETFs are common in Europe but not in the United States. Synthetic ETFs may manage to track indexes with lower trading costs and lower tracking error—particularly for less liquid markets—compared to an ETF. However, despite their potential advantages, some market participants continue to voice concerns over the potential for this structure to amplify financial market stresses in the event that a bank engaging in swaps with a synthetic ETF sponsor should be unable to meet its obligation. In addition, the emergence of new types of ETFs and similar products, such as leveraged and inverse-leveraged ETFs, actively managed ETFs, and ETFs based on very particularized asset classes, is a growing trend in the market and a focus of regulators.

Chart 5.3.22 Hedge Fund Performance by Strategy



Source: Hedge Fund Research

Chart 5.3.23 Growth in ETF Assets and Number of Funds



Source: Morningstar

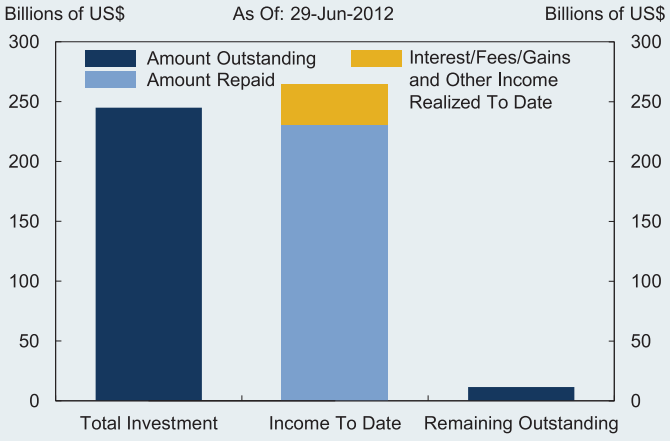
BOX E: CURRENT STATUS OF REMAINING STABILIZATION FACILITIES INAUGURATED DURING THE CRISIS

During the crisis, various federal agencies set up facilities to help stabilize the financial system when private market functioning was severely disrupted. While several of these facilities still hold net balances, most have been wound down in a manner that protects the U.S. taxpayer.

Troubled Asset Relief Program Bank Support Programs

Key parts of the federal government's response to the financial crisis were carried out by Treasury under the Troubled Asset Relief Program (TARP). Among several TARP programs targeting the banking system, the largest was the Capital Purchase Program (CPP), under which Treasury invested approximately $205 billion in over 700 banking organizations. The CPP is now closed. As of June 29, 2012, repayments—along with interest, dividends, and other income—exceeded the original disbursement. Treasury estimates that the total gain to taxpayers from the $245 billion disbursed under all bank support programs under TARP will ultimately exceed $20 billion **(Chart E.1)**.

Chart E.1 TARP Bank Support Program Status



Source: U.S. Department of Treasury

Temporary Liquidity Guarantee Program

The federal government's response to the financial crisis also included the FDIC's Temporary Liquidity Guarantee Program (TLGP). The Transaction Account Guarantee (TAG) portion of the TLGP guaranteed deposits in non-interest-bearing transaction accounts at insured depository institutions. The TAG expired on December 31, 2010. Section 343 of the Dodd-Frank Act, which provided unlimited deposit and share insurance coverage for non-interest-bearing transaction accounts beginning December 31, 2010, is scheduled to expire December 31, 2012. As of March 31, 2012, $1.3 trillion in non-interest-bearing accounts at over 7,000 institutions exceeded the basic coverage limit of $250,000 per account but was fully insured by temporary coverage. Under the TLGP, the FDIC guaranteed newly issued senior unsecured debt of insured depository institutions, their holding companies, and certain affiliates. No new debt can be guaranteed under the TLGP, but approximately $109 billion in guaranteed debt remained outstanding as of May 31, 2012.

Term Asset-Backed Securities Loan Facility

The Term Asset-Backed Securities Loan Facility (TALF), which the Federal Reserve and Treasury began operating in 2009, was created to help market participants meet the credit needs of households and small businesses by supporting the issuance of asset-backed securities (ABS) collateralized by certain consumer and business loans. Under the TALF, the Federal Reserve provided eligible borrowers with three-year and five-year non-recourse loans, collateralized by ABS.

In total, $71 billion in loans were provided under the TALF, but many were repaid early. The outstanding amount of TALF loans fell from $24.7 billion at the start of 2011 to $5.3 billion as of June 20, 2012. As of the end of March 2012, all collateral pledged against outstanding TALF loans maintained their AAA ratings, and all loans were performing as scheduled. Treasury committed to provide the Federal Reserve up to $20 billion under TARP in credit protection for the TALF. This amount was later reduced to $4.3 billion in July 2010 and subsequently reduced to $1.4 billion in June 2012. Treasury expects to incur no losses on this balance.

Maiden Lane LLC

Outside of and prior to TARP, the Federal Reserve Board authorized the Federal Reserve Bank of New York (FRBNY) to form Maiden Lane LLC (ML LLC) to facilitate the merger of Bear Stearns with JPMorgan Chase (JPM). The Federal Reserve Board authorized FRBNY to extend credit to ML LLC, which it did through a $28.8 billion senior loan,

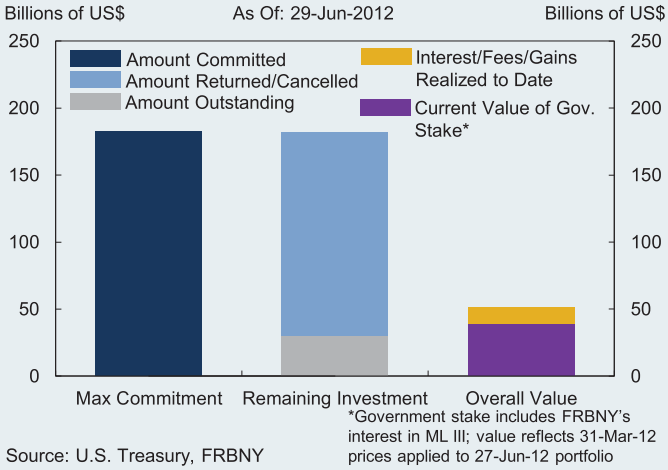
to partially fund the purchase of certain assets and associated hedges from Bear Stearns. As of June 14, 2012, ML LLC fully repaid the loan (including interest) made by FRBNY.

Assistance to American International Group

The Federal Reserve Board and the Treasury provided a coordinated response to alleviate capital and liquidity pressures on American International Group (AIG). At its peak, the amount committed to support AIG through FRBNY and Treasury was approximately $180 billion. FRBNY support included a secured revolving credit facility to AIG, as well as the formation and extension of credit to Maiden Lane II LLC (ML II) and Maiden Lane III LLC (ML III). To date, all of FRBNY's loans to AIG and to MLII and ML III have been repaid with interest.

As of June 29, 2012, only Treasury's TARP investment in AIG remained outstanding. The $30.44 billion unpaid balance is less than the $34 billion market value of the AIG common stock that Treasury holds. This stake and FRBNY's residual interest in assets held by ML II and ML III holdings related to FRBNY's investments in AIG are likely to produce an additional profit for the U.S. public **(Chart E.2)**.

Chart E.2 AIG Investments Committed and Returned



Source: U.S. Treasury, FRBNY

Mortgage-Backed Security Purchase Program

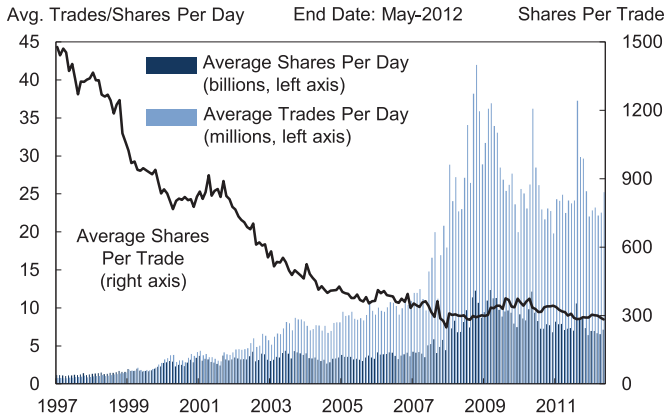
Using its authorities under the Housing and Economic Recovery Act of 2008, Treasury supported the housing market by purchasing mortgage-backed securities (MBS) issued by Fannie Mae and Freddie Mac. In 2008 and 2009, Treasury purchased MBS on the secondary market at a cost of $225 billion and completed the liquidation of these holdings in March 2012. The proceeds of sales, in addition to principal and interest received, were $250 billion, exceeding the program's cost by approximately $25 billion.

Auto Industry

Treasury created the Automotive Industry Financing Program (AIFP) in December 2008 to prevent a significant disruption of the U.S. automotive industry because of the risks such a disruption could pose to financial stability and the U.S. economy. Under the AIFP, Treasury invested approximately $80 billion in General Motors (GM), Chrysler, and their respective financing arms. As of 2012:Q1, GM and Chrysler, after substantial reorganizations, reported nine and five consecutive profitable quarters, respectively.

Treasury has made substantial progress toward exiting its investments in automotive companies and continues to monitor the performance of these firms and evaluate options to exit its investments. As of June 30, 2012, Treasury's investment in GM stood at $23.39 billion and in Ally Financial at $13.75 billion. Treasury has fully exited its investment in Chrysler and Chrysler Financial, which resulted in a $1.3 billion loss unlikely to be fully recovered.

Chart 5.4.1 Average Trade Size—U.S. Equities



Source: U.S. Exchanges, Tabb Group

5.4 Financial Market Infrastructure

5.4.1 Electronic Trading of Exchange-Traded Instruments

Technology has dramatically changed the market for exchange-traded instruments, with the growth in computerized trading algorithms resulting in smaller trade sizes, higher volumes, and potentially more complex trading strategies. At the same time, a proliferation of trading venues outside traditional exchanges has resulted in increased fragmentation of equities markets and could have broader implications for the financial system.

Advances in computing and communication technology, along with regulatory changes, have transformed electronic trading. High-speed computerized trading has been a hallmark of modern equities, futures, and foreign exchange markets and has spread in recent years to markets for derivatives and fixed income instruments. Computerized trading is used to facilitate a wide array of activities, including automated order routing and so-called high-frequency trading. **(See Box F: Algorithmic and High-Frequency Trading.)** A vast expansion of market data supports these activities.

Along with decimalization of U.S. equity and equity options markets, electronic trading has resulted in smaller tick sizes and decreasing trade sizes. In particular, a common use of computerized trading algorithms is to split trades into multiple smaller transactions. As seen in **Chart 5.4.1**, average size per trade in U.S. equities markets declined 81 percent since 1997, while volumes increased more than 500 percent through May 2012. This practice of trade splitting has become increasingly evident over the past 15 years. Its likely purpose is to minimize the price impact of trading, but decreased trade sizes may also be a component of more complex computerized trading strategies.

More generally, liquidity has been fragmented among various equity trading modalities, including exchanges, alternative trading systems, broker-dealer internalizers, and

so-called "dark pools." The latter are trading systems that are not openly available to the public in which buyers and sellers submit orders anonymously, with neither order size nor price revealed publicly until the trade has been completed. In May 2012, almost a third of all trading in the equities market occurred outside exchanges in such dark pools and broker-dealer internalizers, where customer orders are matched against each other or against proprietary orders of the internalizing broker-dealer **(Chart 5.4.2)**.

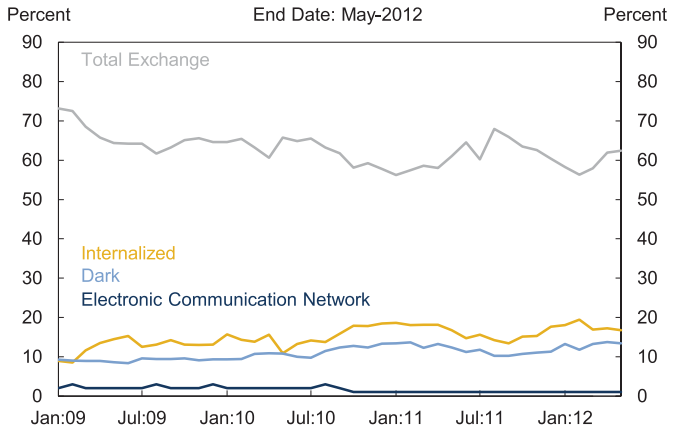
More recently, equities exchanges have been competing for market share in an environment of narrowing spreads, lower commissions, greater competition, and declining share volumes. Specifically, average daily volume of U.S. shares trading has declined 20 percent since a peak of 9.82 billion shares in 2009 to 7.83 billion at the end of 2011 **(Chart 5.4.3)**. Also noteworthy is the growth of trading in the Asia Pacific region. From 2000 through 2009, Asia's share of global trading more than doubled **(Chart 5.4.4)**. This growth in Asian trading is a by-product of the rapid economic growth in this region, with a concomitant growth in demand for financial services.

5.4.2 Wholesale Payments and Settlements

Activity within the wholesale payments utilities has rebounded as both volumes and values continue to increase since the crisis. Robustness for the largest of these utilities, the Fedwire® Funds Service, has improved, with earlier settlement times and reduced operational risk. In addition, new and more demanding international standards have been released for large value payments and settlement utilities, as well as for other financial market infrastructures.

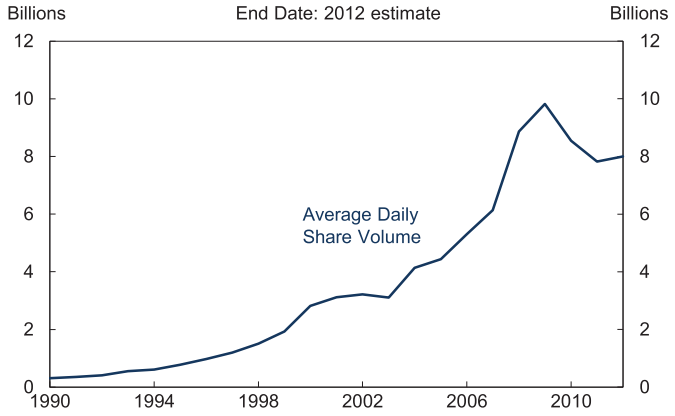
The major wholesale payments utilities supporting U.S. financial markets are the Fedwire Funds Service, a real-time gross settlement system operated by the Federal Reserve Banks, and the Clearing House Interbank Payments System (CHIPS), a continuous net settlement system operated by The Clearing House Payments Company

Chart 5.4.2 Average Daily Volume Shares by Venue



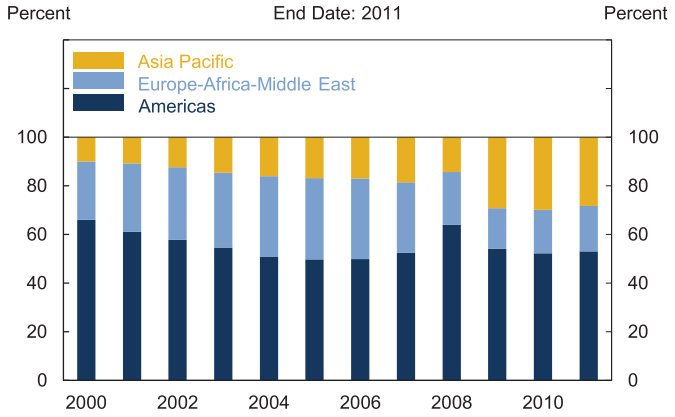
Source: Tabb Group

Chart 5.4.3 U.S. Equities Share Volume



Source: Tabb Group

Chart 5.4.4 Regional Market Share of Trades



Source: WFE

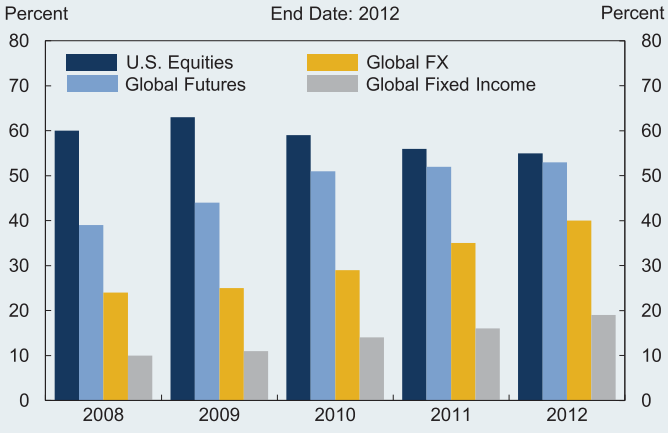
Note: Years 2000-2008 include electronic and negotiated deals. Years 2009-2011 include only electronic deals.

BOX F: ALGORITHMIC AND HIGH-FREQUENCY TRADING

Advancements in technology have had a profound effect on trading, as activity has become faster, more complex, and highly automated. Although computer-based algorithms have been utilized in U.S. equities markets for quite a while, the expansion into other markets and the proliferation of high-speed algorithmic trading—along with the current fragmented market structure—could lead to unintended errors cascading through the financial system. Regulators and market participants must help ensure that adequate controls and risk-management practices are in place to mitigate these risks.

High-speed algorithmic trading utilizes computer algorithms to determine the timing, price, and quantity of trades. High-frequency trading (HFT) is one particular type of algorithmic trading. While there is no standard, commonly accepted definition of HFT in the industry, HFT typically refers to the use of computerized trading to move in and out of positions rapidly, generally ending the day flat with little or no exposure to the market on an overnight basis. In contrast, other styles of algorithmic trading allow positions to be held over longer time horizons. HFT is widely used in U.S. equities, global futures, and global foreign exchange, accounting for nearly 56 percent, 52 percent, and 35 percent of total trading, respectively, in 2011 **(Chart F.1)**.

Chart F.1 HFT % Use in Various Asset Classes



Source: Aite Group

Note: 2012 Estimate.

Algorithms have long been used in U.S. equities markets, notably to route orders to the trading venue with the best execution price in compliance with the SEC's Regulation National Market System (NMS). Over the past decade, algorithms have been adapted for trading in other asset classes. A notable class of computerized trading algorithms is so-called "black box" strategies, which are fully automated and preprogrammed, and which generally have trades initiated directly by the algorithm itself. Black box trading algorithms are capable of reacting to market data, transmitting thousands of order messages per second directly to electronic trading venues, cancelling and replacing orders based on changing market conditions, and capturing price discrepancies with little or no human intervention.

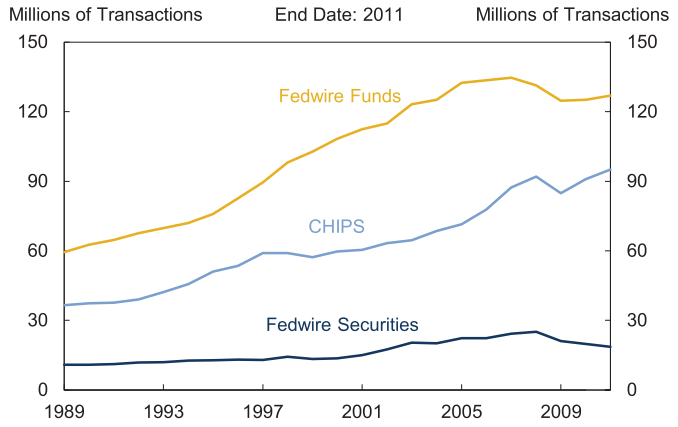
Given the speed with which these transactions are executed, errors can propagate rapidly through systems and across markets. Such errors could include unintended accumulation of large positions, out-of-control algorithms, and erroneous "fat finger" trades. As a result, prudent and timely risk management is of paramount importance in these markets. Appropriate pre- and post-trade risk controls are desirable at all levels of the trade life cycle, from trade submission to trade matching, clearing, and settlement. Therefore, trading firms, exchanges, broker-dealers (BD), future commission merchants (FCM), foreign exchange prime brokers (FXPB), service providers, and clearing organizations each have an important role to play in preventing, detecting, and responding to potential computer-generated trading errors.

The desire for faster execution has prompted changes within the marketplace to minimize latency. Latency is a measurement of the time it takes to send an order to a trading venue and for a trading venue to acknowledge the order. Participants seek to minimize latency in order to increase the chances of getting prompt order execution at the best price. Factors affecting latency include geographical distance and response time from the exchange's matching engine and the speed at which market data and other signals from the marketplace are processed.

Reducing latency is particularly important for high-frequency traders because the passage of time, even for an instant, exposes them to market risk. Price makers are exposed to the risk that their orders could remain in the order book after the market has moved in the opposite direction of their trading strategy and before their cancellations are processed. Price takers are exposed to the risk that a resting order they want to capture could be cancelled prior to execution or could be captured by another, faster trader.

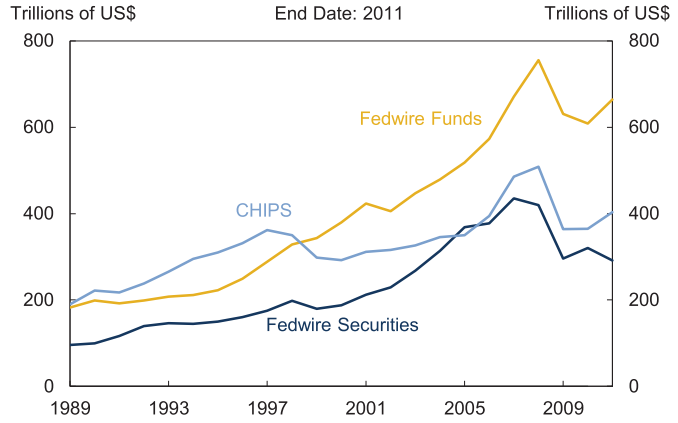
In response to demand for faster execution, some trading venues allow "direct access" (sometimes referred to as "sponsored access"), through which certain trading firms access the exchange's matching engine directly, bypassing the systems of their sponsoring BD, FCM, or FXPB. It is important that sponsoring entities offering direct access have proper controls in place for monitoring their clients' activity across the relevant platforms. Another way trading firms can reduce latency is to place (co-locate) their servers as near as possible to the trading venue's matching engine(s). An important policy issue is the extent to which trading firms have equal access to co-location or direct access services. BDs, FCMs, and FXPBs are financially responsible for the trades of all their customers, including those that engage in algorithmic trading. To help ensure prudent customer risk management in the equity market, the SEC implemented Rule 15c3-5 in July 2011, which (among other things) requires BDs to maintain a system of controls and supervisory procedures reasonably designed to limit the financial exposures arising from customers that access the markets directly. In addition, the SEC recently approved two proposals by the SRO and FINRA. The first proposal would update, on a pilot basis, the existing single-stock circuit breaker mechanism with an additional "limit-up" and "limit-down" mechanism that effectively prohibits trades from being immediately executed at prices outside of prescribed rolling bands. The second proposal would update, also on a pilot basis, the existing market-wide circuit breakers that, when triggered, halt trading in all exchange-listed securities throughout the U.S. markets. The proposed changes lower the percentage-decline threshold for triggering a market-wide trading halt and shorten the amount of time that trading is halted. Among other things, these mechanisms would help mitigate the impact of any algorithmic orders that could otherwise rapidly drive the price of a stock up or down. In the futures market, the CFTC has adopted rules to bolster risk management at the exchange, clearing firm and other levels. In the foreign exchange market, prime brokers are increasingly making use of post-trade services designed to help prime brokers manage client risk on a real-time, intraday basis across multiple trading venues.

Chart 5.4.5 Annual Payment Clearing Volumes



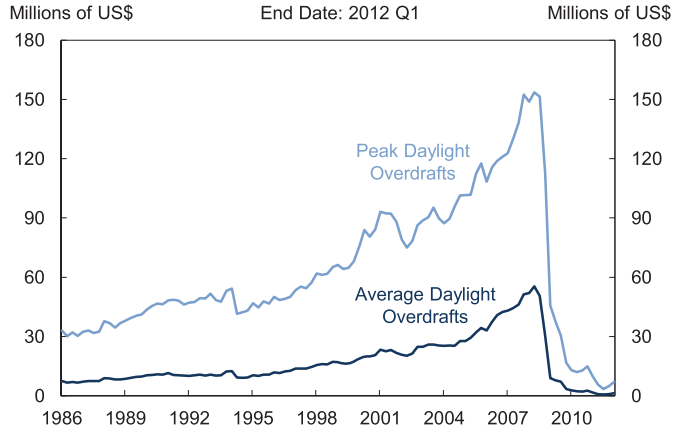
Source: Federal Reserve, CHIPS

Chart 5.4.6 Annual Payment Clearing Values



Source: Federal Reserve, CHIPS

Chart 5.4.7 Fedwire Funds Daylight Overdrafts



Source: Federal Reserve

LLC. The Fedwire Securities Service provides securities issuance, settlement, and transfer services for the U.S. Treasury, U.S. government agencies and government-sponsored enterprises, and certain international organizations.

There was a sharp decline in 2009 in annual payment clearing volume and value for the Fedwire Funds Service, CHIPS, and the Fedwire Securities Service from pre-crisis peaks **(Charts 5.4.5 and 5.4.6)**. From 2009 through 2011, volume and values continued to modestly decline for the Fedwire Securities Service and showed a moderate rebound for Fedwire Funds Service and CHIPS.

Two noteworthy developments in U.S. large value payment systems are the reduced use of daylight overdrafts **(Chart 5.4.7)** and the earlier submission of payments **(Chart 5.4.8)**. Before 2008, only 20 percent of Fedwire Funds Service payments (by value) were settled by 1:00 p.m. (Eastern), and only 50 percent were settled by 4:00 p.m. (Eastern). As of May 2012, some 20 percent of Fedwire Funds Service value settled by 10:00 a.m., and 50 percent settled before 2:00 p.m. (Eastern). Both of these developments appear to be driven largely by the increase in the quantity of reserves on bank balance sheets **(Chart 5.4.9)**. From an operational risk perspective, earlier payment submission decreases the potential magnitude of liquidity dislocations and risk in the financial industry should an operational disruption occur near the close of the Fedwire day at 6:30 p.m. (Eastern). An open question is whether payments will revert back to late-in-the-day settlements if and when reserve balances revert to the pre-crisis norm.

A final noteworthy development in wholesale payments and settlements is the release by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) of a new package of standards called Principles for Financial Market Infrastructures, subject to adoption by regulators

in individual jurisdictions. The principles are intended to apply to all systemically important payment systems, central securities depositories, securities settlement systems, central counterparties, and trade repositories (collectively "financial market infrastructures"). These principles contain new and more demanding international requirements that are designed to help ensure that the infrastructure supporting global financial markets is more robust and thus well placed to withstand financial shocks. The CPSS and IOSCO members (including the Federal Reserve, the CFTC, and the SEC) will strive to implement the new standards by the end of 2012.

5.4.3 Derivatives Infrastructure

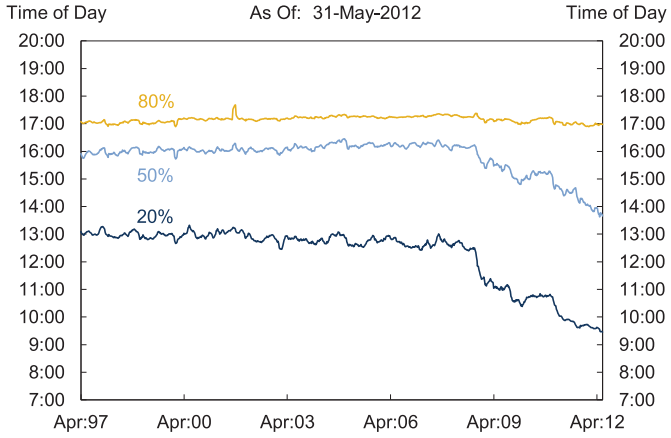
Global use of over-the-counter (OTC) derivatives expanded in 2011. Increasingly, these derivatives are centrally cleared, and data on these derivatives trades are reported to trade repositories, developments which enhance robustness of these markets.

Global Derivatives Volumes

As measured by notional value, the global OTC market has grown considerably faster than the exchange-traded derivatives markets **(Chart 5.4.10)**. Comparing the second half of 2011 to the second half of 2010, the OTC market grew at an 8 percent pace, reflecting continued strong demand by end users for customized risk-management products. In contrast, the exchange-traded markets declined by 17 percent over this period. Notional volumes for both exchange-traded and OTC interest rate products declined sharply in the second half of 2011, with notional amounts for OTC interest rate swaps dropping from $553 trillion (U.S. dollars) to $504 trillion from 2011:H1 to 2011:H2, and exchange-traded numbers in the same period declining from $76 trillion to $53 trillion **(Chart 5.4.11)**. It is likely that these declines were due to less need for interest-rate hedging in an environment of low interest rates and diminished credit growth.

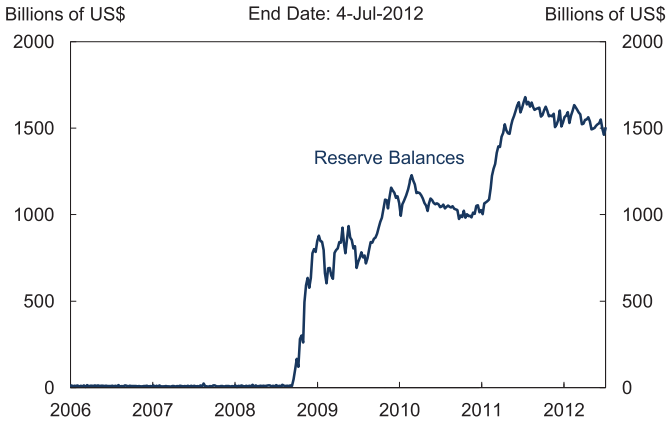
As measured by number of contracts, over two-thirds of exchange traded derivatives were traded outside the United States in

Chart 5.4.8 Deciles of Fedwire Value Time Distribution



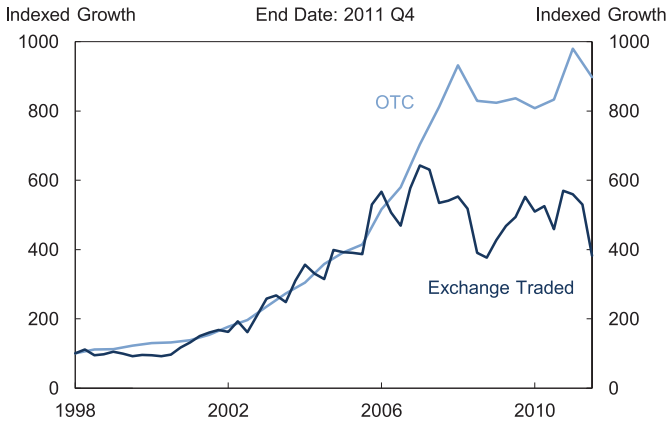
Source: FRBNY, Martin, Bech and McAndrews (2012)

Chart 5.4.9 Reserve Balances



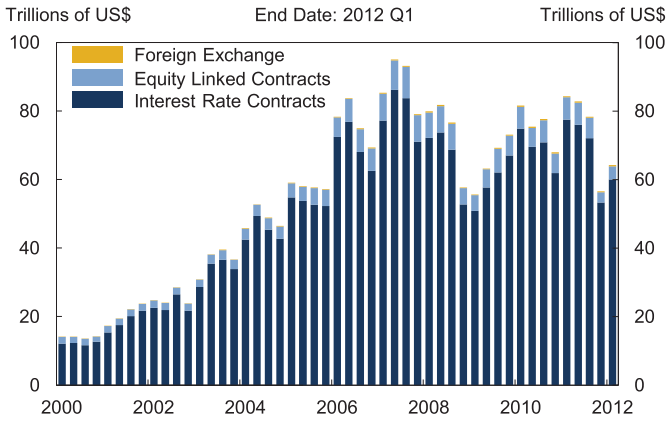
Source: Federal Reserve

Chart 5.4.10 Global OTC and Exchange-Traded Derivatives Growth



Source: BIS Note: Notional values, Indexed such that 1998 Q2 = 100.

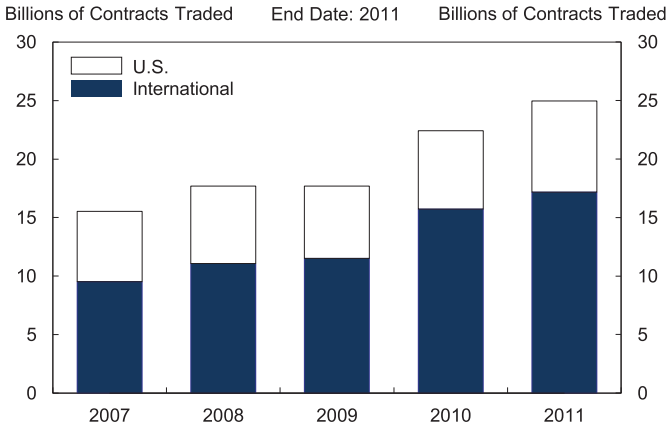
Chart 5.4.11 Global Exchange-Traded Derivatives



Source: BIS

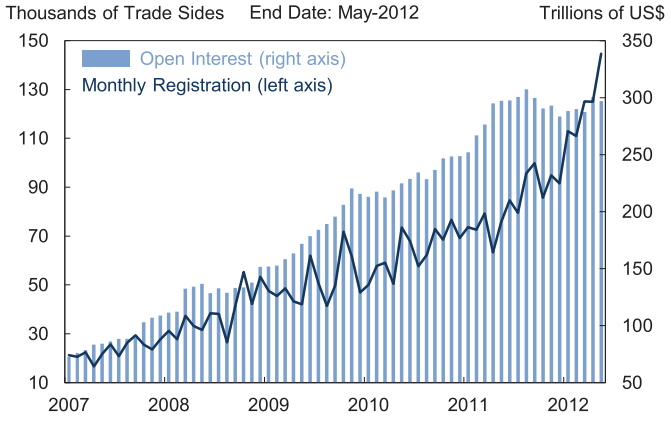
Note: Notional values.

Chart 5.4.12 Exchange-Traded Derivatives Globalization



Source: Futures Industry Association

Chart 5.4.13 SwapClear Volume



Source: LCH.Clearnet

2011 **(Chart 5.4.12)**. The share of derivatives volume traded on non-U.S. exchanges has been increasing over the past several years.

Central Clearing of Derivatives

A major trend in OTC markets over the past few years is the increasing numbers of OTC derivatives cleared by central counterparty (CCP) clearing houses. CCP provide credit risk mitigation for market participants by acting as buyer to every seller and seller to every buyer. Prior to 2009, there had been central clearing of OTC derivatives, including clearing of interest rate swaps (IRS) by LCH.Clearnet's SwapClear and clearing of various energy derivatives by the ClearPort system operated by the New York Mercantile Exchange (now part of Chicago Mercantile Exchange, or CME) and by IntercontinentalExchange's (ICE) ICE Clear Europe. In 2009, ICE Clear Credit (formerly known as ICE Trust) and ICE Clear Europe, as well as CME, began clearing credit default swaps (CDS). Since the 2009 G-20 commitment, which calls for central clearing of all standardized OTC derivative contracts by the end of 2012, clearing activity has grown dramatically in all such asset classes. Subsequent legislation in the United States (the Dodd-Frank Act) and regulation in the European Union (the European Market Infrastructure Regulation) are consistent with the spirit of the G-20 commitment.

A good deal of progress has been made toward central clearing of standardized OTC derivatives contracts, although there is still progress to be made. LCH.Clearnet's SwapClear reports that the outstanding notional value of cleared IRS has grown from about $70 trillion in 2007 to almost $300 trillion going into June 2012 **(Chart 5.4.13)**. The number of new IRS contracts cleared per month ("monthly registration" in Chart 5.4.13) has risen from a bit over 20,000 in 2007 to nearly 150,000. SwapClear now estimates that 52 percent of new IRS trades are presented to it for clearing. As of June 29, 2012, 40 percent of the notional value of IRS cleared by SwapClear is denominated

in euros, with 36 percent denominated in U.S. dollars **(Chart 5.4.14)**.

CDS markets also show a substantial increase in centrally cleared contracts. According to the International Swaps and Derivatives Association (ISDA), centrally cleared CDS contracts represented 10.6 percent of the notional amounts outstanding as of December 2011. The two major CCPs for CDS both show significant growth in clearing: ICE Clear Credit's open interest has grown from de minimis amounts three years ago to $905 billion notional as of June 15, 2012, comprising $470 billion in index products, $390 billion in corporate single-name contracts, and $45 billion in sovereign single names. ICE Clear Europe reports similar growth **(Charts 5.4.15 and 5.4.16)**.

CCPs have added numerous new products to clearing. For example, the various clearing entities associated with the ICE added over 125 new OTC derivatives to their lists of products accepted for clearing, including energy swaps, emission swaps, and additional index, single-name and sovereign CDS over the past few months. Eurex Clearing has announced its intention to begin clearing OTC IRS in the second half of 2012. In mid-March 2012, LCH.Clearnet's ForexClear began clearing OTC foreign exchange (FX) non-deliverable forwards (NDF). CME Group is also now clearing OTC FX, and NDF. ICE announced their plans to begin NDF clearing as well. Finally, the Options Clearing Corporation is developing a Standard & Poor's (S&P) 500 OTC option for clearing.

One of the expected benefits of centralized clearing of OTC derivatives is the possibility of netting offsetting contracts that accumulate through repeated trading. LCH.Clearnet's SwapClear reports a reduction of about 25 percent of the notional value presented to it for clearing through netting, tearing up of offsetting contracts, and other processes to eliminate redundant contracts. ICE Clear Credit reports a much larger netting efficiency. They achieved a reduction of about 90 percent

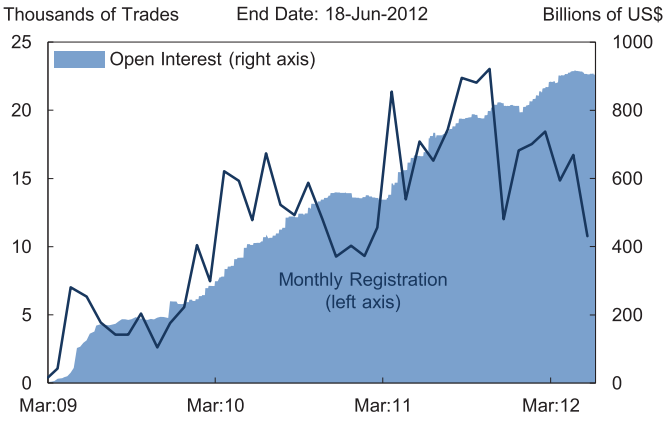
Chart 5.4.14 Outstanding SwapClear Volumes

As Of: 29-Jun-2012

Currency	Outstanding Notional (Trillions of US$)	Outstanding Trades
USD	109.3	357,663
EUR	121.8	340,609
GBP	23.8	105,031
JPY	33.8	148,162
CHF	3.4	24,736
Other	13.5	118,385
Total	**305.6**	**1,094,586**

Source: LCH.Clearnet

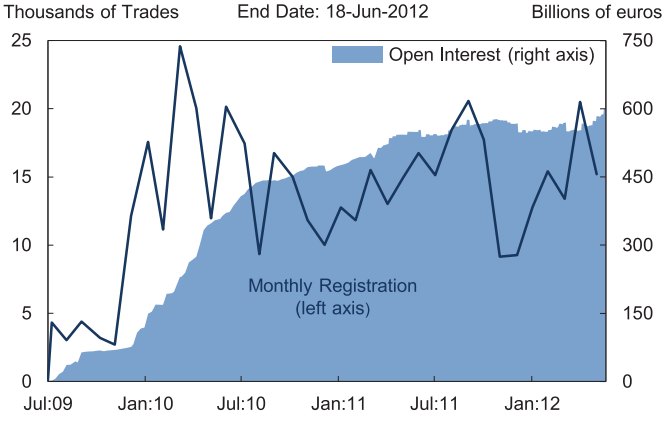
Chart 5.4.15 ICE Clear Credit



Source: ICE

Note: Only trading days shown.

Chart 5.4.16 ICE Clear Europe



Source: ICE

Note: Only trading days shown.

Chart 5.4.17 Interest Rate Derivatives

As Of: 20-Apr-2012

Counterparty Type	Gross Notional (BUSD EQ)	Gross Notional (%)	Trade Count	Trade Count (%)
CCP	259,704	52 %	1,819,070	42 %
G14 Dealer	82,124	17 %	669,861	16 %
Non-G14 Dealer	154,061	31 %	1,813,638	42 %
Total	**495,889**		**4,302,569**	

Source: TriOptima

Note: The G14 is an industry group of the most active global derivatives dealers. A G14 dealer is on at least one side of all TriOptima trades.

Chart 5.4.18 CDS and Other Credit Derivatives

As Of: 29-Jun-2012

		Seller Type					
		Dealer		Non-Dealer /Customer		Totals	
		Gross Notional (Billions of US$ EQ)	Contracts	Gross Notional (Billions of US$ EQ)	Contracts	Gross Notional (Billions of US$ EQ)	Contracts
Buyer Type	Dealer	15,714	1,718,302	4,627	294,067	20,341	2,012,369
	Non-Dealer/ Customer	4,629	284,384	28	2,749	4,658	287,133
	Total	**20,343**	**2,002,686**	**4,656**	**296,816**	**24,999**	**2,299,502**

Source: Trade Information Warehouse, DTCC

of the notional value of the original CDS trades presented for clearing through netting, tear-ups, and other compression processes.

Trade Repositories

A relatively new feature in the market infrastructure for swaps is the development of trade repositories (TR). Under Title VII of the Dodd-Frank Act, the details of all swaps (and security-based swaps) will have to be reported to a TR (or to the CFTC or SEC, as appropriate, if no TR is available). The major global swaps market participants are working to establish a trade repository for each asset class and have voluntarily provided information to the repositories on their ongoing and, in some instances, legacy trades. TRs are operational in the United States, United Kingdom, and/or Luxembourg for interest rate swaps, credit default swaps, equities swaps, commodities swaps, and FX swaps. Additional TRs are expected to be operational by year-end 2012.

TRs data can be used to measure the size and composition of different swaps markets. For example, according to TriOptima, a TR that served the interest rate derivatives market through mid-2012 (before being replaced by a unit of Depository Trust and Clearing Corporation), some $495.9 trillion (notional) interest rate derivatives contracts have been reported to the TR by the so-called G-14 dealers, of which a bit over one-half are cleared by a CCP **(Chart 5.4.17)**. The vast majority of these centrally cleared swaps are dealer-to-dealer contracts. In addition, another 17 percent reported as non-centrally cleared dealer-to-dealer contracts were among the G-14 major swaps dealers. Similarly, the Trade Information Warehouse, a TR for CDS, reports that $25.0 trillion (notional) CDS contracts were reported to the TR, of which $15.7 trillion (approximately 63 percent) are dealer-to-dealer **(Chart 5.4.18)**. This preponderance of dealer-to-dealer swaps, especially those among the largest dealers, appears to be an ongoing feature of these markets. Industry contacts

report that these interdealer trades are mostly for the purpose of hedging the risks associated with market-making activities. It is of interest that, in aggregate, dealer positions as seller of CDS protection ($20.343 trillion notional) approximately equal dealer positions as buyer of such protection ($20.341 trillion notional). In other words, the dealer community in aggregate has approximately a flat CDS book without a pronounced directional tilt.

6 Regulatory Developments; Council Activities

Over the last year, Dodd-Frank Act implementation included introducing stronger supervision, risk management, stress testing, and disclosure standards; establishing resolution plans and an orderly liquidation regime for financial companies; regulating the derivatives markets to reduce risk and increase transparency; reforming the securitization markets; enhancing standards and disclosure requirements for hedge fund advisers; and implementing measures to enhance consumer and investor protection.

In addition, the Council has continued to make progress in fulfilling its mandate. It has issued a final rule and guidance relating to the designation of nonbank financial companies for Federal Reserve supervision and enhanced prudential standards, and has finalized the designation of an initial set of eight systemically important financial market utilities that will be subject to enhanced risk-management standards. The Council also continued to monitor potential risks to U.S. financial stability; fulfilled explicit statutory requirements, including the completion of three reports; and served as a forum for discussion and coordination among the member agencies implementing the Dodd-Frank Act.

The following is a discussion of the significant implementation progress the Council and its member agencies have achieved since the Council's previous annual report.

6.1 Safety and Soundness

6.1.1 Enhanced Prudential Standards and Dodd-Frank Act Stress Tests

Sections 165 and 166 of the Dodd-Frank Act require the Federal Reserve to establish enhanced prudential standards and early remediation requirements for certain large bank holding companies (BHCs) and for nonbank financial companies designated for Federal Reserve supervision. In December 2011, the Federal Reserve issued, for public comment, a proposal to implement the enhanced prudential standards and early remediation requirements. The Dodd-Frank Act requires the enhanced standards established by the Federal Reserve for covered companies under Section 165 to (i) be more stringent than those standards applicable to other BHCs and nonbank financial companies that do not present similar risks to U.S. financial stability and (ii) increase in stringency based on the systemic footprint and risk characteristics of individual covered companies.

The Federal Reserve's proposal includes risk-based capital, leverage, liquidity, single-counterparty credit exposure limits, supervisory and company-run stress testing, risk management and a risk committee, and early remediation requirements. The proposal would generally apply to all U.S. BHCs with consolidated assets of $50 billion or more and any nonbank financial company that is designated by the Council for supervision by the Federal Reserve. The requirements to establish a risk committee of the board of directors and to conduct a company-run stress test

would also apply to BHCs with total consolidated assets of $10 billion or more. With the exception of the requirements related to company-run stress tests, savings and loan holding companies (SLHCs) that are not designated by the Council would not be subject to the requirements under this proposal. The Federal Reserve's proposal addresses the following:

Risk-based capital and leverage requirements. These rules would be implemented in two phases. In the first phase, the institutions would be subject to the Federal Reserve's capital plan rule, which was published in December 2011. That rule requires covered companies to develop annual capital plans, conduct stress tests, and maintain adequate capital, including a tier one common risk-based capital ratio greater than 5 percent, under both expected and stressed conditions. In the second phase, the Federal Reserve would issue a proposal to implement a risk-based capital surcharge based on the framework and methodology developed by the Basel Committee on Banking Supervision (BCBS).

Liquidity requirements. These measures would also be implemented in multiple phases. First, covered companies would be subject to qualitative liquidity risk-management standards generally based on the interagency liquidity risk-management guidance issued in March 2010. These standards would require covered companies to conduct internal liquidity stress tests and set internal quantitative limits to manage liquidity risk. In the second phase, the Federal Reserve would issue one or more proposals to implement quantitative liquidity requirements based on the Basel III liquidity requirements.

Stress tests. Stress tests of the covered companies would be conducted annually by the Federal Reserve using three economic and financial market scenarios. A summary of the results, including company-specific information, would be made public. In addition, the proposal would require covered companies to conduct one or more company-run stress tests each year and to make a summary of their results public.

Single-counterparty credit limits. These requirements would limit credit exposure of a covered financial company to a single counterparty as a percentage of the firm's regulatory capital. Credit exposure between the largest financial companies would be subject to a tighter limit.

Risk management requirements. The proposal would require covered companies to establish a stand-alone risk committee of the board of directors, and appoint a chief risk officer to oversee enterprise-wide risk management. BHCs with $10 billion or more in consolidated assets would also be required to establish an independent risk committee of the board.

Early remediation requirements. These measures would be put in place for all firms subject to the proposal so that financial weaknesses are addressed at an early stage. The Federal Reserve has proposed a number of triggers for remediation—such as capital levels, stress test results, and risk-management weaknesses—in some cases calibrated to be forward-looking. Required actions would vary based

on the severity of the situation but could include restrictions on growth, capital distributions, and executive compensation, as well as capital raising or asset sales.

The Federal Reserve consulted with members of the Council in developing this proposal. The comment period for the proposal closed on April 30, 2012.

In addition to the stress-testing requirements to be conducted by the Federal Reserve, Section 165(i)(2) of the Dodd-Frank Act also requires certain financial institutions to conduct stress tests based on regulations issued by that institution's primary federal regulator. In January 2012, the OCC, Federal Reserve, and FDIC issued proposed rules to implement these stress test requirements for institutions where they are the primary federal regulator. The comment period on these rules closed in April 2012. The Federal Reserve, OCC, and FDIC are coordinating their respective rulemakings to implement these provisions.

6.1.2 Transfer of Office of Thrift Supervision Functions

Title III of the Dodd-Frank Act transferred various powers and functions of the former Office of Thrift Supervision (OTS) to the OCC, FDIC, and Federal Reserve. This transfer of functions occurred on July 21, 2011, with the Federal Reserve assuming responsibilities for SLHCs, the OCC assuming responsibilities for federal savings associations, and the FDIC for state savings associations. The OCC, FDIC, and Federal Reserve coordinated their efforts to help ensure a smooth transfer of these functions and affected OTS employees. To clarify which agency will be enforcing the OTS rules, the Dodd-Frank Act required the OCC, FDIC, and Federal Reserve to publish a notice in the Federal Register identifying those regulations of the OTS that the agencies will enforce. The FDIC and OCC issued a joint notice on July 6, 2011, and the Federal Reserve issued its notice on July 21, 2011. The OCC has taken a number of additional actions to incorporate applicable OTS regulations in the OCC's chapter of the Code of Federal Regulations and to integrate OTS and OCC regulations and supervisory guidance. The Federal Reserve has similarly taken several steps to establish regulations and supervisory guidance for SLHCs. On July 21, 2011, the Federal Reserve issued supervisory guidance discussing the Federal Reserve's transitional supervisory approach for SLHCs. The Federal Reserve also published an interim rule to incorporate SLHCs into the Federal Reserve's chapter of the Code of Federal Regulations and notices outlining the regulatory reporting requirements for SLHCs.

As of December 31, 2011, there were 417 top tier SLHCs with estimated total consolidated assets of approximately $3 trillion. These SLHCs include approximately 48 companies engaged primarily in nonbanking activities, such as insurance underwriting (approximately 27 SLHCs), commercial activities (approximately 11 SLHCs), and securities brokerage (10 SLHCs).

The 25 largest SLHCs accounted for more than $2.6 trillion of total consolidated assets. Of the SLHCs engaged primarily in depository activities, only five institutions were in the top 25, yet approximately 88 percent of the total SLHCs were engaged primarily in depository activities. The depository firms, however, held only 13 percent or $388 billion of the total SLHC consolidated assets.

6.1.3 Capital Standards, Comprehensive Capital Analysis and Review, and Supervisory Guidance regarding Stress-Testing Practices

In June 2012, the federal banking agencies invited comment on three joint proposed rules that would revise and replace the agencies' current capital rules. The proposals would implement, in the United States, certain aspects of Basel II and 2.5, the Basel III capital reforms, and the Dodd-Frank Act, and would address shortcomings in regulatory capital requirements that became apparent during the recent financial crisis. The first Basel III notice of proposed rulemaking (NPR) would apply to all insured banks and savings associations, top-tier BHCs domiciled in the United States with more than $500 million in assets, and SLHCs that are domiciled in the United States. Provisions of this NPR that would apply to these banking organizations include implementation of a new common equity tier one minimum capital requirement, a higher minimum tier one capital requirement, and, for banking organizations subject to the advanced approaches capital rules, a supplementary leverage ratio that incorporates a broader set of exposures. Additionally, consistent with Basel III, the agencies propose to apply limits on a banking organization's capital distributions and certain discretionary bonus payments if the banking organization does not hold a specified "buffer" of common equity tier one capital in addition to the minimum risk-based capital requirements. This NPR also would revise the agencies' prompt corrective action framework by incorporating the new regulatory capital minimums and introducing common equity tier one capital as a new regulatory capital component. Prompt corrective action is an enforcement framework that constrains the activities of an insured depository institution based on its level of regulatory capital.

In the second capital NPR, also known as the "standardized approach," the agencies propose to revise and harmonize rules for calculating risk-weighted assets to enhance risk sensitivity and address weaknesses identified over recent years, including by incorporating aspects of the Basel II standardized framework, and alternatives to credit ratings, consistent with Section 939A of the Dodd-Frank Act. The revisions include methods for determining risk-weighted assets for residential mortgages, securitization exposures, and counterparty credit risk. The NPR also would introduce disclosure requirements that would apply to U.S. banking organizations with $50 billion or more in total assets. This NPR would apply to the same set of institutions as the first NPR.

The third Basel III NPR would revise the advanced approaches risk-based capital rules consistent with Basel III and other changes to the BCBS's capital standards. The agencies also propose revising the advanced approaches risk-based capital rules to be consistent with Section 939A and Section 171 of the Dodd-Frank Act. Additionally, in this NPR, the OCC and FDIC propose that the market risk capital rules apply to federal and state savings associations, and the Federal Reserve proposes that the advanced approaches and market risk capital rules apply to top-tier SLHCs domiciled in the United States if stated thresholds for trading activity are met. Generally, the advanced approaches rules would apply to such institutions with $250 billion or more in consolidated assets or $10 billion or more

in foreign exposure, and the market risk capital rule would apply to SLHCs with significant trading activity.

In March 2012, the Federal Reserve disclosed summary results of the 2012 Comprehensive Capital Analysis and Review (CCAR). The CCAR is an exercise to evaluate the capital planning processes and capital adequacy of the largest BHCs. This exercise includes both company-run and supervisory stress tests to evaluate whether firms would have sufficient capital in times of severe economic and financial stress to continue to lend to households and businesses. The Federal Reserve estimated revenue and losses under the stress scenario based on detailed data provided by the firms and verified by supervisors. (See Section 5.2 for a more detailed discussion of the CCAR.)

As a part of the CCAR, the Federal Reserve evaluates institutions' capital plans across a range of criteria, including a stress test that examines whether a firm could make all the capital distributions included in its plan, such as dividends and stock repurchases, while still maintaining capital above the Federal Reserve's standards in a hypothetical supervisory stress scenario. Other considerations for capital distributions include an evaluation of the firms' capital planning processes and plans to meet the new Basel III requirements that are scheduled to be phased in beginning 2013, assuming the final adoption of the Basel III NPR.

Under the Federal Reserve's proposed stress-testing rules (noted in Section 6.1.1), the results of the company-run stress test would be incorporated into the analysis supporting a company's capital plan submission. The supervisory stress test would be conducted by the Federal Reserve during the annual capital plan review process and would be used as a tool to help the Federal Reserve assess the adequacy of the company's capital plan.

In April 2012, the Federal Reserve announced the formation of the Model Validation Council (MVC). The MVC will provide the Federal Reserve with expert and independent advice on its process to rigorously assess the models used in stress tests of banking institutions. The MVC is intended to improve the quality of the Federal Reserve's model assessment program and to strengthen the confidence in the integrity and independence of the program.

In May 2012, the Federal Reserve, OCC, and FDIC issued final supervisory guidance regarding stress-testing practices at banking organizations with total consolidated assets of more than $10 billion. The guidance highlights the importance of stress testing at banking organizations as an ongoing risk-management practice that supports a banking organization's forward-looking assessment of its risks and better equips it to address a range of adverse outcomes. While the guidance does not implement the stress-testing requirements of the Dodd-Frank Act for certain large BHCs and nonbank financial companies designated for supervision by the Federal Reserve (see Section 6.1.1), the guidance is intended to provide entities subject to the Dodd-Frank Act or other stress-testing requirements with principles to follow

when conducting stress tests in accordance with the Dodd-Frank Act or other statutory or regulatory requirements.

6.1.4 Volcker Rule

Section 619 of the Dodd-Frank Act, commonly known as the Volcker Rule, generally prohibits banking entities from engaging in proprietary trading and from investing in or sponsoring hedge funds and private equity funds, subject to certain exceptions.

Section 619 requires implementation in several stages. First, the Council was required to conduct a study and make recommendations on implementing the Volcker Rule. The Council study, which was issued on January 18, 2011, recommended principles for implementing the Volcker Rule and suggested a comprehensive framework for identifying activities prohibited by the rule, including an internal compliance regime, quantitative analysis, reporting, and supervisory review. Second, the Federal Reserve was required to publish a rule to implement the conformance period during which banking entities, and nonbank financial companies supervised by the Federal Reserve, must bring their activities and investments into compliance with Section 619 of the Dodd-Frank Act. The Federal Reserve published a final conformance rule on February 14, 2011.

By statute, following completion of the Council's study, authority to adopt implementing regulations is divided among the Federal Reserve, FDIC, OCC, SEC, and CFTC. The statute requires the rulemaking agencies to consult and coordinate with each other, as appropriate, for the purposes of assuring, to the extent possible, that their rules are comparable and provide for consistent application and implementation. The Chairperson of the Council is responsible for coordination of the regulations. On October 11 and 12, 2011, four of the rulemaking agencies invited the public to comment on proposed rules implementing the Volcker Rule's prohibitions and requirements. The CFTC requested comment on a substantively identical proposal on January 11, 2012. The agencies received over 18,000 comments from the public on the proposal and are working to finalize their rules.

Pending issuance of final rules, the Federal Reserve issued a statement of policy on April 19, 2012, clarifying that entities subject to the Volcker Rule have the full two-year conformance period provided by statute, which would be until July 21, 2014, to conform their activities and investments to the requirements of the Volcker Rule and the final implementing rules. By statute, that deadline may be extended by the Federal Reserve. The Federal Reserve's statement of policy noted that banking entities should engage in good-faith planning efforts to enable them to comply with the Volcker Rule and final implementing rules by no later than the end of the statutory conformance period. The rulemaking agencies also announced that they plan to administer their oversight of banking entities under their respective jurisdictions in accordance with the Federal Reserve's conformance rule and statement of policy.

6.1.5 Resolution Plans and Orderly Liquidation Authority

Resolution Plans

Section 165(d) of the Dodd-Frank Act requires nonbank financial companies designated by the Council for supervision by the Federal Reserve and BHCs with total consolidated assets of $50 billion or more ("covered companies") to prepare and submit to the Federal Reserve, the FDIC, and the Council plans—sometimes referred to as "living wills"—for their rapid and orderly resolution under the U.S. Bankruptcy Code. The Federal Reserve and the FDIC must review each plan and may jointly determine that a resolution plan is not credible or would not facilitate an orderly resolution of the company under the U.S. Bankruptcy Code. Failure to resubmit a credible plan within the timeframe set by the Federal Reserve and FDIC may result in the agencies jointly imposing more stringent capital, leverage, or liquidity requirements, or restrictions on the growth, activities, or operations of the company, or any subsidiary thereof, until the company resubmits a plan that remedies the deficiencies. If the company has failed to resubmit an acceptable plan within two years after the imposition of more stringent requirements or restrictions, the Federal Reserve and FDIC, in consultation with the Council, may jointly require divestiture of certain assets or operations to facilitate an orderly resolution under the U.S. Bankruptcy Code in the event of the company's failure.

In November 2011, the FDIC and the Federal Reserve published a joint final rule that implements the resolution plan requirement. In accordance with the joint final rule, covered companies with $250 billion or more in total nonbank assets (or, in the case of a foreign-based covered company, $250 billion or more in total U.S. nonbank assets) were required to submit their resolution plans to the Federal Reserve and the FDIC by July 1, 2012. Covered companies with at least $100 billion (but less than $250 billion) in total nonbank assets (or at least $100 billion but less than $250 billion in total U.S. nonbank assets, for a foreign-based covered company) must submit their initial plans by July 1, 2013. Covered companies with less than $100 billion in total nonbank assets must submit their initial plans by December 31, 2013.

As a complement to this rulemaking, the FDIC issued a final rule requiring any FDIC-insured depository institution with assets of $50 billion or more to develop, maintain, and periodically submit plans outlining how the FDIC would resolve it through the FDIC's resolution powers under the Federal Deposit Insurance Act. These two rulemakings are designed to work in tandem by covering the full range of business lines, legal entities, and capital structure combinations within a large financial firm. Their overarching objective is to promote stability, but they should also improve contingency planning and risk management at a covered institution and improve the outcomes for an institution's constituencies and stakeholders if the institution fails. Importantly, as covered companies prepare and submit their living wills and those plans are reviewed, the process is expected to result in an ongoing dialogue between the supervisors and the firms that allows for continual improvements as the plans develop.

Orderly Liquidation Authority

Title II of the Dodd-Frank Act establishes a new framework—the orderly liquidation authority (OLA)—to address the potential failure of a BHC or other financial company when the failure of the financial company[1] and its resolution under the bankruptcy code or otherwise applicable federal or state law would have serious adverse effects on financial stability in the United States. Under OLA, the FDIC would act as receiver of the financial company, and would resolve the company subject to OLA.[2]

In July 2011, the FDIC board approved a final rule implementing its Title II authority. The rulemaking, among other things, clarified the claims process and priorities for unsecured creditors as well as the treatment of secured creditors in a Title II resolution. In March 2012, the FDIC published a proposed rule setting forth the conditions and requirements that would govern the FDIC's exercise of its authority under the OLA to enforce certain contracts of subsidiaries or affiliates of a financial company notwithstanding contract clauses that purport to terminate, accelerate, or provide for other remedies based on the insolvency, financial condition, or receivership of the financial company. The comment period on the proposed rule closed on May 29, 2012. It is anticipated that a final rule will be issued in the near future.

Under Title II, the FDIC has the authority to borrow funds from the Treasury and to incur other obligations in connection with the orderly liquidation of a financial company, subject to a maximum obligation limitation (MOL). In June 2012, the FDIC and Treasury published, after notice and comment, a joint final rule governing the calculation of the MOL. Also, in April 2012, the FDIC adopted, after notice and comment, a final rule that sets forth the conditions under which a mutual insurance holding company would be treated as an insurance company for purposes of Title II. The FDIC also intends to propose additional rules to implement the OLA, including (1) rules governing the minimum right of recovery and (2) joint rules with the SEC, after consultation with the Securities Investor Protection Corporation, governing the orderly resolution of certain broker-dealers (BD).

Furthermore, Section 210 of the Dodd-Frank Act requires the FDIC "to coordinate, to the maximum extent possible" with appropriate foreign regulatory authorities in the event of a resolution of a covered company with cross-border operations. The FDIC has been working diligently on both multilateral and bilateral bases with foreign counterparts in supervision and resolution to address these crucial cross-border issues. Although U.S. firms have operations in many countries, those operations tend to be concentrated in a relatively small number of key jurisdictions, particularly, the UK. The FDIC and UK authorities have made substantial progress in identifying and overcoming impediments to resolution. To facilitate bilateral discussions and cooperation, the FDIC is negotiating memoranda of understanding with certain foreign counterparts that will provide a formal basis for information sharing and cooperation relating to resolution planning and implementation under the legal framework of the Dodd-Frank Act.

6.1.6 Removal of References to Credit Ratings

Section 939 of the Dodd-Frank Act removes references to credit ratings in certain statutes, while Section 939A requires each federal agency to review its regulations that require the use of an assessment of creditworthiness of a security or money market instrument and any references to or requirements in such regulations regarding credit ratings. Each agency must modify its regulations as identified by the review to remove references to or requirements of reliance on credit ratings and to substitute appropriate standards of creditworthiness.

As required by Section 939A, after enactment of the Dodd-Frank Act, federal agencies reported to Congress on the review of their regulations that use credit ratings and a description of any of the regulations. Numerous federal agencies have proposed or finalized rules that would modify their regulations to comply with the Section 939A requirements. For example, the federal banking regulators, in June 2012, finalized revisions to the market risk capital rules that implement alternatives to credit ratings for debt and securitization positions. Concurrently, the federal regulators invited public comment on three proposed rules to revise and replace the agencies' current capital rules, including implementing the changes required by Section 939A. The SEC adopted rule amendments removing credit ratings as conditions for companies seeking to use short-form registration when registering non-convertible securities for public sale and proposed several other rules that would remove credit rating agency references from many of its investment company rules and its rules applicable to BD 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 OCC issued a final rule to remove references to credit ratings in the OCC's rules for investments in securities, securities offerings and foreign bank capital equivalency deposit regulations. In December 2011, the FDIC proposed revisions to part 362 of the FDIC's regulations that would prohibit an insured savings association from acquiring and retaining any corporate debt security unless it determines, prior to acquiring such security and periodically thereafter, that the issuer has adequate capacity to meet all financial commitments under the security for the projected life of the investment. The FDIC's December 2011 NPR is consistent with the OCC's final rule noted above regarding permissible investments.

6.1.7 Insurance

Section 111 of the Dodd-Frank Act, which established the Council, also provides that one of the ten voting members, in addition to the nine named heads of federal agencies, shall be "an independent member appointed by the President, by and with the advice and consent of the Senate, having insurance expertise." On September 28, 2011, the President's appointee, referred to as the "independent member," was sworn in and seated as a member of the Council for a six-year term. Since that time, the independent member has established an office and has actively engaged in the work of the Council and its committees with the assistance of a staff of two employees with insurance expertise. The independent member has also actively consulted with state insurance regulators and Federal Reserve System staff responsible for the development and implementation of the supervisory framework for insurance companies.

The Federal Insurance Office (FIO) within the Treasury was established by the Dodd-Frank Act with the authority, among others, 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. FIO is authorized to coordinate federal efforts and develop federal policy on prudential aspects of international insurance matters, including representing the United States, as appropriate, in the International Association of Insurance Supervisors (IAIS). In exercising its authorities, FIO consults with federal agencies, insurance regulators, and interested parties.

This past year, FIO joined the IAIS and its executive and other committees, all of which also include U.S. state insurance regulators as members. Through the IAIS, insurance regulators, supported by the National Association of Insurance Commissioners (NAIC), and FIO work with the insurance supervisors of other countries on international regulatory initiatives such as a common framework for regulating internationally active insurance groups. Through the IAIS, FIO and U.S. state insurance regulators are also working collaboratively with other insurance supervisors to develop a sound approach to the identification and oversight of global systemically important insurers.

In addition to its existing responsibility for supervision of a BHC that is a major life insurance company, on July 21, 2011, the Federal Reserve assumed responsibility for over 25 SLHCs that engage in significant volumes of life, property and casualty, or title insurance underwriting. The unique aspects of the insurance industry are addressed in various regulations that have been published for the BHC and SLHC populations. The Federal Reserve developed and implemented a specialized supervisory approach and customized supervisory guidance that reflects the risks and characteristics of the industry. This approach includes communication and coordination with state insurance regulators.

Insurance regulators, through the NAIC, continue work on updating the Insurance Financial Solvency Framework. Two of the more important initiatives relate to the continued work of the Solvency Modernization Initiative, which led to the adoption of the Own Risk and Solvency Assessment (ORSA) Guidance Manual in March 2012 and the revised Credit for Reinsurance Model Law in late 2011. Later this year, state regulators are expected to finalize the ORSA Model Law to establish the ORSA filing requirement and the Valuation Manual, which will allow states to consider adoption of the Standard Valuation Law to implement principles-based reserving.

6.2 Financial Infrastructure, Markets, and Oversight

6.2.1 Over-the-Counter Derivatives Reform

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, among other things, exchange trading and centralized clearing of swaps and security-based swaps, as well as greater transparency in the derivatives markets and enhanced monitoring of the entities that use these markets.

The CFTC and SEC have proposed and begun to finalize numerous rules pursuant to the public notice and comment process and have engaged in extensive public outreach and interagency coordination, including 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.

The SEC and CFTC have jointly adopted rules further defining the terms "swap," "security-based swap," "security-based swap agreement," and have also adopted final joint rules defining the terms "swap dealer," "security-based swap dealer," "major swap participant," and "major security-based swap participant."

In addition, the CFTC and the federal banking agencies issued proposed rules on capital and margin requirements for entities within their respective jurisdictions (for the CFTC, certain swap dealers and major swap participants; for the federal banking agencies, certain securities-based swap dealers and major swap participants as well). 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 CFTC has adopted several final rules, including reporting requirements to swap data repositories for swap dealers, major swap participants, and swap counterparties; rules that establish the process by which the CFTC will review swaps to determine whether the swaps are required to be cleared; and business conduct standards and other regulatory requirements for swap dealers and major swap participants.

The SEC has proposed rules to implement corresponding requirements for security-based swaps, and has adopted final rules that establish the process by which the SEC will review security-based swaps to determine whether the security-based swaps are required to be cleared.

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. In June 2012, the SEC issued a policy statement describing the order in which it expects the rules regulating the security-based swap market to take effect. This ordering is intended to give security-based swap market participants adequate, but not excessive, time to come into compliance with the new rules applicable to them.

On an international level, U.S. regulators are working as part of a group composed of representatives of the BCBS, the Committee on the Global Financial System, the Committee on Payment and Settlement Systems, and the International Organization of Securities Commissions to develop international

standards for margin on non-centrally cleared derivatives. This group took an important first step when it issued a consultative report in July 2012.

6.2.2 Private 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 designed to provide the SEC with oversight authority over previously unregistered investment advisers to certain types of private funds, including hedge funds and private equity funds, and the authority to require recordkeeping and reporting by advisers to venture capital funds.

Sections 404 and 406 of the Dodd-Frank Act authorize the SEC to collect data from investment advisers about their private funds to enable the Council to assess systemic risk and require a joint rulemaking of the SEC and CFTC for investment advisers that are registered with both the SEC and CFTC. The agencies implemented this provision in October 2011 by adopting a rule that requires certain advisers to hedge funds, private equity funds, and liquidity funds to report non-public data regarding their operations and the risk profiles of the private funds they manage. Under the rule, SEC-registered investment advisers with at least $150 million in private fund assets under management must periodically file a new reporting form (Form PF). Private fund advisers that are also registered with the CFTC as commodity pool operators or commodity trading advisers may satisfy systemic risk reporting requirements of the CFTC by filing Form PF with the SEC. The first filings of Form PF, covering private fund advisers with $5 billion or more in private fund assets, are due in July 2012 for liquidity fund advisers and in August 2012 for hedge fund advisers. Smaller liquidity fund and hedge fund advisers, as well as private equity fund advisers, will be required to begin filing Form PF for the period ending December 31, 2012.

In addition, in June 2011, the SEC adopted a rule that requires advisers to certain types of private funds, including hedge funds and private equity funds, to register with the SEC. To enhance the SEC's ability to oversee these advisers and enable the public to better assess the activities of private funds, the SEC requires private fund advisers to provide basic public information on Form ADV about the funds they manage, including information about the amount of assets held by the fund and identification of fund service providers (e.g., auditors, prime brokers, custodians, administrators, and marketers). In addition, the SEC requires all advisers to provide further information on Form ADV about an adviser's clients, employees, and advisory activities. Investment advisers that had previously relied on the Investment Advisers Act exemption for private advisers, which was eliminated by the Dodd-Frank Act, were required to register with the SEC by March 2012. Registered investment advisers are required to adopt and implement policies and procedures to prevent violation of the Advisers Act and SEC rules.

6.2.3 Office of Financial Research

The purposes of the Office of Financial Research (OFR) are to support the Council in fulfilling the Council's purposes and duties and to support the Council's member agencies. The OFR serves as a data and research resource for

the Council and its member agencies, and it is working with those agencies to mitigate reporting burdens and increase market transparency. In this context, the OFR serves as a shared resource for Council members and their agencies and staffs.

The OFR provides data and analysis to support that work, either as a participant in Council activities or in response to requests from Council members or their agencies or staffs. The OFR will have the capacity to provide in-depth, long-term research, as well as rapid analyses of significant financial events to inform the Council's policy discussions. The OFR also has a responsibility to evaluate and report on stress tests and other stability-related assessments of financial entities overseen by member agencies, provide advice to member agencies on the impact of their policies as they relate to financial stability, investigate disruptions and failures in the financial markets, and provide its analysis to the Council, Congress, and the public.

The OFR is working with Council member agencies to support an international initiative to establish a unique, global standard for identifying parties to financial transactions. This Legal Entity Identifier (LEI) will allow for a better understanding by both regulators and market participants of true exposures and counterparty risks across the system. In July, the OFR publishes its first annual report to Congress on its research and data-related work to assess risks to financial stability.

The Dodd-Frank Act provides that the OFR would be headed by a Director appointed by the President and confirmed by the U.S. Senate. In December 2011, President Obama nominated Richard B. Berner to serve as the first Director of the OFR. That nomination is pending before the Senate.

6.2.4 Market Structure

Over the past several years, the SEC has been considering a range of issues relating to developments in equity market structure. As a part of this process, the SEC issued a concept release in January 2010 to seek public comment on a wide range of market structure issues, including high-frequency trading, order routing, market data linkages, and undisplayed, or "dark," liquidity. The SEC continues to consider the issues raised in the 2010 concept release and whether additional regulatory actions are needed in this area.

Recently, the SEC has taken specific actions to address market structure issues. For example, in July 2012, the SEC adopted a rule that would require SROs to develop a plan to create a consolidated audit trail. Such a consolidated audit trail would improve the timeliness and breadth of the information available to regulators for surveillance, investigations, and analysis of equity market activity. In June 2012, the SEC approved two proposals submitted by the national securities exchanges and FINRA that are designed to address extraordinary volatility in individual securities in the broader U.S. stock market. One initiative establishes a "limit-up" and "limit-down" mechanism that prevents trades in individual exchange-listed stocks from occurring outside of a specified price band. The second initiative updates existing market-wide circuit breakers that,

when triggered, halt trading in all exchange-listed securities throughout the U.S. markets. The changes lower the percentage-decline threshold for triggering a market-wide trading halt and shorten the amount of time that trading is halted. The exchanges and FINRA will implement these changes by February 4, 2013; the SEC approved both proposals for a one-year pilot period, during which the exchanges, FINRA, and the SEC will assess their operation and consider whether any modifications are appropriate.

Further, in July 2011, the SEC adopted a new large-trader reporting rule that is designed to provide the SEC with a valuable source of useful data to support its investigative and enforcement activities, to facilitate the SEC's ability to assess the impact of large-trader activity on the securities markets, to reconstruct trading activity following periods of unusual market volatility, and to analyze significant market events for regulatory purposes. Additionally, in June 2011, the SEC adopted Rule 15c3-5, which, among other things, requires BDs to maintain a system of controls and supervisory procedures reasonably designed to limit the financial exposures arising from customers that access the markets directly through the BD.

Recent CFTC actions have addressed risk controls by requiring futures exchanges to establish risk controls that prevent and reduce the potential for price distortions and market disruptions, including pauses or halts on trading when necessary. The CFTC has also required clearing member firms to conduct automated, pre-trade screening of orders and required futures exchanges to have automated, pre-trade systems that facilitate firms' management of financial risk. The CFTC also adopted measures that require swap dealers and major swap participants to implement policies and procedures for testing and supervising trading programs and requires "straight-through processing" by futures commission merchants, swap dealers, and major swap participants of trades submitted for clearing. Each of these measures responds to the increased speed and automation of CFTC-regulated financial markets by requiring a parallel increase in the speed and automation of pre-trade risk controls, post-trade processing, and other steps designed to reduce risk and increase trade certainty.

6.2.5 Financial Market Utilities

Financial market utilities (FMUs) manage or operate multilateral systems for the purpose of transferring, clearing, or settling financial transactions.

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 functioning of the FMU 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. The Council proposed the designation of a set of FMUs as systemically important at its May 22, 2012, meeting. As discussed further in Section 6.4.1, the Council designated eight FMUs as systemically important at its July 18, 2012, 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. The CFTC published its final rule with respect to all FMUs that are derivatives clearing organizations in November 2011. The Federal Reserve's, CFTC's, and SEC's final rules on risk management standards that will apply to designated FMUs are expected in 2012.

6.2.6 Securitization

Risk Retention

Section 941 of the Dodd-Frank Act added a new Section 15G to the Securities Exchange Act of 1934, requiring a securitizer to retain at least 5 percent of the credit risk for loans or other assets that a securitizer, through the issuance of an asset-backed security (ABS), transfers, sells, or conveys to a third party. On April 29, 2011, the OCC, Federal Reserve, FDIC, SEC, FHFA, and the Department of Housing and Urban Development (HUD) jointly published proposed rules to implement this risk-retention requirement. The rulewriting agencies are carefully assessing the provisions of the proposed rule in light of the public comments received and are working to develop a final rule. The Chairperson of the Council is coordinating the rulemaking.

As required by Section 15G, the proposed rules would, in general, require securitizers of ABS to retain at least 5 percent of the credit risk of the assets underlying the securitization. The credit risk retained generally could not be directly or indirectly transferred or hedged. The proposed rule includes a menu of risk-retention options designed to meet the statutory risk-retention requirement in a way that takes into account the wide variety of established securitization structures and market practices. Section 15G specifically provides that a securitizer is not required to retain the 5 percent credit risk if all of the loans that collateralize the ABS are qualified residential mortgages (QRM), as defined by the rulewriting agencies. The definition of a QRM in the proposed rule takes into account underwriting standards and loan features that historically indicate a lower risk of default, as required by the statute. These include loan documentation and verification of the borrower's ability to repay the loan, the loan-to-value ratio of the loan, and the debt-to-income ratio of the borrower. In addition, if certain other loan underwriting standards are met, the proposed rule would exempt ABS collateralized exclusively by commercial loans, commercial mortgages, or automobile loans from the 5 percent risk-retention requirement. In crafting the proposed rule, the agencies sought to ensure that the amount of credit risk retained is meaningful, while reducing the potential for the proposed rules to negatively affect the availability and cost of credit to consumers and businesses.

SEC Rules Related to ABS

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 that require securitizers to disclose, in tabular form, fulfilled and unfulfilled repurchase requests made in connection with outstanding

ABS. Repurchases often result from a loan that does not comply with the representations and warranties made in an underlying transaction pooling agreement. The rules also require that nationally recognized statistical rating organizations include information regarding the representations, warranties, and enforcement mechanism available to investors in an ABS offering in any report accompanying a credit rating issued in connection with such offering. Pursuant to Section 945, the SEC also adopted final rules in January 2011 requiring an issuer of ABS registered under the Securities Act of 1933 to perform a review of the assets underlying the ABS and to disclose information about the nature of the review. Under the rules, the issuer must also disclose information about (1) how the loans in the pool differ from the loan underwriting criteria disclosed in the prospectus, (2) loans that did not meet the disclosed underwriting criteria but were included in the pool, and (3) the entity that made the determination that loans be included in the pool even though they did not meet the disclosed underwriting standards.

Section 942(b) of the Dodd-Frank Act requires the SEC to adopt regulations to require issuers of ABS, at a minimum, to disclose asset-level or loan-level data regarding the assets backing the ABS, if such data are necessary for investors independently to perform due diligence. In April 2010, the SEC had proposed significant revisions to rules regarding the offering process, disclosure, and reporting for asset-backed securities, including revisions to Regulation AB. As part of its April 2010 proposal, to augment existing pool-level disclosure requirements, the SEC had proposed to require that standardized asset-level data points regarding each asset in the underlying pool be provided at the time of securitization and on an ongoing basis. In July 2011, the SEC issued a release requesting additional comment on whether the April 2010 proposals appropriately implement Section 942(b) of the Dodd-Frank Act.

In September 2011, the SEC proposed rules under Section 621 of the Dodd-Frank Act that would prohibit securitization participants of an ABS for a designated time period from engaging in certain transactions that would involve or result in a material conflict of interest.

6.2.7 Audit Standards

In the last year, the Public Company Accounting Oversight Board (PCAOB) has engaged in several projects related to auditing and professional practice standards. The PCAOB proposed a new auditing standard, Related Parties, and amendments to existing standards regarding significant unusual transactions, intended to enhance audit procedures in areas that have, at times, been used to engage in fraudulent financial reporting; proposed a new standard and amendments intended to enhance the relevance and quality of the communications between an auditor and a company's audit committee; proposed auditing and attestation standards that would apply to the audits of SEC-registered BDs and to the supplemental information accompanying audited financial statements; and proposed amendments to improve the transparency of public company audits by requiring the disclosure of the audit engagement partner's name in the audit report and the disclosure of other independent public accounting firms and other persons that took part in the audit.

In addition, on June 21, 2011, the PCAOB issued a concept release seeking public comment on the potential direction of a standard-setting project on the content and form of auditors' reports on financial statements.

Finally, on August 16, 2011, the PCAOB issued a concept release seeking public comment on ways that auditor independence, objectivity, and professional skepticism can be enhanced, including through mandatory rotation of audit firms. Mandatory audit firm rotation would limit the number of consecutive years for which a registered public accounting firm could serve as the auditor of a public company. The PCAOB received over 600 public comments on its release and is continuing to evaluate these ideas.

6.2.8 Accounting

The Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) are continuing their work to finalize converged standards in several major areas, including revenue recognition, lease accounting, financial instruments, and insurance contracts. In their revenue-recognition project, the FASB and IASB are working to clarify and align the principles for recognizing revenue. The FASB and IASB are considering comments from constituents on their joint 2011 proposal, and a final joint standard on revenue recognition is expected by early 2013. In their lease-accounting project, the FASB and IASB are working to provide greater transparency to lease arrangements by requiring balance sheet recognition of the rights and obligations associated with leases. The FASB and IASB are considering comments on their 2010 proposal, and a new joint proposal for public comment is expected in the second half of 2012. In the area of financial instruments, the FASB and IASB are seeking to more closely align key aspects of their classification and measurement models and to develop a new approach to impairment for financial instruments. The FASB and IASB are expected to release a new proposal on impairment for financial instruments in the second half of 2012. For insurance contracts, the IASB currently does not have a comprehensive insurance model in IFRS. The FASB is evaluating this issue, including joint discussions with the IASB regarding whether to propose changes to the existing U.S. insurance accounting model to provide users of financial statements with more useful information. Further documents or proposals from FASB and IASB are expected in the second half of 2012.

6.3 Consumer and Investor Protection

6.3.1 Consumer Protection

On January 4, 2012, President Obama appointed former Ohio Attorney General Richard Cordray as the Director of the CFPB. The CFPB is an independent bureau within the Federal Reserve System. It has rulemaking authority under specifically listed statutes, as well as specified supervisory and enforcement authority for very large depository institutions and non-depository (nonbank) entities and other duties relating to consumer financial products and services. The CFPB is the primary federal regulator exclusively focused on, and accountable to Congress and the public for, consumer financial protection. The CFPB has launched its supervision program for very large depository institutions (in coordination with prudential regulators) and for nonbanks; established its

consumer response function; assumed rulemaking responsibility for federal consumer financial laws transferred to the CFPB on July 21, 2011; and issued a variety of rules and reports required under the Dodd-Frank Act. In addition, the CFPB continues to work to ensure that consumers have the information they need to understand the costs and risks of consumer financial products and services, so they can compare products and choose the ones that are best for them. Moreover, the CFPB is taking steps to clarify and streamline regulations and guidance to reduce unnecessary burdens on providers of consumer financial products and services.

One of the CFPB's first rulemaking initiatives is consolidation of mortgage loan disclosure forms under the Truth in Lending Act (TILA) and the Real Estate Settlement Procedures Act (RESPA) to make the information more useful to consumers and to reduce burdens on lenders. The Dodd-Frank Act consolidates rulemaking authority for the two statutes in the CFPB. The CFPB proposed regulations and model disclosures in July 2012. As part of its "Know Before You Owe" initiative, the CFPB has been testing prototype disclosure forms that contain information required to be disclosed to consumers who apply for a loan to purchase a house or refinance an existing mortgage loan.

In addition, the CFPB has been testing a prototype for a monthly mortgage statement designed to make it easier for borrowers to understand costs and fees associated with mortgage loans. The Dodd-Frank Act amends the TILA and requires creditors, assignees, or servicers to send the borrower a periodic statement for each billing cycle; the statement must include information about the mortgage's principal loan amount, current interest rate, date on which the interest rate may next reset, and a description of any late payment fees, among other items. The CFPB plans, in the summer of 2012, to propose a rule, including a proposed form, to implement this requirement and several other servicing-related requirements under the Dodd-Frank Act.

The Dodd-Frank Act also amends the Electronic Fund Transfer Act to provide protections to consumers who transfer funds to recipients located in another country (remittance transfers), and the CFPB adopted a rule implementing these consumer protections. In general, the rule requires remittance transfer providers to disclose to a consumer the exchange rate, fees, and amount to be received by the recipient when the consumer sends a remittance transfer. The CFPB also requested public comment on whether the rule should include a safe harbor to exempt community banks, credit unions, and other companies that process less than a certain number of remittance transfers per year from the new requirements. The final rule, with any adjustments, will go into effect on February 7, 2013.

The CFPB has supervision authority over certain nonbank entities, including mortgage companies, private education lenders, payday lenders, and "larger participants" of a market for other consumer financial products or services. On February 17, 2012, the CFPB published its initial proposed rule to define larger participants in the consumer reporting and debt collection markets. The CFPB indicated that it will issue additional rules to define criteria for larger participants

in other consumer financial markets, selecting the appropriate criteria and thresholds for each of those markets.

The Federal Reserve, FDIC, OCC, and NCUA have worked closely with the CFPB to help ensure a smooth transition of the CFPB's examination and rulemaking authorities. These activities have included the transfer of certain staff to the CFPB and the development of information and examination coordination memoranda of understanding. For its part, the CFPB consults actively with the Federal Reserve, FDIC, OCC, and NCUA in the rulemaking process to help promote regulatory effectiveness and to meet the goals and requirements of the Dodd-Frank Act regarding consultation.

6.3.2 Mortgage Transactions and Housing

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 TILA and the RESPA. Prior to July 21, 2011, the Federal Reserve was responsible for regulations implementing the TILA requirements and HUD was responsible for RESPA, but those rulemaking authorities transferred to the CFPB on that date. In addition to the CFPB's efforts to develop improved mortgage servicing disclosure standards (see previous text), the prudential regulators are working to develop regulations under safety and soundness authority that address the servicing of performing and nonperforming mortgage loans, which would supplement the CFPB's TILA and RESPA rulemaking. Certain additional rules concerning appraisals must be promulgated on an interagency basis. The CFPB expects to issue proposals to implement a number of Title XIV requirements in the summer of 2012 and to finalize several rules by January 2013, including the rules described in the following text.

Under new standards regarding residential mortgages, a lender is required to make a reasonable, good faith determination of an applicant's ability to repay before issuing a closed-end mortgage loan. In general, the "ability to repay" standard can be met if the loan is a "qualified mortgage," as defined under the Dodd-Frank Act and by regulation. A lender receives certain protections from liability if a loan is a "qualified mortgage." The CFPB is responsible for finalizing a proposed rule that was issued by the Federal Reserve in May 2011. The Dodd-Frank Act also requires escrow accounts to be established for certain mortgage loans and mandates certain new disclosures regarding escrow accounts. The Federal Reserve issued a proposed rule to implement these requirements in March 2011, and the CFPB is responsible for finalizing that rule. In addition, the Dodd-Frank Act expands the range of mortgage loans that are subject to the Home Ownership and Equity Protection Act and imposes new requirements on high-cost mortgages. These include mandatory counseling and other protections. For mortgage servicers, there will be requirements concerning provision of monthly statements, disclosures for hybrid adjustable rate mortgages, force-placed insurance, prompt crediting of payments, pay-off amounts, and error resolution. There also will be new requirements concerning compensation and qualification of mortgage loan originators, such as brokers and loan officers, and for certain purposes the companies that hire them. The Dodd-Frank Act also amends the

Equal Credit Opportunity Act to require mortgage lenders to provide certain disclosures and copies of appraisal documents to consumers.

Subtitle F of Title XIV of the Dodd-Frank Act relates to appraisal reform, and certain additional rules concerning appraisals must be promulgated on an interagency basis. For higher-risk mortgages, the Dodd-Frank Act generally requires written appraisals based on a physical inspection of the property and, in some cases, second appraisals. The FDIC, Federal Reserve, OCC, NCUA, FHFA, and CFPB have authority under the Dodd-Frank Act to issue joint regulations and guidance on appraiser independence and are required to issue regulations on the appraisal requirements for higher-risk mortgages, appraisal management companies, and automated valuation models.

6.3.3 Investor Protection

The Dodd-Frank Act includes various provisions to strengthen investor protection. These provisions include regulation of the over-the-counter derivatives markets and governance and compensation reform. Under Section 926 of the Dodd-Frank Act, the SEC is required to adopt rules that disqualify securities offerings involving certain felons and other "bad actors" from relying on the safe harbor from Securities Act registration provided by Rule 506 of Regulation D. The SEC proposed rules to implement the requirements of this provision in May 2011. In addition, the SEC adopted rule amendments in December 2011 implementing Section 413(a) of the Dodd-Frank Act, which requires the value of an individual's primary residence to be excluded when determining if that individual's net worth exceeds the $1 million threshold required for "accredited investor" status.

The investing public should benefit from increased oversight of investment advisers. Approximately 2,500 investment advisers with assets under management between $25 million and $100 million are transitioning from oversight by the SEC to oversight by state securities regulators. This transition, mandated by Section 410 of the Dodd-Frank Act and implemented by June 2011 rulemakings by the SEC, is expected to result in more frequent examinations of the approximately 17,000 smaller, local advisers, while also allowing the SEC to focus its resources on the approximately 10,000 larger, national advisers.

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. For example, the Dodd-Frank Act established a whistleblower program that requires the SEC to pay an award to eligible whistleblowers that voluntarily provide the SEC with original information about a violation of the federal securities laws that leads to the successful enforcement of certain judicial or administrative actions. In May 2011, the SEC adopted rules to implement this provision. Since the rules went into effect in August 2011, the SEC has received hundreds of tips through the program, and the quality of the information received has, in many instances, been particularly helpful to the SEC's investigative staff.

6.3.4 Governance and Compensation

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, and SEC to jointly prescribe rules or guidelines that require certain covered financial institutions to disclose to their appropriate federal regulator the structure of the incentive-based compensation arrangements offered by such covered financial institution sufficient to determine whether the compensation structure (1) provides an executive officer, employee, director, or principal shareholder of the covered financial institution with excessive compensation, fees, or benefits; or (2) could lead to material financial loss to the covered financial institution. Further, Section 956 requires the appropriate federal regulators jointly to prescribe regulations or guidelines that prohibit any types of incentive-based payment arrangement, or any feature of such arrangement, that the regulators determine encourages inappropriate risks by providing an executive officer, employee, director, or principal shareholder of the covered financial institution with excessive compensation, fees, or benefits, or that could lead to material financial loss to the covered firm. The proposed rule would impose additional requirements on the payment of incentive compensation to executive officers of certain larger covered financial institutions.

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, employees, directors, and principal shareholders) with excessive compensation. Finally, the proposed rule would require each covered financial institution to adopt specific policies and procedures approved by its board to help ensure and monitor compliance with the rule.

Section 952 of the Dodd-Frank Act requires the SEC to, by rule, direct the national securities exchanges and national securities associations to prohibit the listing of any equity security of an issuer that does not comply with new compensation committee and compensation adviser requirements. In June 2012, the SEC adopted rules to implement Section 952 that require, among other things, that the exchanges establish listing standards that require each member of a listed issuer's compensation committee to be a member of the board of directors and to be "independent." The SEC also is required by the Dodd-Frank Act to adopt several additional rules related to corporate governance and executive compensation, including rules mandating new listing standards relating to specified "clawback" policies, and new disclosure requirements about executive compensation and company performance, executive to median employee pay ratios, and employee and director hedging. These provisions of the Dodd-Frank Act do not contain rulemaking deadlines,

but SEC staff is working to develop recommendations for the SEC concerning the implementation of these provisions.

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 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. The Council issued an advance notice of proposed rulemaking (ANPR) in October 2010 and an 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 analytic framework for making determinations that would provide a consistent approach and incorporate both quantitative and qualitative judgments. In response to comments the Council received on the NPR, the Council sought public comment on a second NPR and proposed interpretive guidance in October 2011 to provide (1) additional details regarding the framework that the Council intends to use to assess whether the material financial distress or failure, or ongoing activities, of a nonbank financial company could pose a threat to U.S. financial stability; and (2) further opportunity for public comment on the Council's proposed approach to the determination process. In April 2012, the Council adopted a final rule and interpretive guidance.

The Council's interpretive guidance includes an analytic framework that organizes the 10 statutory considerations into six broad categories that reflect a company's role in the financial system and its potential to experience material financial distress. In addition, the interpretive guidance describes the three-stage process that the Council intends to use in evaluating companies in non-emergency situations, defines key terms related to the Council's determination authority, and sets forth uniform quantitative thresholds that the Council intends to use to identify companies for further evaluation. While the Council's assessments of companies will be based on a fact-specific evaluation of the statutory considerations, the rule and interpretive guidance describe the characteristics of companies the Council likely will evaluate for potential determination and the factors the Council intends to use when analyzing companies.

In non-emergency situations, before a Council vote on any 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. Any final determination will be subject to judicial review, and the Council must submit a report to Congress on, among other things, all determinations made under Section 113 of the Dodd-Frank Act and the basis for such determinations.

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

The Dodd-Frank Act authorizes the Council to designate an FMU as "systemically important" if the Council determines that the failure of or a disruption to the functioning of the FMU 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.

Designated FMUs will become subject to the heightened prudential and supervisory provisions of Title VIII, which promote robust risk management and safety and soundness, including conducting their operations in compliance with applicable risk-management standards; providing advance notice and review of changes to their rules, procedures, and operations that could materially affect the nature or level of their risks; and being subject to relevant examination and enforcement provisions. Title VIII also requires the supervisory agencies to consult with each other when they are prescribing their respective risk-management standards, jointly develop risk-management supervisory programs, and consult and coordinate in planning and conducting examinations. To further strengthen settlement processes, the Federal Reserve Board may authorize a Federal Reserve Bank to provide accounts and settlement services to designated FMUs. Additionally, under unusual or exigent circumstances, designated FMUs could potentially gain access to the Federal Reserve's discount window.

Following the publication of its final rule outlining the criteria, processes, and procedures for the designation of FMUs on July 27, 2011, the Council proposed the designation of an initial set of FMUs on May 22, 2012. At its July 18, 2012, meeting, the Council voted unanimously to designate eight FMUs as systemically important under Title VIII of the Dodd-Frank Act.

The FMUs that the Council designated perform a variety of functions in the market, including the clearance and settlement of cash, securities, and derivatives transactions; many of them are central counterparties and are responsible for clearing a large majority of trades in their respective markets. The Council believes that the completion of the FMU designations process for this initial set

of FMUs is a major milestone in the implementation of the Dodd-Frank Act and that the designation of these entities will instill confidence in their respective markets. The basis for the Council's designation determination for each of these systemically important FMUs is described in Appendix A.

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, among other things.

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 member agency staff in supervisory, surveillance, examination, and policy roles. The SRC serves as a forum for member agency staff to identify and analyze potential risks that may extend beyond the jurisdiction of any one agency.

6.4.3 Reports Required Under the Dodd-Frank Act

Prompt Corrective Action

In December 2011, the Council released a report to Congress on prompt corrective action (PCA). Section 202(g)(4) of the Dodd-Frank Act required the Council to issue a report on actions taken in response to the Government Accountability Office (GAO) study on PCA required by Section 202(g)(1) of the Dodd-Frank Act. The Council's report discusses the existing PCA framework and the findings and recommendations of the GAO study. The Council's report also highlights some lessons learned from the financial crisis and outlines actions taken that could affect PCA, as well as additional steps to modify the PCA framework that could be considered.

Report on Actions Taken in Response to the GAO's Report on the NCUA

In June 2012, the Council released a report to Congress on actions taken in response to a GAO report on the NCUA's supervision of corporate credit unions and implementation of PCA, as required by the National Credit Union Authority Clarification Act. The report discusses the findings and recommendations of the GAO study and outlines NCUA activities that relate to the GAO's recommendations.

Contingent Capital

Section 115(c) of the Dodd-Frank Act requires the Council to study the feasibility, benefits, costs, and structure of a contingent capital requirement for nonbank financial companies supervised by the Federal Reserve and large, interconnected bank holding companies. In July 2012, the Council submitted a report to Congress regarding the study, as required by Section 115(c). The Council's report

concludes that contingent capital instruments should continue to be an area for private sector innovation, and encourages the Federal Reserve and other financial regulators to continue to study the advantages and disadvantages of including contingent capital and bail-in instruments in their regulatory capital frameworks.

6.4.4 Rulemaking Coordination

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

To facilitate the joint rulemaking on credit risk retention for asset-backed securities, as described previously, certain member agencies participated in an interagency working group to develop the NPR for public comment. The Federal Reserve, FDIC, SEC, OCC, HUD, 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, as described in Section 6.1.4. The Chairperson has played an active role in coordinating the agencies' work to develop regulations that are comparable and provide for consistent application, to the extent possible. The Federal Reserve, FDIC, OCC, and SEC sought public comment on a proposed rule in October 2011, and the CFTC requested comment on a substantively identical NPR in January 2012. The comment period closed February 13, 2012, for the proposed rules issued by the Federal Reserve, FDIC, OCC, and SEC, and closed on April 16, 2012, for the CFTC's proposed rule. The Chairperson of the Council continues to coordinate the development of a final rule.

6.4.5 Operations of the Council

The Dodd-Frank Act requires the Council to convene no less than quarterly. In the last year, the Council met 12 times.[3] The meetings bring Council members 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. Consistent with the Council's transparency policy, the Council opens its meetings to the public whenever possible. The Council held a public session at three of its meetings in the last year.

Approximately every two weeks, the Council's Deputies Committee, which is composed of senior representatives of Council members, has convened to discuss the Council's agenda and to direct the work of the SRC and the five other functional committees. The other functional committees are organized around the Council's ongoing statutory responsibilities: (1) identifying nonbank financial companies and financial market utilities for designation; (2) making recommendations to primary financial regulatory agencies regarding heightened prudential standards for financial firms; (3) consulting with the FDIC on orderly liquidation authority and reviewing the resolution plan requirements for

designated nonbank financial firms and the largest BHCs; and (4) collecting data and improving data-reporting standards.

In the last year, the Council adopted regulations implementing its Freedom of Information Act obligations,[4] adopted hearing procedures for nonbank financial companies and FMUs subject to proposed designations, and passed its second budget. The Council also complied with its transparency policy by conducting its business in an open and transparent manner whenever possible.[5]

Financial Research Fund Assessments

Section 155 of the Dodd-Frank Act requires the Treasury, with the approval of the Council, to establish assessments to fund the OFR's budget, which includes the expenses of the Council and the FDIC's implementation expenses associated with OLA. To implement this provision, on May 21, 2012, the Treasury issued a final rule that establishes an assessment schedule for semiannual collections from bank holding companies with total consolidated assets of $50 billion or greater and an interim final rule that applies to nonbank financial companies supervised by the Federal Reserve. The first payments under the rule will be made on July 20, 2012.

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.

7 Potential Emerging Threats

7.1 Framework: Threats as a Combination of Shocks and Vulnerabilities

Episodes of financial disruption typically arise when adverse developments unforeseen by most market participants, commonly referred to as shocks, interact with financial system vulnerabilities. A shock that potentially threatens stability is typically one that induces substantial losses on a class of assets over a short period of time. Recent history provides examples of shocks that created challenges for financial stability, such as the bursting asset price bubbles in stock markets (2000) and housing markets (2007), rapid increases in interest rates (1994), defaults on sovereign debt (for example, Mexico in 1982 or Russia in 1998), or severe operational stress in financial markets (for example, the so-called "flash crash" of May 2010). Shocks can also emerge from, or be exacerbated by, the failure of a specific firm, infrastructure events, or breakdowns in market functioning that create or aggravate losses on a class of assets.

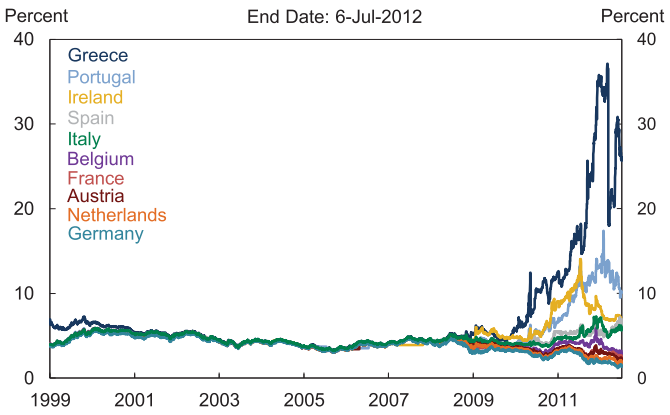
Not all such disturbances necessarily affect the stability of the financial system or the real economy. However, if the financial system is particularly vulnerable to shocks, for example, due to excessive leverage or excessive use of short-term wholesale funding of illiquid assets, a shock could have extreme balance sheet consequences and threaten institutions with insolvency. Market participants in general may not know which specific firms have balance sheets that are most at risk, so they may respond by avoiding exposure to any potential counterparty that might be at risk of insolvency. The resulting attenuation of credit provision could lead to disorderly liquidation of assets by all affected firms, inducing losses in other asset classes, thereby spreading and magnifying the effects of the initial disturbance. Credit flows to the non-financial sector could be disrupted, reducing the pace of real economic activity. In extreme cases, total economic losses could far exceed the original drop in asset value.

Given the inherent difficulty in predicting shocks, perhaps the most important line of defense is to reduce vulnerabilities by ensuring that institutions have sufficient capital and liquidity resources, sound risk-management practices, and strong internal and regulatory controls. Policy efforts can also strengthen financial markets' ability to withstand shocks by promoting greater informational transparency, for example, by addressing gaps in the availability of data and by producing consolidated audit trails. Additional policy measures that serve to enhance robustness of markets and institutions include comprehensive resolution planning, procedures for orderly liquidation of insolvent institutions, constraints on concentration in financial services, disciplined underwriting standards for credit origination, and exercising due diligence on emerging financial products. Finally, markets can be made more resilient if public authorities can respond to financial stresses in a flexible and timely manner. An example would be the central bank's role as lender of last resort, accompanied by appropriate safeguards against the risk of moral hazard.

The public policy goal is not to reduce financial market vulnerabilities to zero. Many of the key tasks performed by financial markets inherently involve a degree of vulnerability to certain kinds of risk. Credit provision to risky borrowers, maturity transformation, and the clearing of financial transactions are all activities that can generate vulnerabilities. Accordingly, the goal of public policy is to design regulatory and institutional frameworks that reduce vulnerabilities of markets, institutions, and infrastructures to acceptable levels, while allowing the financial system to continue to serve the needs of the real economy.

Destabilizing shocks are more likely to occur when markets have undergone structural changes, including those from technological development and financial innovation. These changes may be slow moving, occurring over a period of years. For

Chart 7.2.1 Sovereign Yields



Source: Bloomberg

Note: After Oct-2011, Ireland switched to a 9-year benchmark bond. All other series are 10-year benchmark yields.

example, the proliferation of mortgage-backed securities backed by subprime mortgage debt occurred over approximately eight years. Structural changes that occur during periods of low volatility can be particularly problematic, since such low-volatility episodes can lead to complacency on the part of risk managers and may lead to riskier behaviors in search of higher returns. The full implications of such structural changes are rarely recognized in real time. In particular, so-called "model risk" becomes more of a problem as market participants fail to adjust their risk-management models in response to the structural shifts. As a result, market participants are likely to underestimate the probability of shocks and to be unprepared when a shock actually occurs.

7.2 Areas of Heightened Uncertainty

There are several noteworthy aspects of the current economic environment in which structural change has elevated the level of uncertainty. A clear instance is the trajectory of growth, asset prices, and institutional change resulting from euro area sovereign stresses. The introduction of the euro represented a significant structural change that ushered in a related set of new developing institutions and policies. Initially, the unified monetary policy was associated with a convergence of sovereign yields across euro area countries **(Chart 7.2.1)**, although this was not accompanied by a full convergence of macroeconomic fundamentals, such as productivity growth.

The financial crisis and recession of 2007-2009 drew attention to cross-sectional differences in growth prospects, competitiveness, and default risk among euro area countries, with yield spreads widening for some sovereigns. These structural tensions were exacerbated by the cyclical downturn and by the fiscal burdens arising from bank support programs.

Meanwhile, euro area integration on various fronts remained incomplete, complicating the crisis response. While euro area leaders have expressed a desire to deepen European

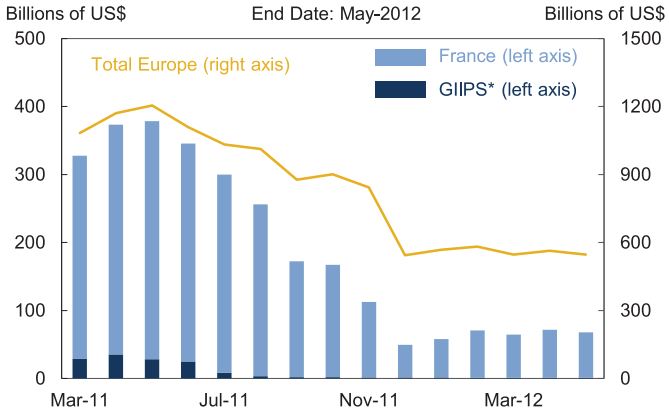
unification, there is continued uncertainty about how European official entities will resolve these fiscal strains and the extent to which euro area institutions may change as a result. Markets continue to believe that exits from the common currency cannot be ruled out, with attendant legal and other uncertainties. In particular, the threat of a breakup of the euro area carries with it redenomination risk—the risk that obligations due in euros will be repaid in an alternative, less valuable, currency.

Direct exposures of U.S. institutions to the most stressed euro area countries appear to be low **(Charts 7.2.2, 7.2.3, and 7.2.4)**. However, U.S. banks, money market funds (MMFs), and the insurance industry have indirect exposures through other non-periphery countries and through asset markets. This generates heightened uncertainty about the extent to which evolving conditions could spill over to U.S. markets and institutions.

Another key structural shift interacting with cyclical factors is the increased importance of emerging markets in global growth and the global financial system. The growth trajectories of emerging market economies (EMEs), notably the potential for a marked deceleration of growth in China as discussed in Section 4.4, could have a significant impact on growth and financial stability in the United States. In particular there continues to be uncertainty about the health and robustness of some of these economies, including concerns about banking and financial stability; the sustainability of regional real estate trends; the ability of policymakers to manage inflationary pressures; and the possibility of social unrest. The implications of these uncertainties for the U.S. financial system are primarily driven by the role of the EMEs as global providers of capital and as contributors to global growth.

Uncertainty is also elevated in U.S. housing markets. The 30 percent decline in house prices since January 2006 continues to weigh on U.S. real estate markets, with 12 million mortgages having negative equity and continued high

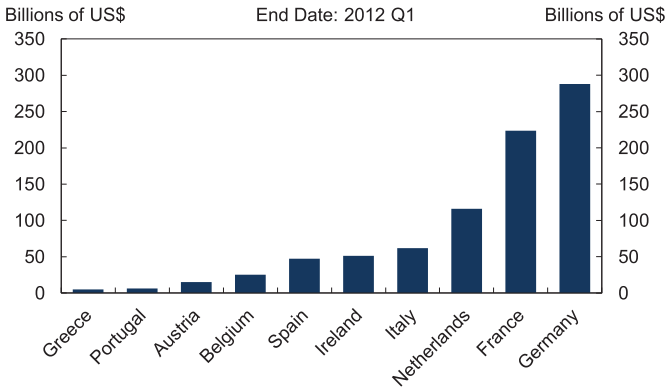
Chart 7.2.2 U.S. MMF Exposure to Europe



Source: SEC

*Greece, Italy, Ireland, Portugal, and Spain.

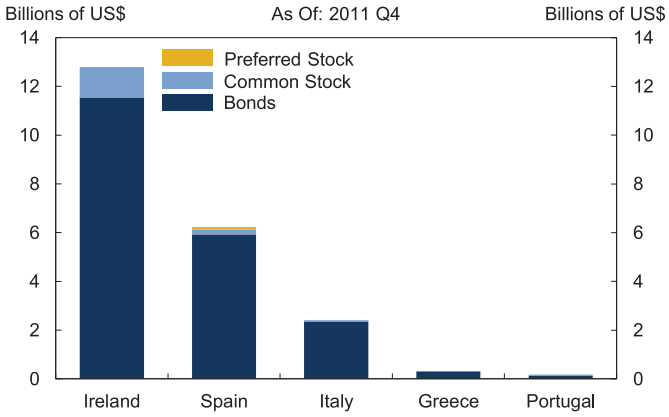
Chart 7.2.3 Large U.S. Banks' Exposure* to Europe



*Exposure includes the sum of all cross-border claims, including claims from derivative products and gross local country claims.

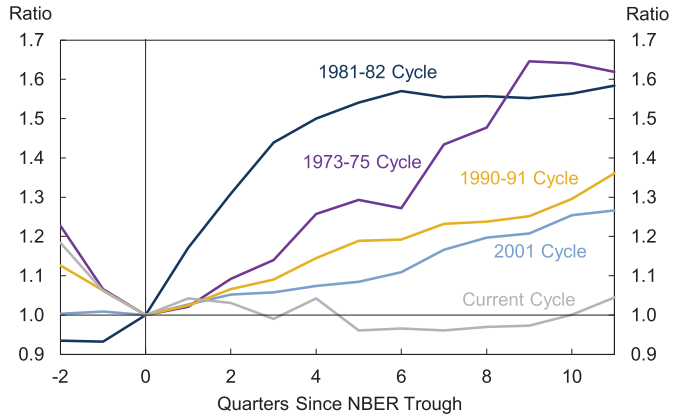
Source: FFIEC Note: Large banks defined by FFIEC's "LFI" designation.

Chart 7.2.4 Insurance Industry Exposure to Europe



Source: NAIC

Chart 7.2.5 Real Private Residential Investment



Source: BEA Note: Series Set to 1.0 at NBER Trough. Seasonally Adjusted.

levels of foreclosure activity. Additional mortgage losses are possible over the next five years due to increased monthly payments on home-equity loans. The current sluggish growth in the housing sector contrasts with the historical post-recession patterns, where residential investment typically would display solid growth during recoveries **(Chart 7.2.5)**. While there are signs of stabilization in housing prices, and the inventory of existing homes for sale has declined significantly, the overall weakness in the macroeconomy carries with it the risk of further declines in real estate prices, with additional stresses on household and institutional balance sheets.

In addition, the crisis exposed deep flaws in the structure of housing finance that need to be reformed, such as the incentives around securitization, the design of government-sponsored enterprises (GSEs), and the overall quality of mortgage-servicing standards. Financial institutions continue to work through legacy mortgage assets and apply conservative credit standards to new mortgage activity. Given the scarcity of private capital in mortgage markets, federal government support continues to dominate the provision of residential mortgages. While some progress has been made in addressing mortgage loan servicing and foreclosure abuses, as well as gaps in protections for homeowners, lack of uniform servicing standards with appropriate safeguards for consumers, such as single points of contact, continue to create potential adverse consequences for distressed homeowners and their surrounding communities. The structural and cyclical problems of the housing finance market constitute a vulnerability of the financial system that makes the U.S. economy more susceptible to adverse shocks. For example, the effect of a slowdown in economic growth could be amplified by the mortgage market, leading to larger-than-expected declines in home prices and sales.

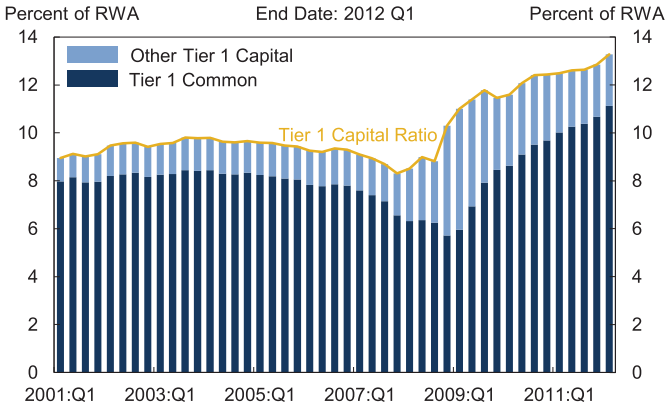
Another area of uncertainty is the fiscal policy outlook in the United States. A number of fiscal policy issues must be addressed around

the end of 2012, including expiration of the tax cuts originally enacted in 2001 and 2003, expiration of payroll tax cuts, expiration of extended unemployment benefits, the Budget Control Act-mandated sequester, and the need to raise the debt ceiling once again. As was the case with the debt ceiling debate in the summer of 2011, market volatility may increase as these fiscal deadlines approach, possibly weighing on growth. Furthermore, the long-term trajectory of U.S. fiscal policy is generally regarded as unsustainable, given the aging of the population and the likely path for health care expenditures. The way in which these long-term imbalances eventually will be resolved is unclear, representing yet another source of uncertainty for financial markets and the real economy.

7.3 Robustness of Financial Institutions and Markets

While some indicators point to an increased level of robustness of financial institutions and markets over the past year, there continue to be areas of serious concern. The aggregate tier one capital ratio of domestically owned bank holding companies (BHCs) was 13.3 percent of risk-weighted assets as of the first quarter of 2012, the highest level in more than 10 years **(Chart 7.3.1)**. Increased robustness can also be seen in the broker-dealer (BD) industry, which shows a sharp decline in leverage since 2007. Stress test results from the 2012 Comprehensive Capital Analysis and Review (CCAR) demonstrated the increase in capital, particularly common equity, held by the largest U.S. banking institutions since the onset of the financial crisis. Even so, 4 of the 19 BHCs had post-stress capital ratios that fell below one or more regulatory minimums after including all planned capital distributions. The aggregate BHC funding profile has been strengthened by increased reliance on core deposits **(Chart 7.3.2)**, continued reduction in short-term wholesale funding **(Chart 7.3.3)**, and a substantial increase in the fraction of assets that are highly liquid. There is concern, however, that these funding and liquidity

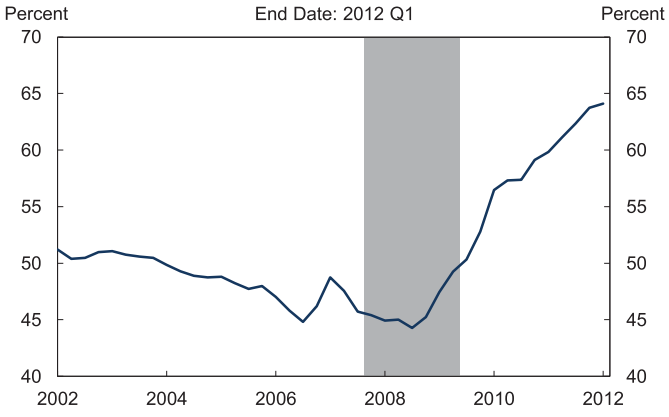
Chart 7.3.1 Aggregate BHC Capital Ratios



Source: FR Y-9C, FSOC calculations

Note: Domestically owned BHCs that file a Y-9C.

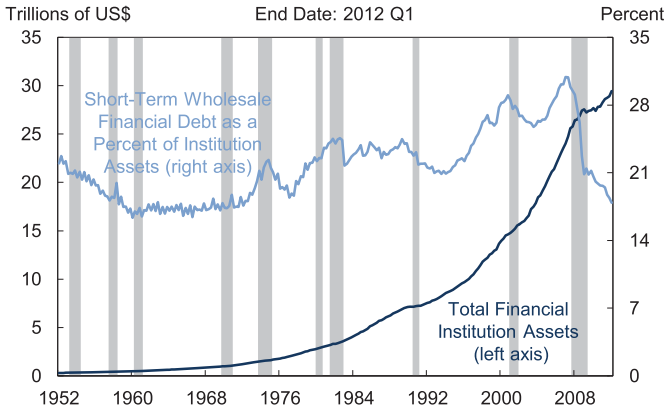
Chart 7.3.2 Core Deposits as a Percent of Total Liabilities



Source: FDIC, FSOC calculations

Note: FDIC-insured institutions. Gray bar signifies NBER recession.

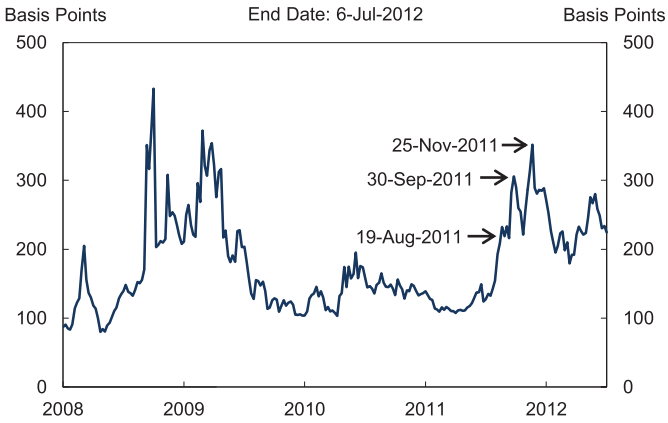
Chart 7.3.3 Short-Term Wholesale Funding



Source: Flow of Funds, Haver Analytics

Note: Gray bars signify NBER recessions.

Chart 5.2.12 CDS Spreads of 6 Large Complex BHCs



Source: Bloomberg

Note: Equal-weighted average of BAC, C, JPM, WFC, GS, MS.

developments may be short-lived implications of the low interest rate environment and the temporary unlimited coverage for non-interest-bearing transaction accounts under Section 343 of the Dodd-Frank Act, which is scheduled to expire on December 31, 2012.

Other indicators suggest a less sanguine view of U.S. financial institutions. The average cost of buying credit protection on the six largest U.S. BHCs started to rise in August 2011, with increasing concerns about the euro area stability. **(See Chart 5.2.12, displayed here for convenience.)** While credit default swap (CDS) spreads on these BHCs have come down somewhat since their peak in November 2011, they remain above the levels that prevailed from mid-2009 through mid-2011. Similarly, market valuations of the large BHCs are well below book value. Revenues at these institutions remain challenged by general market uncertainty and the low interest rate environment, and BHC earnings growth is largely dependent on non-recurring accounting items. In addition, approximately 12 percent of all institutions within the commercial banking sector still remain on the FDIC's problem bank list, accounting for approximately 2 percent of sectoral assets.

Changes in financial market infrastructures are likely to make the derivatives market less vulnerable to shocks. In recent years, there have been substantial increases in the volume of swaps contracts being centrally cleared, which represents a significant step toward improved management of credit risks in these markets. In addition, informational transparency to regulators has been enhanced by the expansion of trade repositories (TR). The availability of data from the Trade Information Warehouse, the TR for CDS, proved extremely useful to regulators in determining patterns of exposures to Greek sovereign default risk during the period leading up to the Greek debt restructuring in March 2012. Finally, it is anticipated that, pursuant to Title VII of the Dodd-Frank Act, many types of swaps will be traded on swap execution facilities (SEF) and

security-based SEF in the near future. This development should significantly enhance both pre- and post-trade transparency of price and volume information on executed transactions to swaps market participants. While the SEC and CFTC have not yet finalized rules relating to the regulation of SEFs and security-based SEFs, both agencies have issued detailed proposals.

Another form of vulnerability has been highlighted by the failure of segregation procedures to fully protect customers of MF Global. **(See Box D: MF Global Bankruptcy.)** For decades, segregation of customer funds has been the lynchpin of customer protection in futures markets. While MF Global customers recovered 72 percent of the value of their accounts for trading on U.S. futures exchanges within a few months of the bankruptcy, they lost use of those funds for critical weeks and are still owed hundreds of millions of dollars in the aggregate. MF Global customers trading on foreign exchanges have received a much lower percentage of recovery. The CFTC has taken steps to enhance customer protection and has solicited input on further possible actions.

Financial reform efforts are essential in restoring the strength and stability of financial institutions and markets. Nevertheless, less-regulated institutions and markets could be perceived to hold competitive advantages. Accordingly, vulnerabilities could continue or increase if some participants choose to move business lines or activities to take advantage of perceived gaps or inconsistencies in regulation. This is particularly a concern when comparable financial activities are not subject to a comparable degree of regulatory stringency. This could occur, for example, if a lightly regulated swaps participant were to expand its business to approximate a full swaps dealership without the requisite regulatory oversight. The Dodd-Frank Act provides mechanisms to address such regulatory gaps, for example, by requiring oversight of all swap dealers and major swaps participants and improving regulatory oversight on nonbank

financial companies that could pose a threat to U.S. financial stability.

7.4 Continuing Vulnerabilities in the Financial System

A number of characteristics of the current financial system continue to render it vulnerable to a variety of shocks and create the potential to amplify the destructive effects of such shocks.

Different types of vulnerabilities can arise in financial systems. First, some vulnerabilities are inherent to the role that financial systems play in the economy. For example, maturity transformation (turning short-term savings into long-term capital investment) is an essential service of financial markets. But such transformation carries certain potential instabilities, such as the risk that short-term debt may not be rolled over or even the possibility of a run on a financial institution. Similarly, providing credit to risky borrowers is an important function of financial institutions. However, some degree of credit losses associated with such lending is inevitable. These sorts of vulnerabilities can be mitigated by appropriate public policy structures, including prudential regulation and supervision, robust capital and liquidity requirements, deposit and share insurance, orderly liquidation authority, and the role of the central bank as lender of last resort, but they cannot be fully eliminated.

A second type of vulnerability arises from control weaknesses in operations, risk management, and governance. Examples would include the possibility of erroneous trade completion in a high-speed trading environment, the danger of cybersecurity breaches, and risk-management deficiencies in financial institutions. Such vulnerabilities highlight the importance of regulatory measures, such as prudential capital and liquidity requirements and risk-management standards, as well as private-sector risk controls.

Finally, a third class of vulnerabilities is generated by the behavioral responses of market participants to financial developments, which could lead to undesirable vulnerabilities in the aggregate. An example would be the tendency for some investors to take on additional risk in a low interest rate environment in an effort to reach for yield. Another example would be the spillovers from the actions of firms in highly concentrated market segments or asset classes. Regulatory measures can be useful in addressing these sorts of vulnerabilities. For example, appropriate compensation regulation can deter firms from providing incentives to take on excessive risk. Equally important is to help ensure that stakeholders bear losses in downside scenarios and are subject to market discipline on an ongoing basis.

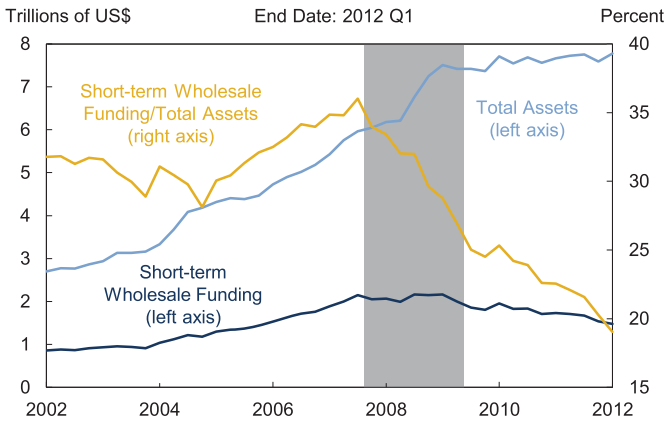
These three types of vulnerabilities are not mutually exclusive: a given source of market vulnerability might be associated with all three types to varying degrees, so any classification of specific vulnerabilities is to some extent arbitrary. In the following text, we discuss specific vulnerabilities of each of these types in the current environment, with the vulnerabilities classified according to which characteristics are most predominant.

7.4.1 Inherent Vulnerabilities

Run Risk in Wholesale Short-Term Funding Markets

Broker-dealers (BD) and other market participants typically fund some of their portfolio holdings and securities inventories using short-term funding, obtained through repos, commercial paper, and unsecured short-term lending. While use of short-term wholesale funding has decreased overall **(Chart 5.2.7, displayed here for convenience)**, the very large BHCs, especially those with large BD operations, continue to display a substantial dependence on short-term, less stable funding sources **(Chart 7.4.1)**. Moreover, as discussed in Section 5.2, the U.S. branches and agencies of foreign banks also rely heavily on short-term funding through MMFs and uninsured wholesale

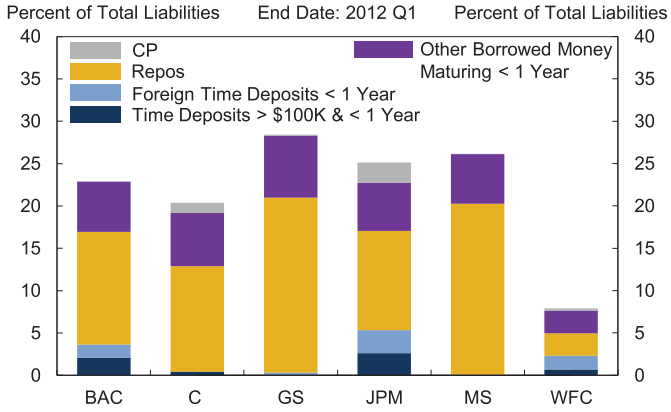
Chart 5.2.7 Short-Term Wholesale Funding at Largest BHCs



Source: FR Y-9C

Note: Aggregation of BAC, C, JPM, and WFC. Gray bar signifies NBER recession.

Chart 7.4.1 Less-Stable Funding Sources at 6 Largest BHCs



Source: FR Y-9C

Note: Liabilities excluding minority interest.

depositors. In practice, institutions that rely on short-term funding must maintain strong short-term credit ratings. In June 2012, Moody's reduced its short-term ratings by one notch for three large dealer banks: Barclays, Goldman Sachs, and Morgan Stanley. Markets will be monitoring the impacts of the downgrades on these banks' funding models.

This continued reliance on short-term funding for illiquid assets can be a source of instability if borrowers have difficulty rolling over their maturing short-term debt on economically viable terms. This dynamic could force borrowers to sell long-duration assets under fire-sale conditions, generating a self-reinforcing negative feedback loop by putting downward pressure on prices that, in turn, stresses the balance sheets of a wider range of institutions.

The vulnerabilities associated with the use of short-term funding for illiquid assets may be exacerbated by ongoing structural weaknesses in the tri-party repo market and in MMFs. The tri-party repo market relies heavily on intraday credit extensions from the clearing banks, is exposed to weaknesses in the credit and liquidity risk-management practices of market participants, and lacks a mechanism to help ensure orderly liquidation of tri-party repo collateral by creditors of a defaulting dealer. **(See Box G: Ongoing Vulnerabilities in the Tri-Party Repo Market.)** MMFs can be subject to runs if the $1.00 net asset value (NAV) is believed to exceed the liquidation value of the fund. **(See Box H: Money Market Fund Responses to Euro Area Uncertainty.)**

7.4.2 Potential Control Weaknesses

High-Speed Trading

High-speed automated trading has become common in equity and derivatives markets, and is also spreading to markets for Treasury securities and foreign exchange. **(See Section 5.4, Box F: Algorithmic and High-Frequency Trading.)** It is likely that high-speed trading increases market liquidity in normal market conditions. However, any market in which liquidity is

BOX G: ONGOING VULNERABILITIES IN THE TRI-PARTY REPO MARKET

While regulators have gained much better visibility into the activity of the tri-party repo market in recent years, it remains a significant source of potential contagion. Despite the recent steps taken by participants to advance changes in the market's infrastructure to mitigate key vulnerabilities, progress is taking longer than initially anticipated. Three specific sources of vulnerability remain of great concern to the Council:

- Heavy reliance by market participants on intraday credit extensions from the clearing banks,
- Weakness in the credit and liquidity risk management practices of many market participants, and
- Lack of a mechanism to ensure orderly liquidation of tri-party repo collateral by creditors of a defaulting dealer.

Over-reliance on intraday credit. Currently, tri-party repo trades "unwind" every day, meaning that the clearing bank returns cash to the lender's account and returns collateral to the borrower's account. Trades are not settled until several hours later. For several hours each afternoon, dealers require funding of their entire tri-party repo book that lenders do not provide. This $1.7 trillion funding need is provided by the two clearing banks.

This is a potentially unstable situation. In times of market stress, the clearing bank faces a conflict of interest between its own risk-management needs and the role it performs as a lender to dealers experiencing funding problems. Given its intraday exposure to dealers, the clearing bank could have a strong incentive, in the face of a dealer's deteriorating credit quality, to refrain from unwinding in order to avoid extending credit and taking on exposure to the dealer's collateral.

Poor risk management practices. Some dealers remain very dependent on short-term repo funding and are heavily exposed to rollover risk. Of particular concern is the use of short-term borrowing to finance less liquid collateral, such as asset-backed securities or corporate bonds. In addition, some lenders do not exercise sufficient rigor in setting haircuts and in evaluating appropriate asset types as collateral, particularly for less liquid assets. This can create a destabilizing cycle: if lenders do not feel protected by the haircuts they have in place, they may respond to a dealer stress event or rising price volatility by increasing haircuts sharply, further reducing the dealer's ability to obtain needed funding. Instability is also intensified by the fact that some lenders (notably MMFs subject to Rule 2a-7 under the Investment Company Act) accept collateral that they are unable to hold and liquidate gradually following a default. These lenders are likely to pull back their funding altogether if they are subject to redemptions to avoid being forced to take possession of the collateral—further destabilizing market conditions. Presently, there is no process in place to prevent lenders from taking on collateral that they could not properly manage or permissibly hold outright.

Absence of a mechanism to facilitate orderly liquidation of a defaulted dealer's collateral. A large dealer's default could leave lenders with billions of dollars of collateral that they would likely seek to liquidate quickly. The resulting large volume of asset sales could depress prices, significantly impair market liquidity, and erode the capital of many financial firms through mark-to-market losses. This erosion of capital could, in turn, create intense pressure for holders to shrink their balance sheets by selling additional assets, creating a downward spiral. There is currently no mechanism in place to ensure that lenders will be able to liquidate the collateral of a defaulted dealer gradually over time in a manner that avoids this sort of fire sale dynamic.

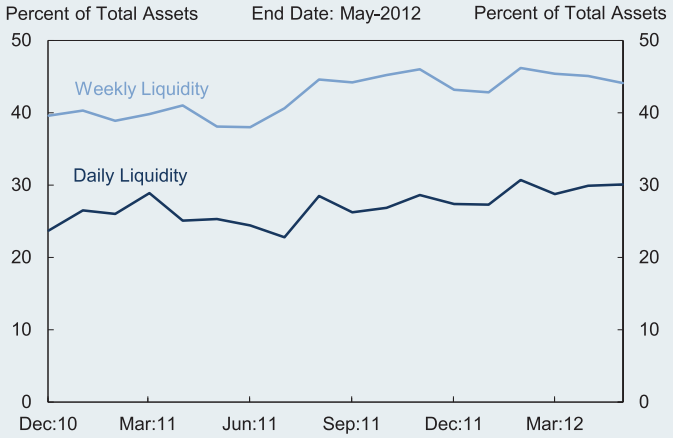
BOX H: MONEY MARKET FUND RESPONSES TO EURO AREA UNCERTAINTY

Vulnerabilities from reliance on short-term funding can be compounded by structural problems with money market funds (MMFs). MMFs are promoted to institutional and retail investors as stable investments that provide cash on demand at a constant net asset value (NAV) of $1 per share, very much like bank deposits. However, these funds are prone to runs, as investors have an incentive to exit a fund at $1 per share if they suspect that its NAV is likely to decline below $1 (that is, they expect the fund to "break the buck"). A clear example is the wave of redemptions from MMFs after the Reserve Primary Fund broke the buck in September 2008 because of its Lehman exposures.

A more recent episode of large-scale MMF redemptions is the response of MMFs to increased uncertainty about euro area stability in June 2011. This episode provides an opportunity to examine potential vulnerabilities in the MMF industry. In June 2011, the potential for European bank downgrades and rising concern about the euro area periphery debt crisis prompted concerns about MMF exposures to European banks. Prime MMFs began experiencing substantial redemptions, with assets falling by $165 billion (or 5.1 percent) in June 2011 and with some MMFs losing as much as 20 percent of their assets during this period.

MMFs were able to satisfy these redemptions with internally generated liquidity. **(See Chart 5.3.7, displayed here for convenience.)** In addition, while MMFs' euro area exposures had generated negative press attention, these positions had not actually experienced any losses affecting the mark-to-market value of MMFs' portfolios. MMFs were also better able to absorb these redemptions because they occurred on a steady basis over a period of weeks, as opposed to the sort of run on MMFs that occurred in 2008, where investors withdrew over $300 billion in a matter of days from prime MMFs, several of which were simultaneously experiencing mark-to-market losses in their portfolios. These mitigating circumstances allowed MMFs to absorb redemptions in the summer of 2011 while maintaining a stable NAV.

Chart 5.3.7 Prime Funds Liquidity

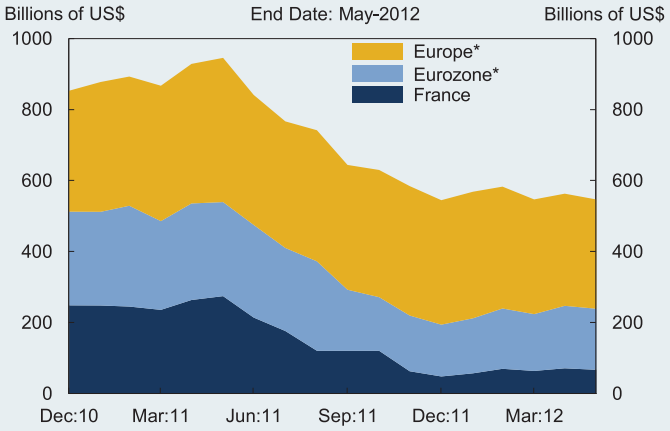


Source: OFR, SEC

Following this period of redemptions, MMFs rapidly reduced their exposure to euro area counterparties. For example, prime MMF exposures to French issuers declined from a peak of $274 billion at May 31, 2011, to $176 billion (or 36 percent) by July 31, 2011, and to as low as $48 billion by December 31, 2011. Overall euro area exposures of prime MMFs decreased considerably from nearly 30 percent of prime MMF assets to 18 percent of assets between May 31, 2011, and May 31, 2012 **(Chart H.1)**.

While this rapid reduction in short-term dollar funding for euro area banks reduced MMF exposure to the debt crisis, it added to strains in the global financial system. For those institutions in which MMFs continue to invest, credit has been provided at shorter maturities and increasingly in secured form through repurchase agreements. From March 2011 to May 2012, the weighted average life for prime MMFs declined from 81 to 71 days. As of June 2012, MMFs have a relatively small direct exposure of approximately $1 billion to Spanish banks, with no direct exposure to Italian or Greek banks. Prime MMFs also, on average, reduced their overall credit exposure, shifting portfolio assets from bank certificates of deposit into government debt and repos **(Chart H.2)**.

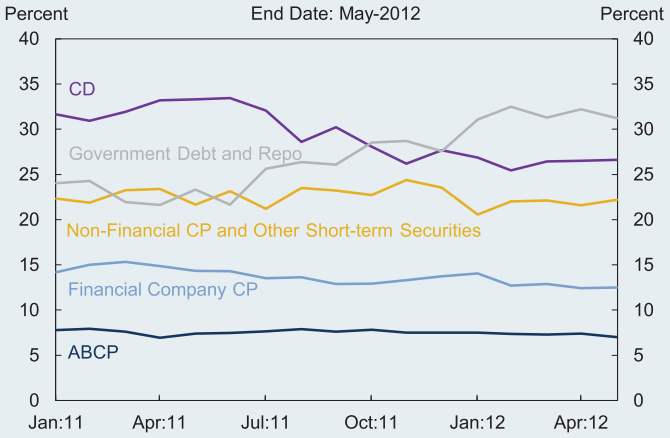
Chart H.1 Prime Fund Bank Holdings



Source: SEC

*Note: Inclusive of entire area below.

Chart H.2 Prime Fund Portfolio Composition



Source: SEC

provided by automated trading strategies could find significant amounts of liquidity suddenly withdrawn if those automated strategies pause due to changes in market conditions. Evidence suggests that the so-called "flash crash" of May 2010 involved a temporary liquidity withdrawal of this type. Attenuated market liquidity, in turn, can adversely affect market functioning more generally. Risk controls must keep pace with these developments. Unfortunately, the risk arising from high-speed trading is difficult to assess because it is opaque and difficult to monitor (particularly in real time).

Complex Trading Strategies and Risk Management

The effects of advances in technology and financial innovation have also resulted in financial firms employing trading and hedging strategies that rely increasingly on complex assumptions regarding the performance and interrelationships of financial instruments and contracts. Recent events, including the publicly announced trading losses at JPMorgan Chase (JPM), highlight the risks that can develop in the use of such complex strategies. This incident reinforces how essential it is that assumptions underlying trading and risk management models be properly validated and monitored on an ongoing basis to help ensure that risks of complex trading strategies are appropriately measured and understood. Institutions also should establish a process to review the effect of approved model changes to help ensure that such changes are appropriate.

Cybersecurity

Cyberattacks represent an increasing threat to financial institutions and the infrastructure components on which financial systems depend for communicating, sharing information, and conducting business. The number and sophistication of malicious incidents continue to grow as business and financial institutions continue to adopt Internet-based commerce systems. Account takeovers can occur, including fraudulent money transfers and counterfeiting of stored value cards. Third-party payment processor breaches represent a continuing risk,

whereby the computer networks of large payment processors are targeted, potentially leading to financial losses and compromised personally identifiable information.

Cyber criminals are becoming more sophisticated, and attack vectors are evolving. Social-engineering techniques used in attempts to gain unauthorized access into networks and systems are shifting from generalized and random to highly targeted. Another cyber threat can emerge from individuals with direct access to core processing centers. Such individuals may be in a position to steal intellectual property, insider information, or data that can damage the reputation of the company. Market participants report that attacks targeting data and assets are increasingly focused on institutional aspects of infrastructure as opposed to retail operations. These types of attacks are associated with increased severity of potential losses and could be increasingly disruptive. Cyber threats also pose a potentially significant risk to the stability of financial markets through the disruption of critical payment, clearing, and settlement systems for key financial institutions.

Robustness of Operational, Risk Management, and Governance Controls at Central Counterparties

In its 2009 meeting in Pittsburgh, the G-20 established the goal of having standardized swap contracts centrally cleared by the end of 2012. This objective was codified in Title VII of the Dodd-Frank Act. Central clearing of swaps will enhance the stability and soundness of over-the-counter (OTC) derivatives markets in a variety of ways, including improved counterparty risk management and multilateral netting of contracts. However, it could also lead to an increased number of financial contracts cleared by a relatively small number of central counterparty (CCP) clearing houses, which mitigate counterparty credit risk between market participants by becoming the universal counterparty and providing time-specific settlement of transactions. As a result, these clearing institutions have become associated

with even more critical concentration of risk than before.

The default of a major participant could impair the liquidity available to a CCP, requiring that liquidity for settlement be replaced from the CCP's own resources if it is to meet its obligations in a timely fashion. The Principles for Financial Market Infrastructures, finalized this past April by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO), provides a set of international standards for CCPs and other financial market utilities that address these issues. In addition, Title VIII of the Dodd-Frank Act provides an enhanced regulatory framework for CCPs through the Council's authority to designate financial market utilities as systemically important.

Data Standards and Analytics

The financial crisis revealed that lack of data standards and poor data management threatened financial stability in several ways. Those who created, collected, and relied upon financial data found that financial data quality and scope simply had not kept up with the increasing complexity of, and innovation in, modern financial markets. That was especially the case as financial activity migrated from traditional depository institutions into the capital and securitization markets and across national borders. Consequently, during the crisis, a lack of consistent and high-quality data made it difficult or impossible for some market participants and their regulators to monitor risks in trading books, gauge overall exposures to specific counterparties, price complex securities, or even assess the potential losses that individual firms might face due to falling house prices. Different data systems using different naming conventions made comparisons difficult or impossible, even within the same firm. Resolving a large, complex financial institution like Lehman Brothers was hobbled by the snarled nature of insufficient, conflicting, and inconsistent data.

Since then, policymakers have broadened the scope of data they collect and have made efforts to improve their quality. Examples include the new Form PF (for private funds) and data to be collected by swap data repositories and security-based swap repositories for swaps and other derivatives, as well as international efforts by the International Monetary Fund (IMF) and the Financial Stability Board (FSB) to close data gaps, particularly for derivatives and nontraditional funding activities. Yet significant gaps remain in both the scope and quality of data needed to monitor and enhance financial stability. More needs to be done, particularly in the activities that have traditionally resided outside the regulators' sphere such as securitization markets and OTC derivatives.

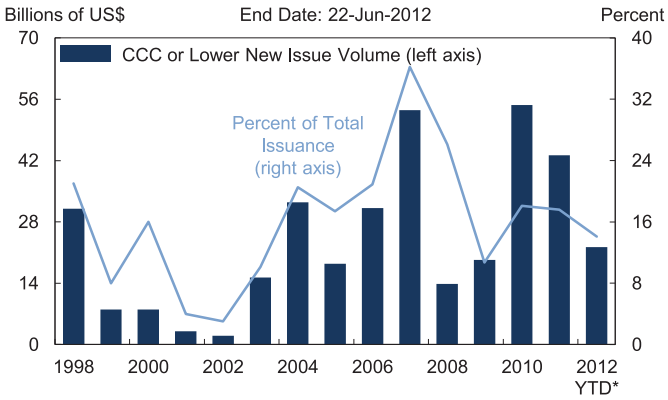
Data standards facilitate improvements in data quality. For instance, efforts to establish a global legal entity identifier (LEI) have made significant progress in the last year, including the establishment of the CFTC Interim Compliant Identifier (CICI) initiative, but work remains to be done to complete this important effort. The Office of Financial Research (OFR), established in Title I of the Dodd-Frank Act, is tasked with improving the quality of financial data and data analytics along multiple dimensions, including LEI implementation and enhancement.

7.4.3 Behavioral Vulnerabilities

Managing Risk in a Low Interest Rate Environment

An unusually low rate environment, such as that currently in place, is prone to several behavioral vulnerabilities. Market participants may have an incentive to take on additional leverage, credit risk, and duration risk in an effort to boost yields. While increased risk taking is one possible transmission mechanism for expansionary policies, such reach for yield behavior without appropriate risk management could leave many participants with portfolios that are more vulnerable to adverse market moves.

Chart 7.4.2 Credit Quality of High-Yield New Issues



Source: JP Morgan

Note: Includes Split B, CCC and non-rated new issuances.
* 2012 data are YTD as of 22-Jun-2012.

The tendency to reach for yield may be especially pronounced for entities such as pension funds or insurance companies that face a stream of quasi-fixed nominal liabilities. For example, the investment yield for life insurers in aggregate is only around 1.1 percentage points above the minimum yield needed to maintain policyholder reserves, leaving these insurers with a relatively small margin of error. Hedge funds also may have an incentive to reach for excess yield if they manage to specific hurdle rates expected by their investors or if the value of their fund is considerably below the high-water mark that would trigger a large payout. In addition, money market funds may have an incentive to increase their risk profiles, especially if the low interest rates do not provide sufficient yield to cover their expenses.

We do not see much evidence of such behaviors currently. Risky assets do not exhibit signs of overvaluations associated with widespread reach-for-yield behavior. If anything, measures of risk premia for equities and corporate bonds are very wide by historical standards. However, indicators of such behaviors should be watched carefully, including leverage, contractual terms, borrower characteristics, the use of levered instruments for funding, issuance of "covenant lite" loans, and the rate of original issue, CCC-rated high-yield bonds **(Chart 7.4.2)**.

Eventually, interest rates will move up to more normal levels. If market participants are adequately prepared for such an increase in rates, and if this increase occurs gradually, it is unlikely that financial stability would be adversely affected. However, a rapid increase in interest rates could be disruptive. For example, interest rates could increase rapidly following a loss in investor confidence in the sustainability of U.S. fiscal policy. It is unclear how well prepared fixed income markets are to the possibility of such rapid interest rate movements. Those especially vulnerable would be market participants with highly leveraged carry-trade positions. It is important to recognize that while any institution in isolation can insulate itself from movements in interest

rates via swaps and derivatives, these contracts are in zero net supply in the aggregate. As a result, some market participants must be exposed to interest rate risk.

Moral Hazard Issues for Large, Complex Financial Institutions

Behavioral vulnerabilities of large, complex financial institutions could increase with the complexity and size of these institutions. These vulnerabilities occur because an expectation of government support could generate more risk taking by institutions that are perceived as too big or too complex to fail. Indeed, many observers interpret actions taken by government authorities during the recent crisis as evidence that the public sector provides an implicit guarantee to large complex financial institutions. Such beliefs, if widespread, could lead to increased concentration in financial services and greater risk taking by those institutions deemed protected, as the implicit government guarantee reduces market discipline. The result could be higher overall risk in financial markets with attenuated risk management.

Large financial institutions continue to have a high degree of operational complexity and interconnectedness. These complexities may reflect the diverse lines of businesses and locations in which these firms operate, but lead to legal structures with activities spread over hundreds, and in some cases thousands, of subsidiaries **(Chart 7.4.3)**. Market participants could believe that the complexity and interconnectedness of these companies could make them harder to resolve and induce further likelihood of government support in a stress environment. Such beliefs could therefore promote continued moral hazard problems for such complex financial entities.

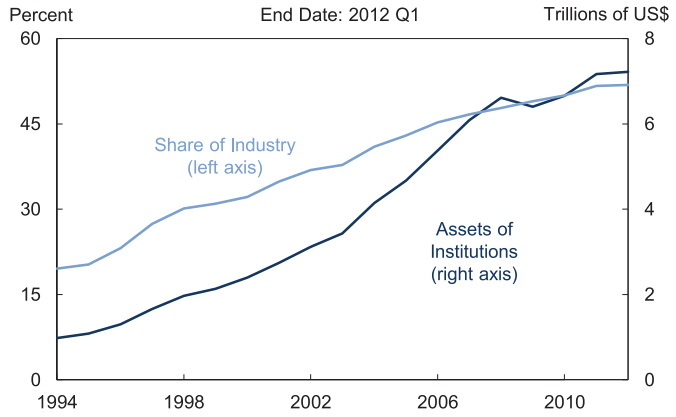
In addition, there may continue to be perceptions that some institutions may receive special treatment by virtue of their size. Such beliefs could be exacerbated by greater concentration in the financial services industry. The financial industry

Chart 7.4.3 Complex Financial Institutions in 2012

Institution	Total Subsidiaries	% Foreign Subsidiaries	Countries of Operation
JP Morgan	5183	57%	72
Bank of America	4647	21%	56
Citigroup	3556	31%	93
Goldman Sachs	3550	39%	53
Morgan Stanley	2718	40%	64

Source: Bankscope As of: 17-May-2012

Chart 7.4.4 Assets of the 10 Largest Depository Institutions



Source: FDIC

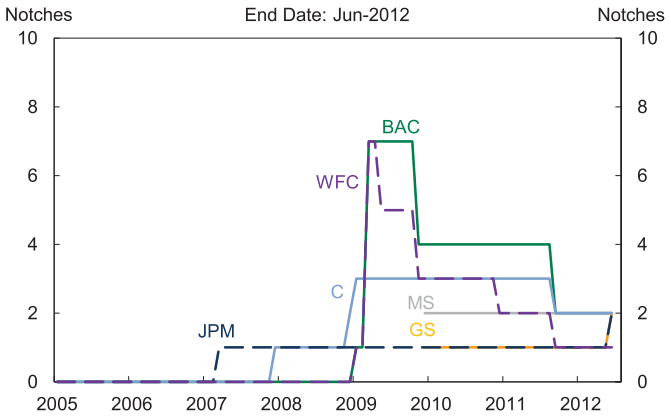
has become increasingly concentrated for decades, a trend enhanced in part by such legislative developments as the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 permitting interstate branching, and the Gramm-Leach-Bliley Act, enacted in 1999, that allowed affiliations among commercial banks, investment banks, and insurance companies. This trend continued through the crisis **(Chart 7.4.4)** in part due to acquisitions of failing firms. As of the first quarter of 2012, the 10 largest banks held 52 percent of industry assets, worth approximately 47 percent of GDP, compared with 45 percent of industry assets, worth approximately 40 percent of GDP at the end of 2006. Notwithstanding this trend towards greater concentration, the U.S. banking system remains significantly less concentrated than that of most developed countries.

These moral hazard problems are partially addressed by raising capital requirements. An additional important priority is to develop credible and robust failure resolution procedures for large complex institutions—procedures that would allow the institution to be liquidated or restructured, as appropriate, with minimal damage to the markets as a whole. The FDIC is authorized to resolve certain failing financial companies under the Dodd-Frank Act and has developed a resolution strategy for such firms that will promote financial stability by minimizing contagion and requiring accountability by forcing the firms' shareholders and creditors to bear losses.

The credit rating agencies appear to have recognized that the Dodd-Frank Act limits the ability of the government to provide extraordinary support to shareholders and creditors of large complex financial institutions. This recognition can be seen in the reduced uplift the major rating agencies incorporate into the long-term ratings for a number of large financial institutions, many of which have been downgraded or

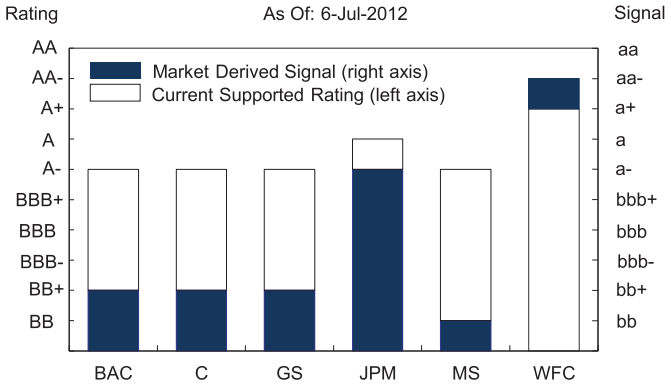
assigned a negative rating outlook as a result **(Chart 7.4.5)**. However, a degree of ratings uplift still remains for the largest banks, typically 1 to 2 notches for large bank holding companies and 2 to 3 notches for large bank subsidiaries. In addition, there is evidence that market-derived indicators of credit quality tend to be lower than the levels assigned by ratings agencies **(Chart 7.4.6)**. While ratings agencies typically report uplifts only for long-term ratings, these uplifts also support the short-term ratings that help firms access short-term unsecured wholesale funding. Vulnerabilities can arise when a financial institution's funding model depends in part on the belief that the government will provide support, rather than only on the intrinsic strength of the institution and its portfolio.

Chart 7.4.5 Moody's BHC Systemic Support Uplift



Source: Moody's

Chart 7.4.6 S&P Current Actual & Market Derived Signal*



Source: Standard & Poor's Rating Services

*Note: Market derived signal is CDS-based.

Appendix A

Designation of Systemically Important Financial Market Utilities

On July 18, 2012, the Financial Stability Oversight Council (Council) designated eight financial market utilities (FMUs) as systemically important under Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Act). The designated FMUs are:

- The Clearing House Payments Company L.L.C. (PaymentsCo) on the basis of its role as operator of the Clearing House Interbank Payments System (CHIPS)
- CLS Bank International (CLS Bank or CLS)
- Chicago Mercantile Exchange, Inc. (CME)
- The Depository Trust Company (DTC)
- Fixed Income Clearing Corporation (FICC)
- ICE Clear Credit LLC (ICE Clear Credit)
- National Securities Clearing Corporation (NSCC)
- The Options Clearing Corporation (OCC)

Title VIII provides four specific factors the Council must take into consideration when determining whether an FMU is, or is likely to become, systemically important.[1] These factors are also incorporated with more detail provided in the Council's regulations regarding the designation of FMUs.[2] The four specific factors are (A) the aggregate monetary value of transactions processed by the FMU; (B) the aggregate exposure of the FMU to its counterparties; (C) the relationship, interdependencies, or other interactions of the FMU with other FMUs or payment, clearing, or settlement activities; and (D) the effect that the failure of or a disruption to the FMU would have on critical markets, financial institutions, or the broader financial system. Title VIII also requires the Council to take into consideration any other factors that the Council deems appropriate. The Council believes that the four identified factors provided an appropriate basis for making determinations, and thus the Council did not explicitly rely on any other factors.

This appendix provides a description of each FMU, as well as an analysis of its systemic importance based on the factors listed here. Each FMU received a letter on May 22, 2012 informing it that the Council had proposed its designation and providing it with the same rationale for the Council's determination provided in this appendix. This appendix does not, however, include any confidential data that were part of the Council's analysis, though such confidential data were included in the May 22 letters to each FMU. The FMUs each had 30 days to request a hearing if they disagreed with the proposed determination of the Council or the Council's proposed findings of fact, but no FMU requested such

a hearing. Accordingly, the Council has unanimously voted in favor of final designations on the following FMUs based on the analyses described here:

A. The Clearing House Payments Company L.L.C.

Description of the Clearing House Payments Company L.L.C.

PaymentsCo, a Delaware corporation, is the legal person that operates CHIPS, which is a multilateral system operated for the purpose of transferring payments among its 52 participants. Therefore, PaymentsCo, as a person that operates a multilateral system whose purpose is transferring payments among financial institutions, meets the definition of FMU set out in Title VIII.[3]

CHIPS is the only private sector system in the United States for settling large-value U.S. dollar payments continuously throughout the day. Large-value payment systems play a key role in financial markets by providing a means for banks to discharge payment obligations related to important financial market activities such as money market and commercial transactions. Payments settled by such systems are often high in value and require secure, reliable, and timely settlement. For example, two banks might use a large-value payment system to settle a time-sensitive interbank loan. For commercial transactions, a corporation may instruct its bank to use a large-value payment system to make critical payments to its suppliers.

Large-value payments settled over CHIPS often represent the U.S. dollar sides of transfers between U.S. money center banks and foreign banks operating in the United States, such as foreign exchange and Eurodollar transactions. CHIPS traffic also includes an increasing share of payments for transactions such as the adjustment of correspondent balances and payments associated with commercial transactions, bank loans, and securities transactions.

The 52 CHIPS participants are U.S. commercial banks, foreign banks with offices in the United States, and one private banker. These participants constitute some of the largest banks in the world by asset size and include bank subsidiaries of 22 financial institutions considered to be global systemically important financial institutions by the Financial Stability Board.[4] Participants also send and receive payments over CHIPS on behalf of thousands of customers, including a large number of correspondent banks. U.S. depository institutions account for a substantial percentage of all value sent. Forty participants are headquartered outside the United States.

An important feature of CHIPS is that it can bilaterally and multilaterally net payments for settlement, which permits CHIPS to settle its daily average of payments with a fraction of funding. A disruption to CHIPS could therefore have a multiplier effect on the liquidity needs of participants.

Participants do not bear credit risk within CHIPS, as they do not extend credit to each other over the system. They do, however, bear liquidity risk. Because payment messages in the CHIPS queue are not guaranteed to settle, participants may not receive, either during the day or at the end of the day, payments they

are expecting to receive over CHIPS. Liquidity risk is high during the end-of-day settlement process when participants have a final expected position that depends on other participants meeting their final funding requirements. If a participant fails to fulfill its final funding requirement, CHIPS will net and release as many of the payments remaining in the queue as possible and then delete the rest from the system. The participants that were expecting to receive those deleted payments must then arrange to receive that liquidity outside of CHIPS.

Analysis of Systemic Importance

(A) Aggregate monetary value of transactions processed by CHIPS

The volume and value of payments settled over CHIPS demonstrate the high degree to which the U.S. banking system relies on CHIPS to facilitate significant financial flows, particularly those involving transfers between U.S. money center banks and foreign banks operating in the United States. As context for the value of payments settling through CHIPS, every two weeks, CHIPS settles payments equivalent to the gross domestic product of the United States.

Settlement volumes and values. CHIPS, settling $1.6 trillion on average a day, has a substantial share by volume and value in the U.S. large-value payments market. A significant percentage of CHIPS volume is sent or received by participants on behalf of third parties that are not participants. At least 7,500 third parties are listed in the database that CHIPS maintains to facilitate the routing of payments straight through to their end beneficiaries.

Funding. The average and peak total participant funding for the CHIPS account at the Federal Reserve Bank of New York (FRBNY) per day in 2011 was substantial, with a significant portion being supplied by a small group of funding agents acting on behalf of nonfunding participants. Total funding is low relative to the value of payments settled over CHIPS because the bilateral and multilateral netting feature of the system allows for a high leverage of liquidity compared to a pure real-time gross settlement system, where payments are settled individually as they are submitted.

(B) Aggregate exposure of CHIPS to its counterparties

Credit exposures. There are no credit exposures within CHIPS, and there is no obligation to ensure the settlement of queued payments. Payment messages are not settled until they are released from the CHIPS queue, and all payment messages that are released are fully funded and settled with finality in real time.

Liquidity exposures. CHIPS does not bear liquidity exposures to its counterparties because it does not guarantee settlement of any payment messages that are not fully funded. While this feature, which is inherent to the design and rules of CHIPS, eliminates liquidity risk to the system, participants bear liquidity risk arising from unsettled payments in the queue. Participants are further exposed to liquidity risk because the funds used to settle payment messages over CHIPS are held in the CHIPS account at FRBNY as opposed to in the participants' own accounts.

Liquidity exposures for CHIPS participants are high because payment messages in the CHIPS queue are not guaranteed to settle. There is a possibility that participants may not receive, either during the day or at the end of the day, payments they are expecting to receive over CHIPS. This risk decreases over the course of the day because of the intraday finality of settled payments, but there is inherent liquidity risk in the end-of-day process, when participants must meet their final funding requirements and CHIPS must successfully execute payouts.

Settlement of the payments remaining in the queue at the end of the day is dependent on all participants successfully meeting their final funding requirements, which, on average, is in the billions of dollars. If some participants do not fulfill their final funding requirement, CHIPS will settle as many remaining payments as possible and then delete the rest from the system unsettled. There has been only one instance where a participant failed to meet its final funding requirement, resulting in payment messages worth $7.3 billion failing to settle over CHIPS.

Since that disruption, the typical value of the payments settled at the end of the day has fallen to less than 1 percent of total daily value, yet that amount is still sizeable. If a large proportion of those payments failed to settle because of a disruption caused by the failure of one or more participants to make a final pay-in, it could put liquidity pressure on the intended recipients of those payments, which would need to make up that liquidity outside of CHIPS. Following the completion of final funding, a disruption impairing the ability of CHIPS to make payouts could trigger more significant disruptions to the liquidity positions of participants. In 2011, the daily average and peak of total CHIPS payouts at the end of the day were significant.

Under either disruption scenario, participants might have to borrow funds in the market late in the day to replace the payments or payouts not received in order to meet their payment obligations outside of CHIPS or Federal Reserve account balance requirements such as required reserves. This could be particularly challenging for a participant with more limited access to U.S. dollar funding markets, such as a bank in a weakened condition. For any participant, obtaining replacement funding late in the day could prove difficult or costly, as the liquidity of funding markets such as the Fed funds and repo markets declines toward the end of the business day.

(C) Relationships, interdependencies, or other interactions of CHIPS with other FMUs or payment, clearing, or settlement activities

The structure of participation in CHIPS indicates a tight, interdependent network of institutional relationships and payment flows, such that a disruption could reverberate throughout the financial system. Participants rely heavily on CHIPS to settle significant U.S. dollar financial flows each day, including transactions related to third-party activity for thousands of additional institutions. Activity underlying CHIPS payments spans foreign exchange, trade finance, remittance, correspondent banking, securities, and bank funding.

Concentration of participants and degree of tiering. CHIPS activity is highly concentrated with a small number of participants accounting for a relatively large percentage of the value of the payment messages sent and received. Funding for CHIPS is further concentrated with a small number of participants representing a majority of the funding.

Although no FMUs depend on CHIPS directly, the participants that send and receive the most value over CHIPS and contribute the most funding are also some of the most active participants by value in CLS Bank, DTC, FICC, NSCC, CME, ICE Clear Credit, and OCC. The liquidity problems caused by a disruption to CHIPS might therefore adversely affect the payment activities of CHIPS participants over those FMUs. Conversely, payment obligations arising within those other FMUs that were expected to settle over CHIPS could be disrupted.

Interdependencies indirectly link CHIPS not only to other FMUs and payment, clearing, and settlement activities, but also to the third-party customers that are the originators or beneficiaries of payments settled over CHIPS. Participants submit a majority of their CHIPS traffic by volume on behalf of one of thousands of third-party customers. Examples of third-party customers include affiliates and branches of CHIPS participants, other financial institutions, and nonfinancial corporations. Because of the scope and nature of these customers, a disruption to CHIPS could have a broader impact on both the financial system and the real economy than might be assumed from consideration of only the direct participants.

(D) Effect that the failure of or disruption to CHIPS would have on critical markets, financial institutions, or the broader financial system

Market effects of a failure of or long-term disruption to the functioning of CHIPS. There are two types of disruption to CHIPS that could have significant effects on critical markets, financial institutions, and the broader financial system. First, a disruption triggered by the failure of one or more participants to make a required pay-in at the end of the day could cause several billion dollars of payments not to settle over CHIPS, creating liquidity shortfalls for some participants and their customers late in the day. Second, a disruption triggered by an operational problem with CHIPS could cause significantly higher amounts of payments not to settle over CHIPS. An operational disruption could also cut off participants' access to the funds in the CHIPS account, which could be a significant amount by the end of the day.

The typical value of the payments settled at the end of the day is sizeable and varies based on market conditions and the amount of supplemental funding contributed by participants during the day. If one or more participants failed to make a required pay-in at the end of the day, a portion of those payments would not settle over CHIPS. As a result, the participants and their customers expecting to receive those payments would need to make them up outside of CHIPS and could, therefore, face liquidity shortfalls late in the day.

In the case of an operational disruption to CHIPS, participants could use the Fedwire Funds Service to settle payments. Their ability to do so would depend

on each participant's access to Fedwire, internal system capabilities, and access to sufficient intraday liquidity. In particular, the availability of liquidity varies by institution, such that some participants might need access to additional liquidity in order to reroute their CHIPS traffic. At a minimum, that increased liquidity demand could create incentives for participants to delay sending large outgoing payments over Fedwire until they first received large incoming payments. Delayed settlement of those outgoing payments could in turn delay the settlement of all downstream payments reliant on those funds, likely causing liquidity problems to spread.

Effects of a short-term disruption to the FMU. Depending on its timing, an operational disruption to CHIPS could leave participants without access to the increasingly significant amounts of liquidity held in the CHIPS account. As discussed under Consideration (B), the value of funds held in the CHIPS account rises steadily throughout the day, with the funds returned to participants as payouts at the end of day. A disruption that prevented CHIPS from making payouts at the end of the day could cause significant liquidity shortages for participants at a time of day when liquidity in funding markets may be least available. This is particularly true for the subset of CHIPS participants that do not have access to intraday credit from a Federal Reserve Bank. These participants might need to seek funding in the Fed funds and repo markets, where, as discussed previously, liquidity declines towards the end of the business day. Further, liquidity in these markets would likely be especially tight under the stressed market conditions surrounding a failure of or disruption to CHIPS. Without this funding late in the day, participants might not be able to meet their payment obligations outside of CHIPS or meet Federal Reserve account balance requirements, such as reserve requirements.

Under either scenario, a disruption to CHIPS could reverberate throughout the financial system, affecting the thousands of institutions worldwide that may be reliant on payments settled over CHIPS. As discussed under Consideration (A), CHIPS settles a sizeable overall share in the U.S. large-value payments market. Furthermore, a significant portion of the volume of payment messages sent over CHIPS is sent or received on behalf of one of thousands of third-party customers. In addition to disrupting third-party customers, as discussed under Consideration (C), a disruption to CHIPS might also indirectly disrupt other FMUs in the U.S. financial sector through the channel of shared participants.

Conclusion

Large-value payment systems such as CHIPS play a key role in financial markets by providing a means for banks to discharge payment obligations related to important financial market activities. CHIPS is a particularly large system, settling $1.6 trillion on average a day representing a significant percentage of the value of the U.S. dollar large-value payment market. A disruption to CHIPS could significantly increase the amount of unsettled payments in the CHIPS queue, disrupt the ability of participants to manage their CHIPS traffic, and sufficiently alter the payment and funding patterns over CHIPS so as to cause liquidity disruptions affecting all participants, including 22 global systemically important institutions, and potentially spread to their customers and to other FMUs and

the broader financial system. The resulting widespread liquidity shortage could prove difficult or costly to ameliorate, particularly if the disruption were to cut off access to the funding in the CHIPS account and to occur at the end of the day amid already stressed market conditions.

Taking into consideration the significant value and proportion of large-value payments that settle over CHIPS, the increased liquidity required to reroute those payments to settle outside of CHIPS, and the risk to other FMUs and downstream financial institutions and nonfinancial companies that rely on those payments to settle, it is the assessment of the Council that a failure of or disruption to CHIPS could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that PaymentsCo should be designated as a systemically important FMU pursuant to Title VIII of the Act.

B. CLS Bank International

Description of CLS Bank International

CLS Bank, a legal person chartered by the Board of Governors of the Federal Reserve System under the Edge Act, operates a multilateral system that settles foreign exchange (FX) transactions among its financial institution members.[5] Therefore, CLS Bank meets the definition of FMU set out in Title VIII of the Act.[6]

The FX market is one of the largest and most liquid global financial markets with an average aggregate daily value settled of 8.0 trillion U.S. dollar equivalent (USDE).[7] The FX market plays a pivotal international role in determining the relative value of a currency, providing liquidity to the international banking system, and facilitating cross-border trade and investment. Because of its importance, the FX market has long been a focus of attention by finance ministries, central banks, and banking supervisors.

The FX market is an over-the-counter (OTC) market with globally dispersed participants that connect local trading centers into a liquid, global market. The three largest trading centers are located in the United Kingdom, the United States, and Japan respectively, although a number of other countries also host major centers. Due to the dispersion of market participants, the FX market is also a 24-hour market with large volumes of cross-border transactions. The three major instruments in the FX market are spot, forward, and FX swaps, which collectively account for approximately 94 percent of FX market activity. These instruments are typically considered part of the short-term international money market, serving as critically important cross-currency funding tools for a wide variety of participants. Settlement risk is the primary risk in the FX market and is a key source of systemic risk.

CLS Bank is the sole multi-currency settlement system of its kind, offering both liquidity savings and settlement risk mitigation across all major currencies, and the only one that operates on a global basis across all the major currencies.[8] CLS Bank settles an average daily value of 4.77 trillion USDE, representing 68

percent of FX market activity in CLS Bank-eligible currencies and products. The CLS Bank system links thousands of institutions, including many of the largest banks, investment companies, and nonfinancial corporations, both domestic and foreign. Through CLS Bank, these institutions are able to reduce their settlement risk in the FX market through the use of payment-versus-payment (PVP) settlement.[9] CLS Bank is also used by and uses a number of other FMUs to settle multi-currency payment flows. Among other potential effects, a failure of or disruption to the functioning of CLS Bank could substantially increase participants' liquidity risk and reintroduce significant settlement risk among institutions in the FX market.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed by CLS Bank

CLS Bank settles a significant and increasing volume and value of activity in the FX market. Through its services, CLS Bank significantly reduces settlement risk and provides substantial liquidity savings through its use of multilateral net funding. If the volumes and values settled by CLS Bank continue to grow, CLS Bank's role in the FX market, and market participants' reliance on CLS Bank, will become even more significant.

Settlement volumes and values. CLS Bank estimates that it settles, by value, 68 percent of FX market activity in eligible currencies and products. In 2011, CLS Bank settled an average daily gross volume of 820,600 sides and an average aggregate daily value of 4.77 trillion USDE. In addition, through PVP settlement, CLS Bank mitigated a substantial amount of the settlement risk associated with the average daily gross volume settled. In 2011, CLS Bank settled a peak daily gross volume of 1,957,417 sides; on its peak settlement value day, March 19, 2008, CLS Bank settled approximately 10.3 trillion USDE.

In 2011, U.S. dollar transactions settled at CLS Bank accounted for a substantial amount of the average daily gross settlement volume and the average aggregate daily settlement value. In addition, U.S.-based settlement members accounted for a significant portion of the average aggregate daily value settled in 2011 at CLS Bank.

In 2011, the volume and value of transactions settled at CLS Bank increased by 4.7 percent and 15.5 percent, respectively, from 2010. Since 2007, the volume of transactions processed by CLS Bank has grown at a compound annual rate of 22 percent, with U.S. dollar transaction volumes growing at a compound annual rate of 23 percent. In addition, since 2007, the value of transactions processed by CLS Bank has grown at a compound annual rate of 7.3 percent, with the value of U.S. dollar transactions growing at a compound annual rate of 7.2 percent. In comparison, from 2007 through 2010, the total value of the FX market grew at a compound annual rate of 3.7 percent.

Funding. Members fund and defund their multi-currency accounts at CLS Bank through 17 real-time gross settlement (RTGS) systems, including the Federal Reserve's Fedwire Funds Service for U.S. dollar payments. Funding occurs on a multilateral net basis, which provides substantial netting efficiencies. In order to

smooth out the liquidity needs of its members, CLS Bank permits its members and their nostro agents to pay in over a five-hour funding window.

B) Aggregate exposure of CLS Bank to its counterparties

Although CLS Bank has a robust risk management framework, it is still exposed to significant credit and liquidity risk.

Credit exposures. CLS Bank may extend credit to its members in the form of haircut-adjusted short positions, which are collateralized by a member's long positions and capped at the aggregate short position limit (ASPL) for each settlement member. ASPLs vary among members based on an assessment of each member's credit, liquidity, and operational capabilities.[10]

Based on the ASPL for each settlement member, CLS Bank's maximum potential credit exposure is in the billions of USDE.[11] Though these exposures are collateralized by haircut-adjusted long positions, as a result of extreme exchange rate volatility, CLS Bank may have insufficient liquidity and incur financial losses, which it would allocate to its surviving members.

Liquidity exposures. In the event that a settlement member fails to pay in the currency required to cover a short position by the end of the funding window, CLS Bank will attempt to swap the failing member's remaining long positions for the currency required to fulfill CLS Bank's payout obligations. As a result, CLS Bank has obtained committed lines of liquidity across the 17 currencies that are eligible for settlement. U.S. dollar liquidity is provided by a group of U.S. depository institutions, each of which is also a settlement member.

In the case of a single member pay-in failure, the peak liquidity that CLS Bank would require from its committed liquidity providers is equivalent to the maximum ASPL. Provided that its currency haircuts are sufficient to mitigate market risk, CLS Bank's committed lines of liquidity should be sufficient to complete payouts in the appropriate currency, even if the failing member is a liquidity provider in the required currency. However, if CLS Bank's currency haircuts are insufficient to absorb a significant depreciation in the value of the members' long positions relative to the value of their short positions, CLS Bank's liquidity needs may exceed its committed liquidity lines, and CLS Bank may incur financial losses. Further, in the event that its liquidity providers are unwilling or unable to provide the committed liquidity, CLS Bank will credit its affected member(s) in an alternate currency, which its members may choose to receive as a payout or hold overnight at CLS Bank, thereby shifting liquidity risk to its member(s) and potentially resulting in liquidity disruptions to U.S. and foreign financial markets.

C) Relationships, interdependencies, or other interactions of CLS Bank with other FMUs or payment, clearing, or settlement activities

CLS Bank settlement activity is highly concentrated amongst its largest members. In addition, CLS Bank is highly interconnected with a number of other FMUs and trade repositories. These relationships and interdependencies increase the

potential for a disruption at CLS Bank to spread to other participants, FMUs, markets, and throughout the U.S. financial system.

Concentration of participants and degree of tiering. The value of instructions settled by CLS Bank is highly concentrated among the largest of its 63 members. Further, third-party settlement activity is highly concentrated among a group of members. Since the value of instructions settled in CLS Bank is highly concentrated, a disruption to one large member would have a significant impact on the risks faced by CLS Bank (see factor (D) for the impact of a failure to pay by one or more participants). However, the inclusion of the largest FX market participants in CLS Bank ensures that a significant proportion of the FX market is settled at CLS Bank using its PVP risk mitigating features.

In 2011, 27 of CLS Bank's 63 members were active in submitting instructions on behalf of third parties, though the majority of activity was concentrated among a few institutions. In aggregate, third-party transactions represent approximately 11 percent of the aggregate value settled by CLS Bank. In addition, the three largest U.S.-based third-party service providers account for more than 48 percent of total third-party activity.

Dependencies of other FMUs and trade repositories on CLS Bank. CLS Bank settles non-PVP instructions for The Warehouse Trust Company's Trade Information Warehouse (TIW), which is a subsidiary of DTCC, as well as the CME, ICE Clear Europe, Eurex, and LCH.Clearnet. Specifically, CLS Bank settles FX futures-related payments for the CME and ICE Clear Europe, and credit derivative-related payments for TIW, Eurex, and LCH.Clearnet. Settlement at CLS Bank provides operational and funding efficiencies for these FMUs and trade repositories. The link with the TIW is particularly notable, as it allows payments for OTC credit derivatives, which are calculated and bilaterally netted across participants, to be directly submitted for settlement at CLS Bank.

D) Effect that the failure of or disruption to CLS Bank would have on critical markets, financial institutions, or the broader financial system

A failure of or long-term disruption to CLS Bank may significantly increase settlement risk and liquidity demands in the FX market. In turn, these developments may reduce FX market activity and the flow of funds in U.S. and foreign financial markets and to the broader economy.

Market effects of a failure of or long-term disruption to the functioning of CLS Bank. In addition to potentially transmitting credit risk to its members via loss allocation, a failure of or long-term disruption to CLS Bank may result in a reversion to non-PVP settlement and therefore reintroduce significant credit risk to the FX market. Because CLS Bank is the sole global multi-currency settlement system that eliminates FX settlement risk across all major currencies, a failure of or long-term disruption to CLS Bank would require members to settle FX transactions through non-PVP settlement arrangements, including bilateral gross settlement, bilateral net settlement, and "on-us" settlement. A reversion to non-PVP settlement arrangements could reintroduce a substantial amount of settlement risk to the FX market daily. As a result, members would initially

experience a sudden increase in settlement risk that may significantly exceed counterparty settlement limits set by their internal credit risk management function and may have to suddenly and drastically reduce their trading activity to stay under prudent counterparty settlement limits. Alternatively, members would need to collect large amounts of collateral from counterparties or accept significantly higher levels of counterparty credit risk that may exceed their capital.

A reduction in trading activity would reduce the flow of funds between CLS Bank participants, including domestic and foreign banks, investment companies, and nonfinancial corporations, and would impair FX market liquidity. As FX instruments are typically considered part of the short-term international money market, a reduction of FX market liquidity would seriously disrupt cross-border funding markets. As a result, the impact of a failure of or long-term disruption to CLS Bank would be felt in U.S. and foreign financial markets, as well as in the broader economy. Further, in the absence of PVP settlement, a failure of an FX market participant would expose counterparties to significant credit risk that could lead to additional failures of, or an erosion of confidence in, other FX market participants. In addition, because CLS Bank settles transactions both directly and indirectly for thousands of institutions, including banks, investment companies, and nonfinancial corporations, the failure of CLS Bank or a disruption of its settlement services could have a crippling impact on international trade with adverse second-order effects on the real economy and U.S. financial stability.

In the absence of CLS Bank and multilateral net funding in the FX market, members would be required to provide additional liquidity to complete settlement, thereby increasing liquidity demands on market participants. As such funding may occur in stressed market conditions and require access to large and alternative sources of liquidity at short notice, there could be significant liquidity disruptions to financial markets. In particular, since the U.S. dollar accounts for a substantial percentage of settlement value at CLS Bank, demands for additional U.S. dollar liquidity may be substantial and could have a significant impact on major U.S.-based banks and the U.S. financial system. Assuming that members revert to bilateral gross settlement in the absence of CLS Bank, liquidity needs would increase substantially, therefore providing another incentive for members of CLS Bank to significantly reduce their trading activity and the flow of funds between CLS Bank participants.

In addition to a reduction in FX market activity and an increase in liquidity demands, the absence of CLS Bank would require that non-PVP settlement arrangements absorb an additional average daily volume of 795,000 sides. A sudden increase in the volume of non-PVP transactions, however, may result in immediate operational challenges due to capacity constraints, potentially preventing a significant volume of FX transactions from settling in a timely fashion and thereby spreading liquidity risk among participants and their counterparties. Further, to the extent that a failure of or disruption to the functioning of CLS Bank results in non-PVP settlement, the relevant RTGS systems would experience sudden increases in the volume and value of instructions settled. In the United States, for example, the Fedwire Funds Service

and CHIPS may be required to absorb a significant amount in additional U.S. dollar payment activity daily.

CLS Bank also provides settlement of payments related to credit derivatives and FX futures for multiple FMUs, both domestic and foreign. These FMUs benefit from funding efficiencies and straight-through processing by settling at CLS Bank and, in the short term, the absence of CLS Bank would be disruptive to these FMUs, as they would have to reroute payments over the relevant RTGS systems. Based on data compiled by the Federal Reserve Board, the U.S.-based members of CLS Bank are also members in several other FMUs. In the event that CLS Bank is unable to complete settlement and these members are unable to obtain timely settlement of their payment instructions through alternative settlement arrangements, liquidity disruptions may be transmitted to other key FMUs and markets.

Effects of a short-term disruption to the FMU. In the event that an operational, market, or funding-related event results in a short-term disruption to CLS Bank, CLS Bank would be required to defer settlement, but may be able to complete settlement before the end of the settlement day. Settlement, however, is heavily dependent on the closing times of the RTGS systems used to transfer funds to and from members' multi-currency accounts at CLS Bank and may require an extension of the operating hours of certain RTGS systems on which CLS Bank is dependent. Further, CLS Bank currently estimates that the largest single settlement member pay-in failure (in terms of its aggregate impact on the settlement of transaction at CLS Bank) would result in a significant percentage of transactions not settling. As a result, members would need to settle these transactions on a non-PVP basis outside of CLS Bank, thereby increasing the amount of settlement risk in the FX market significantly. In a pay-in failure situation, however, surviving members would receive additional pay-in calls, which, if met, would significantly reduce the value of unsettled transactions at CLS Bank.

In the event of a large single member default, CLS Bank could issue additional pay-in calls across the surviving members to fund additional liquidity.[12] As such funding may occur in stressed market conditions and require access to large and alternative sources of liquidity at short notice, there could be significant liquidity disruptions to financial markets. Further, as most additional funding will occur in U.S. dollars when U.S. markets are closed (between 3 a.m. and 6 a.m. ET), the impact on the financial system of the United States could be more severe.

The peak liquidity that CLS Bank could require from its committed liquidity providers is equivalent to the maximum ASPL. Provided that its currency haircuts are sufficient to mitigate market risk, CLS Bank's committed lines of liquidity should be sufficient for CLS Bank to satisfy its payout obligations in the appropriate currency, even if the failing member is a liquidity provider in the required currency. However, if additional members fail to fully satisfy the additional pay-in calls that result from the original pay-in failure, then CLS Bank's liquidity needs may exceed its committed liquidity lines. As a result, CLS Bank may be unable to meet its payout obligations, in which case it would pay an equivalent amount in an alternate currency and transfer its liquidity risk to its members.

Conclusion

CLS Bank is the sole global multi-currency settlement system of its kind, offering both liquidity savings and settlement risk mitigation across all major currencies. A failure of or long-term disruption to CLS Bank would have negative effects on both its members and the FX market, resulting in significant credit, liquidity, and operational disruptions. These effects would likely spill over into U.S. and global financial markets, as the FX market is critical to meeting cross-currency funding needs of global financial institutions. Further, PVP settlement in the FX market continues to be encouraged by central banks, market regulators, and other authorities in order to reduce settlement risk. Should the growth in the values and volumes settled by CLS Bank persist, perhaps due to the continued growth of the FX market and the inclusion of additional participants, settlement currencies, and settlement sessions, CLS Bank will assume an even more dominant role in the FX market. In the absence of alternative settlement arrangements offering both settlement risk mitigation and liquidity savings across a similar set of FX products and currencies, CLS Bank's expansion will reduce overall risk but also concentrate the risk associated with a potential disruption to or failure of CLS Bank.

Based on the significant values and volumes of FX market activity settled at CLS Bank, the extensive network of financial and nonfinancial institutions that depend on CLS Bank, the dependence of other critical FMUs on CLS Bank to effect settlement, and the lack of substitutes offering both settlement risk mitigation and liquidity savings, the Council has determined that CLS Bank should be designated as a systemically important FMU pursuant to Title VIII of the Act.

C. Chicago Mercantile Exchange, Inc.

Description of Chicago Mercantile Exchange, Inc.

CME is a subsidiary of CME Group, Inc. (CME Group), a public company. CME, through its U.S. clearing division (CME Clearing), provides clearing services among futures commission merchants (which are included in the definition of financial institution in Section 803 of the Act) and between futures commission merchants (FCMs) and customers. Therefore, CME meets the definition of FMU set out in Title VIII.[13]

CME is one of the largest central counterparty clearing services providers in the world, clearing 96 percent of the entire market for U.S. futures, options on futures, and commodity options.[14] CME clears all contracts traded on the designated contract markets (DCMs)[15] owned by CME Group, namely the Chicago Mercantile Exchange (CME DCM), Board of Trade of the City of Chicago, Inc. (CBOT), the New York Mercantile Exchange (NYMEX), and the Commodity Exchange, Inc. (COMEX). In addition, CME offers clearing services for the global OTC market through, *inter alia*, CME ClearPort.

CME provides central counterparty clearing services for futures, options, and swaps that can be used by market participants for a variety of purposes. Products cleared by CME range from commodity futures, which are essential to price discovery and liquidity for the underlying commodities, to interest rate swaps (IRS) and equity index contracts, which can be used as hedges or as investments

themselves. CME clears the largest and most liquid futures contracts based on the Standard & Poor's (S&P) 500 Index, Eurodollar, U.S. Treasury securities, and energy products, as well as IRS. CME functions as the central counterparty to market participants and clears a large number of transactions supported by significant collateral. As a central counterparty, CME stands between its members for every transaction cleared, serving as the seller to every buyer and the buyer to every seller. In effect, members substitute CME's credit for each other's credit.

While the purpose of the contracts cleared by CME can vary, all such contracts initially expose the participants on both sides of the contract to credit risk. By guaranteeing to each counterparty that the other side of the contract will be fulfilled, CME acts as a central counterparty to mitigate such risks. CME collects margin from each of its clearing members to offset the risks of a clearing member's contracts and nets margin calls across all of each member's contracts. On average, CME clears contracts with a notional value in the trillions of U.S. dollars and maintains collateral deposits averaging in the billions of U.S. dollars.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed by CME

Number of transactions processed, cleared or settled. In 2011, CME cleared an average daily gross volume in the millions of futures and options contracts and average daily notional amounts in the millions of U.S. dollars for OTC CDS and OTC USD IRS; in the millions of euros for OTC euro IRS; and in the millions of pound sterling for OTC GBP IRS. CME cleared a peak daily gross volume in the millions of contracts and peak daily notional amounts in the billions of U.S. dollars of OTC CDS and OTC USD IRS, in the billions of euros of OTC euro IRS, and in the billions of pound sterling of OTC GBP IRS.

Value of transactions processed, cleared or settled. In 2011, CME cleared contracts with an average daily gross notional value in the trillions of U.S. dollars and average daily gross notional values in the millions of U.S. dollars of OTC CDS; millions of U.S. dollars of OTC USD IRS; millions of euros of OTC euro IRS; and millions of pounds sterling of OTC GBP IRS. The peak daily gross value of the contracts CME cleared was in the trillions of U.S. dollars for futures and options, billions of U.S. dollars for OTC CDS, billions of U.S. dollars for OTC USD IRS, billions of euros for OTC euro IRS, and billions of pound sterling for OTC GBP IRS.

Value of other financial flows. For all listed derivatives, except cleared OTC IRS and cleared OTC CDS, the average daily flow of funds (average daily variation margin plus change in average daily initial margin) in 2011 was in the billions of U.S. dollars, with a peak in the billions of U.S. dollars on August 8, 2011. The peak daily open interest was in the millions of U.S. dollars on August 25, 2011.

B) Aggregate exposure of CME to its counterparties

Credit exposures. The period-end aggregate value of all collateral posted as of December 30, 2011, was in the billions of U.S. dollars. On December 30, 2011, the member guaranty fund requirement across all three guaranty funds was $4.5 billion, CME designated capital across the guaranty funds was $300.0 million,

and the consolidated initial margin requirement was billions of U.S. dollars. For 2011, CME's guaranty fund held average deposits of $3.8 billion, with a peak value of $4.5 billion.

CME maintains minimum coverage of 99 percent for a liquidation period of one day for futures, 99 percent for a liquidation period of five days for OTC IRS, and 99 percent for a liquidation period of five days for OTC CDS.

The average aggregate daily value of collateral (after haircuts) posted to CME was in the billions of U.S. dollars. The peak aggregate dollar value of collateral (after haircuts) posted to CME was in the billions of U.S. dollars on June 2, 2011. For the 12 months ended December 30, 2011, the average intraday variation margin at CME was in the billions of U.S. dollars. The peak intraday variation margin at CME for all listed derivatives, excluding cleared OTC IRS and cleared OTC CDS, was in the billions of U.S. dollars on September 22, 2011.

For the 12 months ended December 30, 2011, the average daily value of initial margin at CME was in the billions of U.S. dollars. The peak daily value of initial margin at CME was in the billions of U.S. dollars on June 1, 2011.

It is anticipated that with the introduction of mandatory clearing for swaps, clearing volume and open interest will significantly increase, and margin on deposit and exposure will increase proportionally.

Liquidity resources. On December 30, 2011, the amount of liquidity resources (including only cash and U.S. Treasury and agency notes) at CME was in the billions of U.S. dollars, with billions of U.S. dollars of liquidity resources on June 2, 2011. As of December 30, 2011, the total value of lines of credit from banks or others was several billion U.S. dollars.

Liquidity exposures. For the 12 months ended December 30, 2011, the average daily variation margin CME paid to clearing members was in the billions of U.S. dollars. The peak daily variation margin CME paid to clearing members was in the billions of U.S. dollars on August 8, 2011. The largest intraday variation margin collect was in the billions of U.S. dollars on October 27, 2011.

C) Relationships, interdependencies, or other interactions of CME with other FMUs or payment, clearing, or settlement activities

Participants. CME has a total of 64 clearing members, including futures commission merchants (some of which are also broker-dealers), bank affiliates, and proprietary trading firms. Twenty-nine of CME's clearing members are foreign clearing members (including U.S. operations of non-U.S. entities). CME's clearing members include some of the largest banking and brokerage firms in the world.

Other FMUs. CME has a cross-margining agreement with OCC, which is dually registered as a Derivatives Clearing Organization (DCO) and as a securities clearing agency. The average amount of margin subject to the cross-margining agreement is in the millions of U.S. dollars. CME also has a cross-margining arrangement with FICC, which generated a savings of millions of U.S. dollars

on December 30, 2011 for clearing firms. In addition, CME has a mutual offset arrangement with Singapore Exchange Ltd. The mutual offset arrangement with Singapore Exchange Ltd. enables market participants to open a futures position in one of the following five contracts on one exchange and liquidate it on the other: Eurodollars, Euroyen TIBOR, Yen- and Dollar-Denominated Nikkei 225 futures, and E-micro S&P CNX Nifty (Nifty 50) futures.

Trading platforms. CME provides clearing services for the CME, CBOT, NYMEX, and COMEX exchanges that are all part of CME Group. CME also provides clearing services for the Green Exchange, a DCM that offers trading in environmental futures and options, and for Eris Exchange, LLC, a DCM that offers trading in IRS futures. The Dubai Mercantile Exchange, an energy-focused commodities exchange regulated by the Dubai Financial Services Authority, clears all of its trades through NYMEX, which outsources its clearing operations to CME Clearing.

Other external service providers. CME uses the following platforms: Bloomberg, Javelin, Tradeweb, Marketwire, Icelink, CME Globex, CME Clearport, and the CME's physical trading floor. In addition, CME uses the services of the following companies: ION, Sungard, WTD, FFastFill, ATEO, and Whentech. CME also maintains settlement bank relationships.

Average daily value of flows and other transactions with key financial institutions. For the 12-month period ended December 30, 2011, the average daily value of flows with key financial institutions was in the billions of U.S. dollars.

Average daily value of trades and other transactions on key trading platforms. CME's average daily value of trades was in the millions of U.S. dollars.

D) Effect that the failure of or disruption to CME would have on critical markets, financial institutions, or the broader financial system

Role of CME in the market served. In 2011, CME cleared 96 percent of the total U.S. futures and CFTC-regulated options market volume.[16]

Availability of substitutes. While several other clearinghouses clear products that may be viewed as serving as substitutes for some of the products cleared by CME, it would be impractical, in the short term, for another clearinghouse to substitute for CME.

Concentration by product type. As mentioned, CME clears 96 percent of all U.S. futures, options on futures, and commodity options volume.

Financial Data/Metrics. On December 30, 2011, CME had in the billions of U.S. dollars in cash and cash equivalents, in the billions of U.S. dollars in government securities, in the millions of U.S. dollars in valued securities, in the billions of U.S. dollars in letters of credit, and in the millions of U.S. dollars in escrow deposits of contracts.

Clearinghouses reduce the costs and operational risks of clearing and settlement among multiple market participants by mitigating counterparty risk, settling or netting participants' obligations, or providing other clearing services or arrangements that mutualize or transfer credit risk among participants. CME houses one of the largest clearinghouses worldwide.

The primary trigger of a default by CME would be a default by one or more clearing members with extraordinary losses in excess of CME's default resources. While such a default could conceivably result from circumstances local to those members, a default scenario would more likely be associated with a disruption to the markets more generally, including scenarios such as historically extraordinary volatility, extreme changes to normal price correlations, and acute reductions in liquidity.

An alternative trigger of a default by CME would be a failure by one of its settlement banks, in particular its concentration bank, because a substantial portion of CME's financial resources, as well as those of its members, are on deposit with these banks. Thus, if those financial resources were to suddenly become unavailable, CME's operations would be adversely affected to a considerable extent.

In addition, a CME default could result from a failure to maintain a generally sound financial condition, such as a failure to maintain sufficient capital or other financial resources against its general business risk or against the risk of one or more clearing member defaults.

As discussed previously, it would be impractical, in the short term, for another clearinghouse to substitute for CME. Moreover, even if swap transactions were replaced on a bilateral basis, if the market had moved since the trades were submitted to CME, it is unclear how the original counterparties would reinstate the original bilateral transaction. In addition, it could be difficult or impossible to reinstate the original transactions bilaterally if they were made on a trading platform. Because multilateral netting reduces the exposure of a clearinghouse's members to each other, the de-netting of positions resulting from a CME default would immediately increase counterparty risk, which could have serious consequences for market participants, including exposure to credit risk and demand for collateral.

Furthermore, netting provides a market benefit in that the margin required to collateralize the exposure of a portfolio is generally smaller than collateralizing its individual components, because the prices of the portfolio's components are often correlated. Central counterparty netting is more powerful, as each member's obligations to every other member can be netted and offset.[17]

Moreover, in the bilateral market, if A wishes to neutralize, e.g., a long exposure to B, A would typically enter into a transaction with a short exposure to another counterparty, e.g., C. This would offset A's market risk, but would leave A with credit risk to each of B and C. In a cleared market, if A has cleared a transaction with a long exposure and enters into a cleared transaction with an offsetting

short exposure, those exposures would be offset, leaving A with neither market nor credit risk.

Thus, the amount of collateral posted in a set of bilateral transactions to obtain the same level of protection that could be obtained through clearing would likely increase exponentially, thereby leading to some combination of a substantial increase in required collateral (with a consequent drain in liquidity), an increase in the number and exposure of uncollateralized transactions (creating greater exposures from further failures), and a decrease in the total number of transactions that are entered into (based on a reduction of credit, which would likely have a deleterious impact on the financial activity that those transactions hedge).

In addition, any disruption in the clearing or trading of these products would likely severely impede price discovery, which would result in both a decrease in market efficiency and a loss of liquidity for these products.

Moreover, there would likely be a negative impact on any economic activity that presupposes the protection of hedging activity.[18] For example, livestock producers that do not want to take on the risk of changing prices in the cash markets may abandon production entirely if they cannot use the futures market to lock in a price ahead of actual merchandising, and those that do choose to continue production may face an uneven playing field against other competitors, thereby effectively making them not competitive in the global markets.

Similarly, a natural gas producer might use a futures contract to set a price now for gas that it will sell in the future to avoid being exposed to the possibility of lower prices. Without the protection of hedging, natural gas producers may reduce production activities to lower their price exposures. As hedging activities decrease, products become difficult to price and, without clear and competitive prices, the markets for those products become less liquid. As liquidity decreases in a market, market participants will likely demand additional collateral and, as the amount of available capital decreases, there will be an increased demand for credit, which, in an unstable market environment, will be difficult to obtain.

As positions move to the uncleared, bilateral market and are de-netted, settled and replaced, operational risks and costs would likely increase, thereby decreasing the number of reliable and readily available hedging opportunities. As a result, financial institutions and other market participants may reduce their investment activities, which could further stress the U.S. financial markets.

Finally, the contagion effect of a CME default if it were to lack sufficient resources to make timely payments obligations on variation margin could severely disrupt operations at other clearinghouses because of a crisis of confidence that interrupts the orderly functioning of the market and/or because of the impact that the loss of funds would have on an entity's ability (or willingness) to pay (1) losses owed to other DCOs, (2) increased collateral requirements for offsetting losing positions, (3) deposits in pension fund cash accounts or (4) bank financing charges. Essentially, the failure of CME would create enormous uncertainty about the status of initiated transactions as well as the financial positions of its clearing

members and their customers and could jeopardize the orderly functioning of other DCOs and the U.S. financial markets as a whole.

Conclusion

The data reviewed by the Council indicate that CME processes a significant volume of high-dollar-value transactions on a daily basis for critical U.S. markets.[19] Moreover, it is questionable whether finding a substitute for CME's products is a viable short-term solution. Accordingly, even the shortest disruption of CME could disrupt clearing for a variety of futures and options transactions and could effectively freeze the futures and options markets, thereby creating liquidity and credit problems in the U.S. futures markets. The loss of central counterparty clearing in the products CME clears would increase collateral demands exponentially, resulting in a corresponding drain of liquidity.

A CME failure could also have an adverse impact on price discovery, which could, in turn, lead to inefficient markets and a correlated increase in liquidity problems. Finally, the contagion effect of a CME failure could impose material financial losses on CME's clearing members and other market participants (such as customers) and could lead to increased liquidity demands and credit problems across financial institutions, especially those that are active in the futures and options markets. Where these financial institutions are active in multiple U.S. markets, this contagion effect would have a broader impact and, as the markets experience growing stress, would likely lead to increased demand for credit, which would, in turn, likely lead to less liquidity. Thus, the Council believes that a significant disruption or failure of CME could have a major adverse impact on the U.S. financial markets, the impact of which would be exacerbated by the limited number of clearing alternatives currently available for the products cleared by CME. Accordingly, a failure or disruption of CME would likely have a significant detrimental effect on the liquidity of the futures and options markets, clearing members, which include large financial institutions, and other market participants, which would, in turn, likely threaten the stability of the broader U.S. financial system.

For the reasons set out here, the Council has determined that CME should be designated as a systemically important FMU pursuant to Title VIII of the Act.

D. The Depository Trust Company

Description of The Depository Trust Company

DTC is an FMU as defined in Title VIII of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and DTC.[20]

DTC serves as the central securities depository (CSD) for substantially all corporate and municipal debt and equity securities available for trading in the United States. DTC is a wholly owned subsidiary of DTCC and is generally administered as an industry-owned utility on an at-cost basis.

DTC provides depository services and asset servicing for a wide range of security types such as money market instruments (MMIs), equities, warrants, rights, corporate debt and notes, municipal bonds, government securities, asset-backed securities (ABS), and collateralized mortgage obligations. DTC's custodial services include the safekeeping, record keeping, book entry transfer, and pledge of securities among its participants. DTC substantially eliminates the physical movement of securities by providing book-entry deliveries of securities, which transfer the ownership of securities electronically among broker-dealers on behalf of the beneficial owners of the securities. In addition to processing book-entry transfers, including those trades cleared through the NSCC, DTC provides services to securities issuers, such as maintaining current ownership records and distributing payments to shareholders. In 2011, DTC maintained custody and ownership records for approximately $39.5 trillion in securities.

DTC has 298 full service members and 72 limited service members. DTC members include U.S. broker-dealers, U.S. and non-U.S. banks or trust companies (including a trust company having limited powers), non-U.S. CSDs, U.S. government-sponsored enterprises (GSEs), and FRBNY. DTC direct participants include some of the largest banks in the world by asset size, and include affiliates of 25 of the 29 financial institutions considered to be globally systemically important.[21] Trades that DTC settles for NSCC are executed on more than 50 trading venues (including all U.S. securities exchanges and alternative trading systems) and with other domestic and foreign clearing agencies.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed through DTC

In 2011, DTC processed millions of book-entry securities deliveries and settled transactions with a substantial value. Average daily gross volume was 804,502 deliver orders, payment orders, and pledges, with an average daily gross transaction value of approximately $573 billion. The peak daily gross number of transactions processed by DTC in 2011 was 1.24 million on June 29, 2011. In 2011, the average daily gross value of transactions processed by DTC was $573 billion, $339 billion of the total being MMIs and $234 billion of the total being other securities. The peak daily gross value of transactions processed by DTC in 2011 was equal to $728.8 billion on August 12, 2011.

The average aggregate credit balance paid to participants as a result of the day's settlement activity in the end-of-day cross-endorsed DTC-NSCC settlement was equal to $32.8 billion in 2011, with a peak aggregate credit balance payment of $78.3 billion on August 1, 2011. The average daily value of scheduled payments of dividend and principal and interest (P&I) payments due on DTC-eligible securities in 2011 was $10.1 billion. The peak daily value of these P&I payments in 2011 was $41.0 billion.

B) Aggregate exposure of DTC to its counterparties

DTC is the central securities depository for the United States and is responsible for the safekeeping, custody, and certain ownership records of $39.5 trillion of securities as of December 31, 2011. As of December 31, 2011, total contributions to DTC's participants fund equaled approximately $1.76 billion. The participants

fund is available to secure participants' obligations and certain liabilities of DTC, should they occur, such as when a participant fails to perform required payment or securities delivery obligations. DTC's participants fund supports the clearance and settlement of a substantial portion of all corporate and municipal debt, equity securities, ABS, exchange-traded funds (ETFs), and MMIs available for trading in the United States.

DTC extends intraday credit to its participants by allowing them to have net funds debit balances, which helps to facilitate the settlement process. These net debits are capped at a maximum of $1.8 billion per legal entity and $3 billion per affiliated family of participants. Through the various processes described here, DTC requires all transactions to be fully collateralized by its participants and therefore considers Value at Risk (VaR) not to apply to its operations.

DTC's liquidity resources are limited to a committed, secured line of credit and the value of assets held in the participants fund—including certain assets of the defaulting participant held in anticipation of settlement. DTC's line of credit, established with a syndicate of 31 banks, totaled $1.9 billion as of December 31, 2011. DTC also maintained uncommitted credit lines totaling Can$150 million with a participant to support Canadian settlement during 2011. Further, a $50 million shared uncommitted credit line with NSCC and DTCC is maintained with a participant to support potential short-term operating cash requirements. In 2011, the peak liquidity exposure to a single affiliated family of counterparties was $3 billion, which is the maximum net debit limit permitted for any participant family. DTC rules require such exposures to be fully collateralized in each instance.

C) Relationships, interdependencies, or other interactions of DTC with other FMUs or payment, clearing, or settlement activities

DTC's operations and the current market structure for securities trading and clearing involve significant interdependence between DTC and other FMUs, settlement banks, clearing members, credit facility lenders, custodians, exchanges, cross-margining entities, and pricing vendors. For example, NSCC—which provides clearance, settlement, and central counterparty services for nearly all broker-to-broker equity and corporate and municipal debt trades executed on major U.S. exchanges and other equity trading venues—relies on an interface with DTC to settle obligations via the book-entry movement of securities. Throughout the day, the debits and credits in a DTC participant's settlement account are netted to calculate, at any time, the net debit balance or net credit balance for the account. At end-of-day settlement, DTC and NSCC net the settlement balances of each DTC participant that is also a member of NSCC.

DTC maintains relationships with a number of other internationally important FMUs as well. In particular, DTC has established the Canadian-Link service with CDS Clearing and Depository Services, Inc. (CDS, Inc.), which enables DTC participants to clear and settle two categories of securities transactions: (1) cross-border Canadian dollar securities transactions with participants of CDS, Inc. and (2) intra-DTC Canadian dollar securities transactions with other DTC participants. DTC also has established accounts at two non-U.S. CSDs, namely Clearstream Bank AG in Germany and SIS SegaInterSettle AG in Switzerland.

Non-U.S. CSDs with DTC accounts include: (1) CREST Nominees Ltd. (an affiliate of Euroclear) in the U.K. and Ireland; (2) Caja de Valores, S.A. in Argentina; (3) Tel Aviv Stock Exchange Clearing House (TASECH) in Israel; (4) Monte Titoli, S.p.A. in Italy; (5) Japan Securities Depository Center, Inc.; (6) Central Depository (Pte.) Ltd. in Singapore; and (7) Hong Kong Securities Clearing Company Limited. In addition, BM&F BOVESPA in Brazil and CDS, Inc. have pledgee accounts at DTC in order to receive U.S. securities collateral at DTC. Notably, however, the level of activity by CSD participants at DTC is insignificant in comparison to total DTC activity.

DTC has also formed a relationship with Omgeo, which provides global trade confirmation and trade matching systems for institutional trades. Trades by institutional investors are affirmed in Omgeo's trade confirmation and trade-matching systems, and the compared trade details are then passed on directly to DTC's settlement system for settlement on a delivery-versus-payment/receipt-versus-payment (DVP/RVP) basis.

D) Effect that the failure of or disruption to DTC would have on critical markets, financial institutions, or the broader financial system

The immediate effects of a failure of or a disruption to the functioning of DTC would include a major disruption to the markets for which DTC is the central securities depository as well as financial losses for many of DTC's participants. A disruption to DTC's services would first lead to complete or partial disruption of a significant amount in gross transaction value settled by DTC and to dividend, interest, and certain principal payments made on a daily basis. Such a disruption similarly would completely or partially disrupt the additional $23.8 billion average daily net settlement obligations that NSCC's Continuous Net Settlement system instructs at DTC on behalf of NSCC and its members. The markets would be impacted further by an inability to access or trade some or all of the $39.5 trillion in securities for which DTC acts as custodian. The absence of DTC's services could also delay or prevent payment of dividends, principal, and interest to investors that own securities serviced by DTC. If a failure or disruption was triggered by losses to DTC, those losses might be shared by and cause stress to other FMUs, such as NSCC, with which it has a cross-guarantee agreement.

In addition, a failure or a disruption to the functioning of DTC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, reducing the value of household savings and corporate reserves, affecting the financing activities of corporations, destabilizing U.S. money market funds, and reducing the availability of secured credit.

Conclusion

DTC plays an important role in financial markets in particular because it holds in its custody substantially all corporate debt and equity securities available for trading

in the United States. Accordingly, a failure or disruption to the functioning of DTC could:

- Directly and negatively affect an enormous dollar value of financial assets held in custody and a substantial dollar value and volume of financial transactions in equity and debt markets;
- Impose material direct losses on participants and their customers for whom DTC acts as custodian;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. domestic equity and debt markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets and, therefore, threaten the stability of the financial system.

Accordingly, it is the assessment of the Council that a failure of or a disruption to DTC could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that DTC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

E. Fixed Income Clearing Corporation

Description of Fixed Income Clearing Corporation

FICC is an FMU as defined in Section 803(6)(A) of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and FICC.[22]

FICC plays a prominent role in the fixed income market as the sole clearing agency in the United States acting as a central counterparty (CCP) and provider of significant clearance and settlement services for cash settled U.S. Treasury and agency securities and the non-private label mortgage-backed securities (MBS) markets. FICC is a wholly owned subsidiary of DTCC and is generally administered as an industry-owned utility on an at-cost basis.

FICC is made up of two divisions, the Government Securities Division (FICC/GSD) and Mortgage Backed Securities Division (FICC/MBSD), each providing clearing services in a different portion of the fixed income market. FICC/GSD provides clearing, settlement, risk management, central counterparty services, and a guarantee of trade completion for (1) U.S. Treasury bills, notes, bonds, Treasury inflation-protected securities (TIPS), and Separate Trading of Registered Interest and Principal Securities (STRIPS); and (2) Federal agency notes, bonds, and zero-coupon securities that are book-entry, Fedwire eligible, and non-mortgage backed (collectively, U.S. government and agency securities).

FICC/GSD accepts buy-sell transactions, repurchase and reverse repos, and Treasury auction purchases in several types of U.S. government securities. In 2011, the two divisions cleared transactions valued at $1.1 quadrillion on a gross basis and $64.8 trillion on a gross basis, respectively.

FICC/MBSD is the only centralized clearing facility in the non-private label MBS market. FICC/MBSD provides clearing, netting, settlement, risk management, and pool notification services to major market participants trading in pass-through MBS issued by the Ginnie Mae (GNMA), Freddie Mac, and Fannie Mae. FICC/MBSD also processes options trades for "to-be-announced" transactions. On April 2, 2012, FICC/MBSD began providing central counterparty services and a guarantee of trade completion for MBS.

Both FICC/GSD and FICC/MBSD have relationships with more than 100 participants. FICC/GSD's members include the nation's major brokers and dealers, as well as a wide range of entities that trade U.S. government securities. FICC/GSD's direct members include some of the largest banks in the world by asset size and include affiliates of 23 of the 29 financial institutions considered to be globally systemically important.[23] FICC/MBSD's participants generally include the following: (a) banks and trust companies, (b) dealers, (c) inter-dealer brokers, (d) government securities issuers, (e) registered investment companies, and (f) unregistered investment pools.

A distinguishing characteristic of FICC is the wide range of risks it faces and its ability to manage those risks. As a CCP, FICC faces credit risk, liquidity risk, custody and investment risks, and operational risk. FICC uses a combination of risk management tools to some of these risks to ensure it can meet its obligations. These tools include (1) membership standards with regard to financial resources and operational capacity, (2) collection of collateral deposits to meet clearing fund requirements and market-to-market payments in the form of margin, and (3) close out and loss allocation procedures designed to facilitate an orderly liquidation in the event of a member default.

Another important feature of FICC is that it uses multilateral netting through which FICC/GSD and FICC/MBSD are able to reduce significantly the value of securities and payments that must be exchanged each day. A disruption to FICC could therefore have a multiplier effect on the liquidity needs of participants.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed through FICC

In 2011, FICC/GSD processed 40.5 million transactions in U.S. government and agency securities worth $1.1 quadrillion on a gross basis. Through multilateral netting, FICC/GSD reduced the value of financial obligations requiring settlement in 2011 from $1.1 quadrillion to $230 trillion. In 2011, FICC/MBSD processed MBS transactions worth approximately $64.8 trillion, which through multilateral netting was reduced in value to $3 trillion.

On an average day in 2011, FICC/GSD cleared 120,780 purchases and sales of U.S. government securities, 39,156 repo transactions, and 1,122 GCF repo

transactions, which in aggregate were reduced to 24,515 net obligations daily. The peak daily gross number of trades for these three categories was 255,241 purchase and sales, 44,238 repo transactions, and 1,636 GCF repo transactions, respectively. Peak aggregate netted obligations were 28,464 on July 29, 2011. Daily trading volume at FICC/MBSD averaged 10,556 compared sides in 2011. The daily gross number of compared sides at FICC/MBSD peaked at 30,237 on October 6, 2011.

In 2011, the average daily gross value of trades compared by FICC/GSD was $893.7 billion for sales and purchases of U.S. government securities, $1.7 trillion for repos, and $796 billion for GCF repo transactions. The average daily net value settlement in all three categories was $921 billion for FICC/GSD, and the average daily funds only settlement (FOS) was $1.0 billion. The daily gross value of sales and purchases of U.S. government securities in 2011 peaked at $1.6 trillion on August 9, 2011. For repos and GCF repo transactions, the daily gross value of trades peaked at $1.9 trillion and $1.2 trillion, respectively. These peaks occurred on August 3, 2011, and September 8, 2011, respectively. The peak total of netted transactions in 2011 for FICC/GSD was $999.4 billion on July 29, 2011, and FOS peaked at $2.6 billion on August 10, 2011. FICC/MBSD compared, on average, $284.7 billion worth of transactions each day in 2011. FICC/MBSD's comparisons of trade par value peaked at $988.2 billion on October 6, 2011.

FICC/GSD's peak increase in daily total clearing fund deposits in 2011 equaled $0.5 billion on August 10, 2011. The average daily total of funds only settlement debit was $0.3 billion, and funds only settlement debits peaked at $1.8 billion on August 10, 2011. FICC/MBSD's average daily gross mark-to-market change for 2011, including changes in average daily initial margin, was $3.4 billion, and its daily variation margin (mark to market) peaked at $10.4 billion on January 6, 2011.

B) Aggregate exposure of FICC to its counterparties

In 2011, FICC/GSD maintained a clearing fund that averaged $11.1 billion, while FICC/MBSD maintained a participants fund that averaged $7.7 billion. The sizes of these funds peaked at $25.0 billion for FICC/GSD on March 22, 2011 and $15.2 billion for FICC/MBSD on March 22, 2011. The average daily VaR estimates at a 99 percent confidence level for FICC/GSD in 2011 was $6.2 billion. The average VaR for FICC/MBSD in 2011 was $5.0 billion. All of the collateral in the two funds was held in cash and in U.S. government and agency securities.

FICC/GSD has liquidity needs for day-to-day securities settlement, daily funds settlement obligations, and in the event of member default. FICC/MBSD, by contrast, in 2011, had liquidity needs only for daily funds settlement obligations, as it did not begin acting as central counterparty until April 2012. FICC/GSD's liquidity resources include the following: (1) the cash portion of the clearing fund; (2) the cash that would be obtained by entering into repo transactions using the eligible securities portion of the clearing fund (Treasury securities, agency securities guaranteed by the U.S. government, and certain U.S. agency/GSE pass-through securities); and (3) the cash that would be obtained by entering into repos using the securities underlying transactions that would have been delivered to the defaulting member had it not defaulted. In addition, FICC/GSD

could receive funds from its cross-margining and cross-guaranty arrangements if its resources proved insufficient to cover losses stemming from a member's default. FICC/GSD does not maintain any committed lines of credit.

In 2011, FICC/GSD's peak liquidity exposure to a single counterparty totaled $111 billion. In 2011, FICC/MBSD's peak liquidity exposure to a single counterparty totaled $25 billion. This exposure was required to be covered by the settlement obligations of other FICC/MBSD participants or through use of the FICC/MBSD participants fund. For the year ended December 31, 2011, FICC/GSD had an average of $10.6 billion in liquidity resources, which was comprised of $3.7 billion in cash and $6.9 billion in U.S. Treasury and agency securities. FICC/MBSD had an average of $7.1 billion in liquidity resources in 2011, of which $3.5 billion was in cash and $3.6 billion was in U.S. Treasury and agency securities.

C) Relationships, interdependencies, or other interactions of FICC with other FMUs or payment, clearing, or settlement activities

FICC/GSD has formed relationships with other market participants to mitigate the risks attending the potential default of a mutual participant. FICC/GSD has established a cross-margining arrangement with CME, and FICC has established a multilateral cross-guaranty agreement with both the OCC and FICC's affiliates, NSCC and DTC, to cover certain obligations of a common defaulting member to the extent of available resources of the member. FICC/GSD has also formed a relationship with NYPC, a U.S. futures clearing corporation, to allow joint clearing members to cross-margin certain positions cleared at FICC/GSD with certain positions cleared at NYPC in a "one pot" margin portfolio.

FICC/GSD has only two clearing banks, JPMorgan Chase and Bank of New York Mellon. These two entities are critically important to FICC for GCF repos and security settlement processing. FICC/GSD also relies on FRBNY, both to issue U.S. Treasury securities and to collect and pay margin deposits. Payments to and from FICC/MBSD are made via DTC's sub-account at FRBNY.

In addition, FICC's parent company, DTCC, provides significant services to FICC pursuant to a service agreement, including internal audit, corporate communications, corporate and regulatory compliance, executive services, finance, administration services, and legal services.

D) Effect that the failure of or disruption to FICC would have on critical markets, financial institutions, or the broader financial system

A failure of or a disruption to the functioning of FICC/GSD would be broad and severe. First, it could cause a complete or partial disruption of the substantial number and value of transactions typically pending to be cleared and settled through FICC/GSD in a two-day settlement cycle. Additionally, FICC/GSD members could face financial losses equal to the average net value of transactions guaranteed by FICC/GSD over the two-day settlement cycle, due to the full or partial absence of the FICC/GSD trade guarantee. These potential losses would be compounded by liquidity pressures due to at least a temporary limitation on a member's ability to access collateral in the clearing and participant funds. As

of December 31, 2011, the approximate values of such contributions were $11.1 billion for FICC/GSD and $6.5 billion for FICC/MBSD.

There would also be a disruption to new trading activity in U.S. government securities and MBS markets. Because there are no other clearing agencies providing services similar to those of FICC, trades would need to be settled on a bilateral basis.

In addition, a failure of or a disruption to the functioning of FICC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, drawing assets away from other productive uses, reducing the value of corporate reserves and household savings, destabilizing U.S. money market funds, and negatively affecting financing activities of the U.S. government and GSEs.

Conclusion

FICC plays an important role in financial markets due to the high gross notional value of the trades FICC/GSD and FICC/MBSD clear and the efficiencies they provide through multilateral netting of trades and payments among their members. In particular, because FICC/GSD is the sole clearing agency in the United States acting as a central counterparty for cash-settled U.S. government and agency securities, and FICC/MBSD is the predominant provider of clearance and settlement services for U.S. MBS markets, a failure or disruption to the functioning of FICC could:

- Directly and negatively affect an enormous dollar value and volume of financial transactions in the U.S. government securities and MBS markets;
- Impose material direct losses on FICC counterparties and create new demands for liquidity and new credit problems among financial institutions and others that rely on such markets for credit or liquidity;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. government and MBS markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets and, therefore, threaten the stability of the financial system.

Accordingly, it is the assessment of the Council that a failure of or a disruption to FICC could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that FICC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

F. ICE Clear Credit LLC

Description of ICE Clear Credit LLC

ICE Clear Credit is a Delaware limited liability company and an indirect subsidiary of Intercontinental Exchange, Inc., a Delaware corporation. ICE Clear Credit provides central counterparty clearing services to direct participants that are financial institutions, as well as to indirect market participants (customers). Therefore, ICE Clear Credit is an FMU as set out in Title VIII of the Act.[24]

ICE Clear Credit clears a majority of the CDS products in the United States that are eligible for clearing by a central counterparty. ICE Clear Credit currently clears 46 North American CDS contracts (Index Contracts), 132 single-name components of North American CDS contracts (Single-Name Contracts), and four foreign sovereign CDS contracts (Sovereign Contracts).[25] Specifically, ICE Clear Credit clears all of the active North American CDS indices for the 5-year and 10-year tenors, and—save for certain financials—the most liquid U.S. single names in the CDS market. Of the products that are accepted for clearing by ICE Clear Credit, as of December 31, 2011, ICE Clear Credit cleared approximately 66 percent of all bilateral trades where both the buyer and the seller are ICE Clear Credit clearing participants. In addition, ICE Clear Credit is currently the only clearinghouse worldwide that clears foreign sovereign CDS. Since 2009, ICE Clear Credit has cleared over 300,000 CDS transactions whose notional value is in the trillions of U.S. dollars.[26]

ICE Clear Credit has a total of 27 clearing members, 14 of which are financial or banking groups and 9 of which are non-U.S. domiciled. ICE Clear Credit's clearing members include some of the largest financial institutions designated as G-SIFIs by the Financial Stability Board.

Irrespective of whether a CDS is being used to hedge risk or take on exposure to certain credit markets, as a bilateral contract between two market participants, a CDS creates credit and liquidity risk exposure between the counterparties to the CDS contract. For centrally cleared CDS contracts, ICE Clear Credit reduces these risks by serving as a central counterparty, interposing itself between the two original bilateral counterparties. Additionally, ICE Clear Credit improves market transparency and functioning by establishing robust daily settlement prices for the CDS trades that it clears, which periodically its members are required to stand behind, as well as monitoring and reporting open positions among clearing members.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed by ICE Clear Credit

Number of transactions processed, cleared or settled. In 2011, ICE Clear Credit cleared an average daily gross volume of 821 Index Contracts, 1,145 Single-Name Contracts, and 397 Sovereign Contracts. ICE Clear Credit cleared a peak daily gross volume of 7,222 Index Contracts, 14,708 Single-Name Contracts, and 5,680 Sovereign Contracts.

Value of transactions processed, cleared or settled. In 2011, ICE Clear Credit cleared contracts with an average daily gross notional value in the billions of dollars in each of Index Contracts, Single-Name Contracts, and Sovereign Contracts. The peak daily gross notional values of the contracts ICE Clear Credit cleared were in the hundred billion dollar range for each of Index Contracts, Single-Name Contracts, and Sovereign Contracts.

Value of other financial flows. For all listed derivatives, the average daily flow of funds (average daily mark-to-market valuation plus change in average daily initial margin) was in the millions of dollars for initial margin and in the hundred million dollar range for adjusted mark-to-market, and for all intraday fees (adjusted mark-to-market, upfront fee, coupon plus credit event). The peak daily flow of funds was over a billion dollars for initial margin and in the hundreds of millions of dollars for adjusted mark-to-market and for all intraday fees (adjusted mark-to-market, upfront fee, coupon plus credit event). The peak daily open interest was in the hundreds of billions for each of Index Contracts and Single-Name Contracts, and in the tens of billions of dollars range for Sovereign Contracts.

B) Aggregate exposure of ICE Clear Credit to its counterparties

Credit exposures. During 2011, the average size of ICE Clear Credit's guaranty fund was in the billions of U.S. dollars, with a peak size of billions of U.S. dollars.

It is anticipated that following the implementation of a clearing requirement for swaps, clearing volume and open interest will significantly increase, and margin on deposit and exposure will increase proportionally.

Liquidity resources. The average amount of liquidity resources (including only cash and U.S. Treasury and agency notes) at ICE Clear Credit was billions of U.S. dollars, with a peak amount in the billions of U.S. dollars. As of December 31, 2011, the total value of lines of credit from banks or others was millions of dollars.

Liquidity exposures. The average aggregate daily dollar value of payouts by ICE Clear Credit to clearing members was in the millions of U.S. dollars, with a peak in the millions of U.S. dollars. The peak liquidity need with a single counterparty was in the millions of U.S. dollars.

C) Relationships, interdependencies, or other interactions of ICE Clear Credit with other FMUs or payment, clearing, or settlement activities

Participants. ICE Clear Credit has a total of 27 clearing members,[27] 14 of which are financial or banking groups and 9 of which are non-U.S. domiciled. ICE Clear Credit's clearing members include some of the largest banking and brokerage firms in the world.

Other FMUs. ICE Clear Credit does not have any relationships with other FMUs, other than its affiliate relationships.

Trading platforms. ICE Clear Credit clears OTC swaps (all cleared CDS transactions are executed bilaterally) and therefore does not have a relationship with any trading platforms. However, it is expected that ICE Clear Credit will

begin clearing transactions executed on DCMs or swap execution facilities with the commencement of CDS trading through such venues.

Other external service providers. ICE Clear Credit uses The Clearing Corporation for license fee and management services and ICE for technology and management services.

Average daily value of flows and other transactions with key financial institutions. ICE Clear Credit does not have any flows with unaffiliated key financial institutions other than its clearing members, settlement banks, and repo counterparties.

Average daily value of trades and other transactions on key trading platforms. ICE Clear Credit clears OTC swaps and therefore does not have a relationship with any trading platforms.

Average daily value of services provided and other transactions with other external service providers not captured. ICE Clear Europe uses ICE Clear Credit for technology and management services.

D) Effect that the failure of or disruption to ICE Clear Credit would have on critical markets, financial institutions, or the broader financial system

Role of ICE Clear Credit in the market served. In 2011, of the North American Index and Single-Name CDS market CDS products that ICE Clear Credit accepts for clearing, ICE Clear Credit cleared approximately 66 percent of all bilateral trades where both the buyer and the seller are ICE Clear Credit Clearing participants. It is also the only clearinghouse worldwide that clears foreign sovereign CDS.

Availability of substitutes. Currently, no other DCOs clear the breadth of products cleared by ICE Clear Credit. Accordingly, it is impracticable to expect that one could continue clearing ICE Clear Credit's CDS products immediately or in the short term following a disruption of ICE Clear Credit's operations.

Concentration by product type. ICE Clear Credit is currently the only clearinghouse worldwide that clears foreign sovereign CDS. In addition, ICE Clear Credit clears all of the active North American CDS indexes for the 5-year and 10-year tenors, and—save for certain financials—the most liquid U.S. single names in the CDS market.

Financial Data/Metrics. On December 30, 2011, ICE Clear Credit had in the billions of U.S. dollars in cash and cash equivalents and in the billions of U.S. dollars in government securities.

ICE Clear Credit reduces systemic risk in the CDS market in a number of ways. First, ICE Clear Credit lowers counterparty risk exposures among market participants through the novation of CDS contracts. Second, ICE Clear Credit lowers the likelihood of a default leading to a financial contagion of defaults across major CDS counterparties by maintaining substantial financial resources to manage the default of its two largest clearing members. Third, ICE Clear

Credit reduces credit, liquidity, and operational risk by facilitating the timely settlement of trade-related payment obligations. ICE Clear Credit is one of the largest clearers of CDS transactions worldwide.

The primary trigger of a default by ICE Clear Credit would be a default by one or more clearing members with extraordinary losses in excess of ICE Clear Credit's default resources. While such a default could conceivably result from circumstances local to those members, a default scenario would more likely be associated with a disruption to the markets more generally, including scenarios such as extreme volatility, extreme changes to normal price correlations, and acute reductions in liquidity. ICE Clear Credit may be more exposed to such circumstances than other central counterparties, because it has significant exposure to credit default swaps, which have jump-to-default risk.

An alternative trigger of a default by ICE Clear Credit would be a failure of its settlement bank or one of ICE Clear Credit's overnight reverse repo counterparties, because a substantial portion of ICE Clear Credit's financial resources are on deposit with such entities. Thus, if those financial resources were to suddenly become unavailable, ICE Clear Credit's operations would be adversely affected to a considerable extent. In addition, an ICE Clear Credit default could result from a failure to maintain a generally sound financial condition, such as a failure to maintain sufficient capital or other financial resources against its general business risk or against the risk of one or more clearing member defaults.

An ICE Clear Credit failure, or a disruption in the functioning of its clearing services, would effectively mean the immediate loss of the dominant clearing platform for the credit default products it clears. This disruption would likely expose ICE Clear Credit's clearing members and other market participants to credit and liquidity risks. The significant margin deposits held by ICE Clear Credit could lead to a period wherein affected entities may be unable to access, or in a worst case scenario would lose, the collateral they posted with the clearinghouse. Furthermore, if ICE Clear Credit does not have sufficient financial resources to satisfy its obligations to surviving market participants, the ability of those participants to meet other financial obligations could be adversely impacted. An ICE Clear Credit failure or disruption of its services could directly pose credit and liquidity risk to other financial market infrastructures, which include depositories, other clearinghouses, custodians, DCMs, trade repositories, and swap execution facilities. Since many of ICE Clear Credit's clearing members are G-SIFIs, a disruption or failure could indirectly pose credit and liquidity issues to every major market in the United States, every significant market participant in the United States, and all significant financial market infrastructures in the United States.

In the event of an ICE Clear Credit failure, it is unlikely in the short term that a substitute could take over ICE Clear Credit's clearing operations. Moreover, market participants would have to post substantially more collateral to enter into transactions in a bilateral space and obtain the same level of protection or exposure than they would through ICE Clear Credit. For example, in the bilateral market, if A wishes to neutralize, e.g., a long exposure to B, A

would typically enter into a transaction with a short exposure to another counterparty, e.g., C. This would offset A's market risk, but would leave A with credit risk to each of B and C that A would need to collateralize. Furthermore, the margin required to collateralize the exposure of a portfolio is generally smaller than collateralizing its individual components because the prices of the portfolio's components are often correlated. Central counterparty netting is more powerful, as each member's obligations to every other member can be treated as one portfolio that is netted and offset.[28] There could also be an increase in the number and exposure of uncollateralized transactions (creating greater exposures from further failures) and a decrease in the total number of transactions. This would likely have a deleterious impact on the financial activity that relates to those transactions.

In addition, any disruption in the clearing of these products would likely impede the price discovery benefit of central counterparty clearing, which would result in a decrease or loss of liquidity for these products and lead to market opacity. Large aggregate exposures to counterparties under CDS contracts could be hidden in opaque markets until the bankruptcy of a major CDS market participant is imminent. The circumstances of such an event, which figured prominently in the recent U.S. financial crisis, could have additional consequences on the ability of U.S. financial institutions to obtain credit. Bank lending could freeze until such time as market participants' CDS exposure can be adequately priced and it becomes clear market participants are able to honor contract obligations in a stressed financial environment.

Furthermore, not only would price discovery and liquidity be impacted by such an event, but there also would likely be a negative impact on any economic activity that presupposes the protection of hedging activity. Assume, for example, that a large U.S. based financial institution (FI1) hedged its exposure to the corporation A corporate bonds it purchased by buying CDS protection from another financial institution, and the trade was then cleared at ICE Clear Credit. If any of ICE Clear Credit's members default and ICE Clear Credit does not have, and cannot obtain, sufficient financial resources to maintain operations, this CDS protection would no longer be active. If corporation A were then to suddenly default, FI1 could have a large loss on the corporation A bonds; a loss that, but for ICE Clear Credit's failure, should have been hedged by the CDS. As positions move to the bilateral market and are de-netted, settled, and replaced, operational risks and costs would likely increase, thereby decreasing the number of reliable and readily available hedging opportunities. As a result, financial institutions and other market participants may reduce their investment activities, which could further stress the U.S. financial markets.

In addition, an ICE Clear Credit failure or disruption would pose a substantial adverse impact to the CDS market for the products cleared by ICE Clear Credit. Market participants would likely experience substantial uncertainty around, and possibly outright loss of their CDS positions at ICE Clear Credit. Market participants would no longer be able use CDS to manage credit risk without increasing bilateral counterparty credit risk. This, in turn, is likely to cause a loss of confidence in the CDS market in general. For holders of the debt of

reference entities to CDS, those participants may be forced to sell large amounts of securities at potentially fire-sale prices if their CDS protection ceases to exist. Market participants that transact with any reference entity and use CDS to hedge credit risk may be forced to reduce or cease financial and other transactions with those entities. Banks or other users of index CDS as broad-based, macroeconomic hedges to credit risk may need to quickly sell securities or reduce lending activity in order to comply with capital requirements in the absence of CDS hedging benefits. Market participants that use sovereign CDS to hedge direct exposures to those countries, indirect exposures to entities domiciled in those countries or overall country risk may be forced to quickly sell securities and reduce or cease financial and other transactions with those entities. All of these effects represent the substantial risk of contagion from a disruption in the CDS market.

Finally, the contagion effect of an ICE Clear Credit default, if it were to lack sufficient resources to make timely payments for mark-to-market obligations, could severely disrupt operations at other clearinghouses because of a crisis of confidence that interrupts the orderly functioning of the market and/or because of the impact that the loss of funds would have on an entity's ability (or willingness) to pay (1) losses owed to other DCOs, (2) increased collateral requirements for offsetting out-of-the money positions, (3) deposits in pension fund cash accounts, or (4) bank financing charges. Essentially, the failure of ICE Clear Credit would create enormous uncertainty about the status of initiated transactions, as well as the financial positions of its clearing members and their customers, and could jeopardize the orderly functioning of clearing members, other DCOs, and the U.S. financial markets as a whole.

Based on its review of the information set forth here, the Council recognizes that ICE Clear Credit currently clears a specific range of the total credit derivatives market.[29] ICE Clear Credit also has a membership of 27 clearing members, including 14 financial or banking groups. Accordingly, when viewed narrowly the effects of a failure or disruption of ICE Clear Credit could be considered to affect a finite number of the world's largest financial institutions, each of which has, theoretically, immediate access to the bilateral markets for CDS products and various other sources of credit and liquidity in the event of such a failure or disruption.

However, the immediate loss of a clearing platform for most of the products cleared by ICE Clear Credit would effectively lead to at least a temporary disruption of the CDS market for these products as the market infrastructure through which positions are established, maintained, and closed out would be gone. This, together with the increased risks and costs in the bilateral markets, would create great uncertainty about the capacity of already strained markets to accommodate any anticipated corresponding liquidity needs, which would likely lead to increased credit and liquidity problems for market participants. As these risks and costs increase, institutions may reduce their investment activities due to a lack of reliable and readily available hedging opportunities, which could further stress the U.S. financial markets.

Moreover, under rules recently promulgated by the CFTC[30] and equivalent rules being considered by the SEC pursuant to the Act, ICE Clear Credit will likely be required to expand its membership base to include smaller financial institutions and permit the direct involvement of buy-side firms for the first time. These new regulatory standards will also result in numerous financial institutions being required to clear trades with other financial institutions when clearing is offered by one or more FMUs and thereby increase their practical reliance on ICE Clear Credit in a manner consistent with the policy direction established by the Act. Thus, and especially upon these new standards taking effect, a failure or disruption of ICE Clear Credit would necessarily involve a broader segment of the financial community and have a wider impact on the financial system of the United States than would have been true in the recent past. These more widespread effects reinforce the Council's conclusion that a failure or disruption to the functioning of ICE Clear Credit could create or increase the risk of liquidity and credit problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States.

Conclusion

The data reviewed by the Council indicate that ICE Clear Credit processes high-dollar-value transactions on a daily basis for critical U.S. financial markets[31] and holds large amounts of collateral on deposit. Coupled with the unique nature of CDS and the attendant jump-to-default risk that has to be managed, as well as the size and nature of ICE Clear Credit's clearing members, a significant disruption to or failure of ICE Clear Credit could create instability in the U.S. CDS and securities markets. Moreover, there are currently no substitute DCOs for many of ICE Clear Credit's products. The loss of central counterparty clearing in the products ICE Clear Credit clears would increase collateral demands exponentially, resulting in a corresponding drain of liquidity.

An ICE Clear Credit failure could also have an adverse impact on price discovery, which could, in turn, lead to inefficient markets and a correlated increase in liquidity problems. Finally, the contagion effect of an ICE Clear Credit failure could impose material financial losses on ICE Clear Credit's clearing members and other market participants (such as customers) that could lead to increased liquidity demands and credit problems across financial institutions. Where these financial institutions are active in multiple U.S. markets, this contagion effect would have a broader impact and, as the markets experience growing stress, would likely lead to increased demand for credit, which would, in turn, likely lead to less liquidity. Thus, the Council believes that a significant disruption or failure of ICE Clear Credit could have a major adverse impact on the stability of the U.S. financial markets, the impact of which would be exacerbated by the lack of clearing alternatives currently available for many of the products cleared by ICE Clear Credit. Accordingly, a failure or disruption of ICE Clear Credit would likely have a significant detrimental effect on the liquidity of the swaps markets and impose significant financial losses on clearing members, which include large financial institutions and other market participants, which would, in turn, likely threaten the stability of the broader U.S. financial system.

For the reasons set out here, the Council has determined that ICE Clear Credit should be designated as a systemically important FMU pursuant to Title VIII of the Act.

G. National Securities Clearing Corporation

Description of National Securities Clearing Corporation

NSCC is a FMU as set out in Title VIII of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and NSCC.[32]

NSCC plays a prominent role in providing clearance, settlement, and CCP services for nearly all broker-to-broker equity and corporate and municipal debt trades executed on major U.S. exchanges and other equity trading venues. NSCC is a wholly owned subsidiary of DTCC and is generally administered as an industry-owned utility on an at-cost basis.

NSCC provides clearing, settlement, risk management, central counterparty services and a guarantee of completion for virtually all broker-to-broker trades involving equity securities, corporate and municipal debt securities, American depository receipts (ADRs), ETFs, and unit investment trusts (UITs). Clearance and settlement generally occurs through NSCC's Continuous Net Settlement (CNS) system, under which all eligible compared and recorded transactions for a particular settlement date are netted by issue into one net long (buy) or net short (sell) position. NSCC guarantees the settlement of matched trades and, as a CCP, is the legal counterparty to all of its members' net settlement obligations. NSCC's CCP services reduce its members' costs and risks associated with securities transfers. In 2011, NSCC, on a gross basis, cleared 20.9 billion equity, corporate and municipal bond, ADR, ETF, and UIT trades worth $220.7 trillion on a gross basis.

NSCC has 187 full service members and 647 limited service members. NSCC members consist of registered broker-dealers, or banks or trust companies (including a trust company having limited powers) that are members of the Federal Reserve System or are supervised and examined by state or federal authorities having supervision over banks or registered clearing agencies. NSCC direct members include some of the largest banks in the world by asset size and include affiliates of 24 of the 29 financial institutions considered to be globally systemically important.[33] Trades that NSCC clears and settles for its members are executed on more than 50 trading venues for which it provides services (including all U.S. securities exchanges and alternative trading systems) and with other domestic and foreign clearing agencies.

A distinguishing characteristic of NSCC is the wide range of risks it faces and its ability to manage those risks. As a CCP, NSCC faces credit risk, liquidity risk, custody and investment risks, and operational risk. NSCC uses a combination of risk management tools to mitigate some of these risks to ensure it can meet its obligations. These tools include (1) membership standards with regard to financial resources and operational capacity, (2) collection of collateral deposits to meet clearing fund requirements and market-to-market payments in the form

of margin, and (3) close out and loss allocation procedures designed to facilitate an orderly liquidation in the event of a member default.

Another important feature of NSCC is that it uses multilateral netting through which NSCC is able to reduce significantly the value of securities and payments that must be exchanged each day. A disruption to NSCC could therefore have a multiplier effect on the liquidity needs of members.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed through NSCC

In 2011, NSCC cleared $220.7 trillion worth of trades on a gross basis, which represented nearly all broker-to-broker equity and debt trades executed on the major U.S. exchanges and most other equity trading venues.

On an average trading day in 2011, NSCC cleared 83 million securities trades. The peak daily gross number of trades in 2011 was 199 million trades on August 8, 2011, with peak netted obligations equal to 204,000 trades. The historic peak day for trades occurred on October 10, 2008, when NSCC cleared 209.4 million transactions. In 2011, the average daily gross value of transactions settled by NSCC was $883 billion, with average aggregate netted obligations of $23.8 billion. The peak daily gross value of trades in 2011 was equal to $1.9 trillion on August 8, 2011, with the peak daily netted obligation equal to $78 billion.

The average daily value of mark-to-market contributions to and distributions from NSCC's clearing fund for 2011 was $408.5 million. The peak daily value of contributions to and distributions from NSCC's clearing fund was $4.4 billion on August 9, 2011.

B) Aggregate exposure of NSCC to its counterparties

In 2011, the average daily size of the NSCC clearing fund requirement was $3.9 billion and the peak size of the NSCC clearing fund requirement was $10.2 billion (on August 9, 2011). The average daily VaR estimate at a 99 percent confidence level for NSCC in 2011 was $2.9 billion, and the peak VaR for NSCC was $6.3 billion on August 12, 2011. Using the scenario of a default of NSCC's largest participant family, NSCC's peak daily liquidity exposure to a single counterparty in 2011 was $13 billion. In 2011 the average daily value of all collateral posted to NSCC, including excess deposits, was $5.1 billion, and the peak value of all collateral posted to NSCC was $11.9 billion (on August 9, 2011). All of the collateral in the clearing fund was held by NSCC in cash and U.S. government and agency securities.

NSCC seeks to maintain sufficient liquidity to enable it to settle transactions in the default of the member-family to which NSCC has the largest aggregate settlement exposure over the three days between the time when its guarantee is issued, generally one day following the trade date (T+1), and final settlement (T+3). NSCC's liquidity resources are limited to a line of credit, its retained earnings, and the value of assets held as collateral, including certain securities of the defaulting member delivered in anticipation of settlement. NSCC's liquidity facility is a $6.2 billion committed line of credit through a syndicated loan facility.

The amount of funds available to NSCC under the committed credit facility is limited not only by the overall size of the facility, but also by the amount of assets available to NSCC to pledge as collateral to lenders supporting the facility. NSCC is also required to contribute up to 25 percent of its retained earnings in the event the clearing fund and other collateral is not sufficient to cover a loss. NSCC's retained earnings were $151 million as of December 31, 2011. For 2011, the average daily amount of NSCC's liquidity resources held in cash and U.S. Treasury and agency securities was $4.7 billion. The peak amount of such liquidity resources was $7.9 billion.

C) Relationships, interdependencies, or other interactions of NSCC with other FMUs or payment, clearing, or settlement activities

NSCC's CNS system relies on an interface with its affiliate DTC for the book-entry movement of beneficial ownership of securities through securities accounts established at DTC to settle obligations. CNS short positions (i.e., obligations to deliver) are compared against members' DTC accounts to determine issue availability. If securities are available, they are transferred from the NSCC member's account at DTC to NSCC's account at DTC. The allocation of CNS long positions (i.e., obligations to receive) to receiving NSCC members is processed in an order determined by an algorithm built into the system. Securities are automatically allocated to NSCC members' long positions as the securities are received by NSCC.

Throughout the day, the debits and credits in a DTC participant's settlement account are netted to calculate, at any time, the net debit balance or net credit balance for the account. At end-of-day settlement, DTC and NSCC net the settlement balances of each DTC participant that is also a member of NSCC. After end-of-day netting with NSCC (also known as cross-endorsement), DTC reports final figures for each DTC participant. Because each DTC participant must settle through a "Settling Bank," there is a "roll-up" for each Settling Bank which is a net-net balance payable from or to such Settling Bank. Payments are made to and from DTC's account at FRBNY through the Federal Reserve National Settlement Service System. Payments are made to and from NSCC on the National Settlement System through the FRBNY sub-account of DTC. DTC and NSCC are also parties to a netting contract and limited cross-guaranty agreement.

CDS Clearing and Depository Services Inc. (CDS, Inc.), the Canadian central securities depository and central counterparty, is a full service member of NSCC, as well as a participant of DTC. This relationship enables CDS, Inc. participants to clear and settle OTC trades with U.S. broker-dealers through sponsored accounts maintained by CDS, Inc. with DTC and NSCC and entitles them to the privileges of direct membership in both organizations. However, CDS, Inc. participants are not members of DTC and NSCC and therefore must look only to CDS, Inc. for satisfaction of clearance and settlement obligations. Thus, if a CDS, Inc. participant defaults on its obligation to DTC or NSCC, CDS, Inc. is required to meet that obligation. CDS, Inc. mitigates its exposure to potential losses by requiring participants to commit collateral to CDS, Inc. in amounts equivalent to those required as collateral by NSCC and DTC.

NSCC receives transactions on exercises and assignments of options from OCC that are cleared and settled through NSCC. NSCC and OCC rely on one another for coverage of certain risks through a Third Amended and Restated Options Exercise Settlement Agreement between them (the Accord). The arrangement is designed to facilitate the settlement of the underlying securities upon the exercise or assignment of such options by mitigating duplicative margin requirements. The Accord provides for a two-way guaranty between OCC and NSCC of the mark-to-market amounts for options transactions for which NSCC has guaranteed completion in the event of a mutual participant's failure. The failure of OCC to meet its obligations under that agreement, and vice versa, could impair the ability of the parties to ensure access to adequate margin with respect to a failing participant that is a common member of both NSCC and OCC. Additionally, there is an agreement with OCC providing for the settlement of exercises and assignments of options on securities cleared and settled through NSCC in the event of a mutual participant's failure.

In addition, NSCC's parent company, DTCC, provides significant services to NSCC pursuant to a service agreement, including internal audit, corporate communications, corporate and regulatory compliance, executive services, finance, administration services, and legal services.

D) Effect that the failure of or disruption to NSCC would have on critical markets, financial institutions, or the broader financial system

The primary effect of a failure of or a disruption to the functioning of NSCC would be a disruption to the settlement of the $3.5 trillion in notional value of transactions typically pending to be cleared and settled through NSCC on an average day. Additionally, initiating new trades would be difficult at best due to the lack of any clearing agencies offering similar services. Given the enormous efficiencies of multilateral netting provided by NSCC, bilateral settlement of transactions at current normal volumes would not be practical.

A failure of or a disruption to the functioning of NSCC would have several other likely effects. Members of NSCC could experience financial losses or liquidity shortages due to NSCC's inability to honor its central counterparty obligations and due to members' inability to access clearing fund contributions. There would also be financial and operational stresses placed on other FMUs such as DTC and OCC, which have closely related operations. Additionally, if bilateral gross settlement of NSCC-cleared trades were attempted, DTC's capacity could be overwhelmed as it experiences enormous increases in values and volumes of transactions.

In addition, a failure or a disruption to the functioning of NSCC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, drawing assets away from other productive uses, reducing the value of household savings, and affecting the financing activities of corporations and municipalities.

Conclusion

NSCC plays an important role in financial markets due to the high gross notional value of the trades NSCC clears and the efficiencies it provides through multilateral netting of trades and payments among its members. In particular, because NSCC clears and settles virtually all broker-to-broker equity and corporate and municipal debt securities transactions in the United States and supports more than 50 trading venues for which it provides services (including all U.S. securities exchanges and alternative trading systems), a failure or disruption to the functioning of NSCC could:

- Directly and negatively affect an enormous dollar value and volume of financial transactions in equity and debt markets;
- Impose material direct losses on NSCC counterparties and create new demands for liquidity and new credit problems among financial institutions and others that rely on such markets for credit or liquidity;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. domestic equity and debt markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets and, therefore, threaten the stability of the financial system.

Accordingly, it is the assessment of the Council that a failure of or a disruption to NSCC could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council determined that NSCC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

H. The Options Clearing Corporation

Description of The Options Clearing Corporation

The Options Clearing Corporation (OCC) is an FMU as defined in Title VIII of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and OCC.[34]

OCC is the predominant clearing organization for U.S. options markets. OCC provides its clearing members with clearing and settlement services that eliminate the need for individual counterparties to bilaterally exchange option premiums and collect and maintain margin on a daily basis. These services increase the speed and efficiency of trading and settlement while reducing members' operational expenses. Additionally, OCC acts as a central counterparty for certain options and other derivatives therefore reducing credit risk for its members.

OCC's clearing members serve institutional investors, professional traders, and retail customers. OCC currently has approximately 120 clearing members, which comprise some of the largest domestic and foreign financial institutions including banks, broker-dealers, futures commission merchants, investment advisers, and investment funds. OCC's members include some of the largest banks in the world by asset size and include affiliates of 17 of the 29 financial institutions considered to be globally systemically important.[35]

The primary services that OCC provides relate to the clearing and settlement of options and futures. The types of options cleared include those on equities, indices, currency, and commodities though equity options accounted for approximately 93 percent of total clearing volume. OCC is the sole issuer and settling agent for all stock options, equity index options, and single-stock futures listed on U.S. exchanges.

When OCC accepts a trade for clearing, it becomes a central counterparty for the transaction and therefore is subject to credit risk resulting from the transactions it clears. OCC mitigates the risk from these transactions by collecting margin collateral from its members and by maintaining a clearing fund. However, it is still exposed to market risk should it be necessary to liquidate collateral as well as model risk that exists relating to the methodology used to calculate margin calls.

Analysis of Systemic Importance

(A) Aggregate monetary value of transactions processed through OCC

OCC also cleared stock lending transactions covering a total of 7.3 billion shares in 2011. The dollar value and volume of options transactions handled by OCC includes substantially all of the equity options traded on U.S. options exchanges.

In 2011, OCC cleared an average daily gross volume of 18.1 million option contracts, 152,000 futures contracts and 29 million stock loan shares. The peak daily gross volume for OCC in 2011 was approximately 41.5 million option contracts, 383,000 futures contracts and 89.3 million stock loan shares. OCC's average month-end open interest for 2011 was 305 million option contracts and 960,000 futures contracts. Daily open interest peaked at approximately 386 million option contracts on August 19, 2011 and 1.2 million futures contracts on December 16, 2011.

In 2011, the average daily gross value of premium exchanged by OCC was $5.95 billion for option contracts and $1.2 billion for stock loan transactions. The peak daily gross value of premium exchanged during 2011 was $20.3 billion for options contracts and $3.1 billion for stock loan transactions, respectively. The average notional value of open interest for contracts cleared by OCC in 2011 was $3.3 trillion based on month-end data.

OCC processed an average of $1.2 billion in daily changes in initial and variation margin payments in 2011, and the peak daily initial and variation margin payments processed by OCC was $22.1 billion on August 8, 2011.

(B) Aggregate exposure of OCC to its counterparties

As of December 31, 2011, OCC held $76.3 billion in margin deposits on behalf of its clearing members, $57.3 billion of which consisted of cash and other underlying securities accepted as margin by OCC and approximately $19 billion of which consisted of equity and index option escrow deposits accepted in lieu of margin. As of December 31, 2011, OCC also maintained a clearing fund for options and futures clearing activity totaling $2.9 billion. All of the collateral in the clearing fund was held in the form of cash and U.S. Treasury securities.

In 2011, the average aggregate daily value of collateral (after haircut) posted to OCC was $89.8 billion. OCC's VaR estimate at a 99 percent confidence level was on average $15 billion in 2011, and the average collateral required to be deposited with OCC to cover that exposure was $33.6 billion. The daily average size of the OCC clearing fund in 2011 was $2.8 billion, and the remaining $53.4 billion in collateral deposits consisted of mark-to-market charges to cover changes in the value of option positions and stock and index option contracts held in escrow in lieu of margin. The average collateral coverage ratio for OCC during 2011 was 135 percent based on the ratio of valued collateral (not including option collateral held in escrow) over estimated margin requirements, using month-end data over a 12-month period. The aggregate dollar value of collateral (after haircut) posted to OCC peaked at $123.7 billion on August 9, 2011. In 2011, the peak VaR was $35.7 billion, the peak collateral requirement was $63.5 billion, and the peak clearing fund requirement was $3.4 billion.

OCC's liquidity resources include the defaulting member's collateral, the assets in the clearing fund, and a $2 billion secured line of credit.[36] The amount of funds available to OCC under the committed secured credit facility is constrained not only by the overall size of the facility, but also by the amount of assets that OCC can pledge as collateral to lenders supporting the facility, which is limited to the securities in OCC's clearing fund. OCC's bylaws give it the authority to use a defaulting clearing member's margin and clearing fund deposits to obtain temporary liquidity for purposes of meeting obligations arising out of (1) the default or suspension of a clearing member or any action taken by OCC in connection therewith or (2) the failure of any bank or any clearing organization to perform any obligation owed to OCC. In addition, OCC may use such assets to borrow or otherwise obtain funds through any means determined to be reasonable by its Chairman, Management Vice Chairman, or President of the Corporation in his or her discretion (including, without limitation, pledging such assets as security for loans and/or using such assets to effect repurchase, securities lending, or other transactions). OCC rules provide, among other things, that upon the suspension of a clearing member, OCC shall promptly liquidate, in the most orderly manner practicable, all of the clearing member's margin.

For 2011, the average amount of OCC's liquidity resources held in cash and U.S. Treasury and agency notes was $12 billion, and the peak amount of liquid resources was $25.8 billion. The peak liquidity exposure OCC experienced with a single counterparty occurred on September 19, 2011, when the exposure totaled $3 billion. OCC did not provide information regarding the average peak exposure to individual members during the course of 2011.

(C) Relationships, interdependencies, or other interactions of OCC with other FMUs or payment, clearing, or settlement activities

OCC's operations and the current market structure for listed options trading and clearing involve significant interdependence between OCC, other FMUs, settlement banks, clearing members, credit facility lenders, custodians, exchanges, cross-margining entities, and pricing vendors.

OCC maintains two active cross-margin relationships with the CME and ICE Clear U.S. OCC clearing members use these cross-margin relationships to realize the benefits of net settlement across the securities and futures markets, as well as billions of dollars of savings on clearinghouse margin requirements. OCC's average margin amount in 2011 subject to these cross-margining arrangements was approximately $2.3 billion.

OCC is party to a multilateral cross-guaranty agreement with DTC, FICC, and NSCC, which provides for the sharing of residual close-out proceeds from a defaulting member between these clearing agencies in the event that one clearinghouse is in an excess position and another is in a shortfall position. In addition, OCC maintains an agreement with NSCC that governs the loss or profit sharing resulting from the settlement of exercised or assigned options of a common defaulting member. That arrangement is designed to facilitate the settlement of the underlying securities upon the exercise or assignment of such options by mitigating duplicative margin requirements.

DTC, in its role as a securities depository, provides services to OCC clearing members, including the ability to pledge collateral held in DTC accounts to OCC for collateral purposes. The most prevalent form of collateral—valued securities—is pledged to OCC in this manner. DTC also provides the operational support for securities lending transactions to be executed in both the bilateral stock loan program and the AQS Market Loan platform.

(D) Effect that the failure of or disruption to OCC would have on critical markets, financial institutions, or the broader financial system

Should there be a failure of or disruption to the functioning of OCC, the immediate effects could be manifested in two primary forms. The first is direct financial stress placed on clearing members who would be at least temporarily unable to access margin collateral and clearing fund deposits. Additionally, there could be a complete or partial disruption of the $3.3 trillion in average notional value of open interest for which OCC is issuer and guarantor as well as a sudden decrease in options trading activity in the markets for which OCC is the sole clearing agent due to increased risk and decreased efficiency in OCC's absence. As of December 31, 2011, OCC held $57.3 billion in margin deposits on behalf of its clearing members, $2.9 billion in clearing fund deposits, and $19 billion in equity and index option escrow deposits accepted in lieu of margin. A failure of or disruption to the functioning of OCC could temporarily limit participants' access to these deposits in the short term and possibly result in losses of the $19 billion of escrow deposits.

In addition, in the event OCC is no longer available as an issuer and guarantor, options cleared and settled through OCC may have to be replaced, to the extent practicable, including through entering into transactions in the underlying instruments, with an average replacement value of approximately $3.3 trillion. In the event such a disruption were to occur, settlement of many future transactions in options contracts currently cleared by OCC could be required to occur on a bilateral basis between the parties to the respective transactions in a daily average amount of $5.95 billion. The same is true of stock loan transactions with an average daily gross value of $1.2 billion.

In addition, a failure or disruption to the functioning of OCC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, drawing assets away from other productive uses, disrupting the markets for securities and indexes underlying options cleared by OCC, reducing the value of household savings, and reducing the ability of corporations to use options to manage risks.

Conclusion

OCC is the sole clearing agency providing clearance and settlement services for U.S.-listed options. A failure or disruption of OCC could:

- Directly and negatively affect significant dollar value and volume of financial transactions in options and futures markets;
- Impose material direct losses on OCC counterparties and create new demands for liquidity and new credit problems among financial institutions and others that rely on options markets for risk management and other purposes;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. domestic options and futures markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets.

Accordingly, it is the assessment of the Council that a failure of or a disruption to OCC could increase the risk of significant liquidity or credit problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that OCC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

Glossary

Adjustable-Rate Mortgage	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 term debt instrument that is collateralized by specific financial assets, such as credit card receivables or auto loans, and that makes payments based on the performance of these assets.
Auction Rate Security (ARS)	A debt security, often issued by municipalities, in which the yield is reset regularly via a Dutch auction.
Bank for International Settlements (BIS)	An international financial organization that serves central banks in their pursuit of monetary and financial stability, helping 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 Committee on Banking Supervision (BCBS)	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.
Broad Dollar Index	A weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares.

Broker-Dealer (BD)	An entity that is engaged in the business of buying and selling securities for itself and others.
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 matching trades between the sellers and buyers of securities and other financial instruments and 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.
Collateralized Mortgage Obligation (CMO)	A type of mortgage-backed security. CMOs are bonds that represent claims to specific cash flows from large pools of home mortgages. The streams of principal and interest payments on the mortgages are distributed to the different classes of CMO interests, known as tranches, according to a complicated deal structure. Each tranche may have different principal balances, coupon rates, prepayment risks, and maturity dates (ranging from a few months to 30 years).
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 that makes payments that are based on the performance of those loans.
Commercial Paper (CP)	Short-term (maturity typically up to 270 days), unsecured corporate debt.

Committee on the Global Financial System	Monitors developments in global financial markets for central bank governors. The Committee on the Global Financial System has a mandate to identify and assess potential sources of stress in global financial markets, to further the understanding of the structural underpinnings of financial markets, and to promote improvements to the functioning and stability of these markets. The Committee on the Global Financial System also oversees the collection of the BIS international banking and financial statistics..
Committee on Payment and Settlement Systems (CPSS)	A committee of central banks hosted by the BIS that sets standards for payment and securities settlement systems.
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 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.
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 Valuation Adjustment (DVA)	A decrease in the mark-to-market value of a bank holding company's liability that is booked as a profit.
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.

Depository Institution	A financial institution that is legally permitted to accept deposits from individuals. 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.
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.
Federal Financial Institutions Examination Council (FFIEC)	An interagency body that prescribes uniform principles, standards, and report forms for the federal examination of financial institutions by the Federal Reserve, the FDIC, the NCUA, the OCC, and the CFPB. The FFIEC makes recommendations to promote uniformity in the supervision of financial institutions. The State Liaison Committee (SLC) serves as a voting member. The SLC includes representatives from the Conference of State Bank Supervisors, the American Council of State Savings Supervisors, and the National Association of State Credit Union Supervisors.
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	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.
Futures Commission Merchants (FCM)	Individuals, associations, partnerships, corporations, and trusts that solicit or accept orders for the purchase or sale of any commodity for future delivery on or subject to the rules of any exchange and that accept payment from or extend credit to those whose orders are accepted.
General Obligation 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.
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 Management	Management of the exposure of an individual's or an institution's financial condition to movements in interest rates.
International Association of Insurance Supervisors (IAIS)	International organization that represents insurance regulators and supervisors in 190 jurisdictions worldwide. The IAIS issues global insurance principles, standards and guidance papers to promote effective insurance supervision.

International Organization of Securities Commissions (IOSCO)	An international organization of securities market regulatory agencies that sets standards for securities markets.
International Swaps and Derivatives Association (ISDA)	A trade association of over-the-counter derivatives participants. The ISDA Master Agreements standardized derivative terms to simplify netting and reduce legal risks for market participants.
Investment-Grade Bond	A bond whose rating is among the highest in creditworthiness 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 be required to file regardless of size.
Leveraged Buyout	An acquisition of a company in which the buyer uses borrowed funds for a significant portion of the purchase price.
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.
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 result from 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-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.

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.
Municipal Bond	A bond issued by states, cities, counties, local governmental agencies, or certain instrumentalities of the state.
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	A credit rating agency that is registered with the SEC as a nationally recognized statistical rating organization.
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.
Payday Lenders	Lenders that make small, short-term loans to households, with the loan repayment due in full on the borrower's pay day.
Personal Consumption Expenditures (PCE)	A measurement of the goods and services purchased by households.
Personal Savings Rate	Personal savings as a percentage of disposable personal income.
Prudential Regulation	Regulation aimed at ensuring the safe and sound operation of financial institutions, set by both state and federal authorities.
Public Company Accounting Oversight Board (PCAOB)	A nonprofit corporation established by Congress that oversees the audits of public companies to protect the interests of investors and further the public interest in the preparation of informative, accurate, and independent audit reports. PCAOB also oversees the audits of broker-dealers.
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).
Q4/Q4	Fourth quarter over fourth quarter. A way of computing the rate of growth of a statistic over a calendar year by comparing the statistic's value in the fourth quarter of the year with its value in the fourth quarter of the previous year.

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.
Receiver	A custodian appointed to maximize the value of the assets of a failed institution or company and to settle the liabilities.
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.
Reserves	Funds that a depository institution holds against specified deposit liabilities.
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.
Securities Lending	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.
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.

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.
Supervisory Information	Generally refers to reports of examination and inspection, 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.
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 (TAG) Program.
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 began operating in 2009.
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 that 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.
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
ADR	American Depository Receipt
AFS	Available-for-Sale
AIFP	Automotive Industry Financing Program
AIG	American International Group
ANPR	Advance Notice of Proposed Rulemaking
ARS	Auction Rate Security
ASPL	Aggregate Short Position Limit
AUM	Assets Under Management
BAC	Bank of America
BBA	British Bankers' Association
BCBS	Basel Committee on Banking Supervision
BD	Broker-dealer
BEA	Bureau of Economic Analysis
BFI	Business Fixed Investment
BHC	Bank Holding Company
BIS	Bank for International Settlements
BLS	Bureau of Labor Statistics
C	Citigroup
C&I	Commercial and Industrial
CBO	Congressional Budget Office

CCAR	Comprehensive Capital Analysis and Review
CCP	Central Counterparty
CD	Certificate of Deposit
CDS	Credit Default Swap
CFPB	Consumer Financial Protection Bureau
CFTC	Commodity Futures Trading Commission
CHIPS	Clearing House Interbank Payments System
CICI	CFTC Interim Compliant Identifier
CLS	CLS Bank International
CMBS	Commercial Mortgage-Backed Security
CME	Chicago Mercantile Exchange
CMO	Collateralized Mortgage Obligation
CNS	Continuous Net Settlement
CP	Commercial Paper
CPP	Capital Purchase Program
CPPI	Commercial Property Price Index
CPSS	Committee on Payment and Settlement Systems
CRE	Commercial Real Estate
CSD	Central Securities Depository
CU	Credit Union
DCM	Designated Contract Market
DCO	Derivatives Clearing Organization
DOJ	U.S. Department of Justice
DTC	Depository Trust Company

DTCC	Depository Trust and Clearing Corporation
DVA	Debt Valuation Adjustment
E&S	Equipment and Software
EBA	European Banking Authority
ECB	European Central Bank
EFSF	European Financial Stability Facility
EMBI+	Emerging Markets Bond Index Plus
EME	Emerging Market Economies
ESM	European Stability Mechanism
ETF	Exchange Traded Fund
EU	European Union
FAQ	Frequently Asked Questions
FASB	Financial Accounting Standards Board
FCM	Futures Commission Merchant
FDIC	Federal Deposit Insurance Corporation
FFIEC	Federal Financial Institutions Examination Council
FFS	Federal Funds Sold
FHA	Federal Housing Administration
FHFA	Federal Housing Finance Agency
FICC	Fixed Income Clearing Corporation
FICO	Fair Isaac Corporation
FINRA	Financial Industry Regulatory Authority
FIO	Federal Insurance Office
FMU	Financial Market Utility

FOS	Funds Only Settlement
FRB	Federal Reserve Board
FRBNY	Federal Reserve Bank of New York
FSA	Financial Services Authority
FSB	Financial Stability Board
FSOC	Financial Stability Oversight Council
FX	Foreign Exchange
FXPB	Foreign Exchange Prime Brokers
G-20	The Group of Twenty Finance Ministers and Central Bank Governors
G-SIB	Globally Systemically Important Bank
GAO	Government Accountability Office
GBP	British Pound Sterling
GCF	General Collateral Finance
GDP	Gross Domestic Product
GM	General Motors
GNMA	Ginnie Mae
GS	Goldman Sachs
GSA	Green Street Advisors
GSD	Government Securities Division
GSE	Government-Sponsored Enterprise
G-SIFI	Globally Systemically Important Financial Institution
HAMP	Home Affordable Modification Program
HARP	Home Affordable Refinance Program
HFT	High-Frequency Trading

HTM	Held-to-Maturity
HUD	U.S. Department of Housing and Urban Development
IAIS	International Association of Insurance Supervisors
IASB	International Accounting Standards Board
ICE	IntercontinentalExchange
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IPO	Initial Public Offering
IRS	Interest Rate Swap
ISDA	International Swaps and Derivatives Association
JPM	JPMorgan Chase
LEI	Legal Entity Identifier
LIBOR	London Interbank Offered Rate
LSOC	Legal Segregation with Operational Commingling
LTRO	Longer-term Refinancing Operations
LTV	Loan-to-Value Ratio
MBS	Mortgage-Backed Security
MBSD	Mortgage-Backed Securities Division
MFG	MF Global
MHA	Making Home Affordable
ML LLC	Maiden Lane LLC
ML II	Maiden Lane II LLC
ML III	Maiden Lane III LLC

MMF	Money Market Fund
MMI	Money Market Instrument
MOL	Maximum Obligation Limitation
MS	Morgan Stanley
MVC	Model Validation Council
NAIC	National Association of Insurance Commissioners
NAV	Net Asset Value
NBER	National Bureau of Economic Research
NCUA	National Credit Union Administration
NDF	Non-deliverable Forward
NFIB	National Federation of Independent Business
NMS	National Market System
NPR	Notice of Proposed Rulemaking
NSCC	National Securities Clearing Corporation
NYPC	New York Portfolio Clearing
OCC	Office of the Comptroller of the Currency
OCC	The Options Clearing Corporation (only in Appendix A)
OFR	Office of Financial Research
OITP	Other Important Trading Partners
OLA	Orderly Liquidation Authority
ORSA	Own Risk and Solvency Assessment
OTC	Over-the-Counter
OTS	Office of Thrift Supervision
P&I	Principal and Interest

PCA	Prompt Corrective Action
PCAOB	Public Company Accounting Oversight Board
PCE	Personal Consumption Expenditures
PFMI	Principles for Financial Market Infrastructures
PVP	Payment-versus-Payment
Q4/Q4	Fourth Quarter over Fourth Quarter
QRM	Qualified Residential Mortgages
REIT	Real Estate Investment Trust
Repo	Repurchase Agreement
RESPA	Real Estate Settlement Procedures Act
RMBS	Residential Mortgage-Backed Security
ROA	Return on Assets
RTGS	Real Time Gross Settlement
RWA	Risk-Weighted Assets
S&P	Standard & Poor's
SCAP	Supervisory Capital Assessment Program
SEC	Securities and Exchange Commission
SEF	Swaps Execution Facility
SIFMA	Securities Industry and Financial Markets Association
SIPA	Securities Investor Protection Act
SIPC	Securities Investor Protection Corporation
SLHC	Savings and Loan Holding Company
SLOOS	Senior Loan Officer Opinion Survey
SMP	Securities Markets Programme

SRC	Systemic Risk Committee
SRO	Self-Regulatory Organization
STIF	Short Term Bank Common and Collective Investment Funds
STRIPS	Separate Trading of Registered Interest and Principal Securities
TAG	Transaction Account Guarantee
TALF	Term Asset-Backed Securities Loan Facility
TARP	Troubled Asset Relief Program
TILA	Truth in Lending Act
TIPS	Treasury Inflation-Protected Securities
TIW	Trade Information Warehouse
TLGP	Temporary Liquidity Guarantee Program
TR	Trade Repositories
UIT	Unit Investment Trust
USD	U.S. Dollar
USDA	U.S. Department of Agriculture
USDE	U.S. Dollar Equivalent
VA	Department of Veterans Affairs
VaR	Value at Risk
VRDO	Variable Rate Demand Obligations
WAL	Weighted Average Life
WAM	Weighted Average Maturity
WFC	Wells Fargo Company
WFE	World Federation of Exchanges
YTD	Year to Date

Notes on the Data

Except as otherwise indicated, data cited in this report is as of July 6, 2012.

Glossary of Certain Government Data Sources

Bank Holding Company Performance Report (BHCPR): Report of financial information produced for select top-tier bank holding companies and published by the Federal Reserve.

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 Y-9C: Consolidated financial statement for domestic bank holding companies published by the Federal Reserve.

SLOOS: Survey of senior loan officers on bank lending practices published by the Federal Reserve Board.

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Copeland, Adam M., Antoine Martin, and Michael Walker. "The Tri-Party Repo Market before the 2010 Reforms," *Federal Reserve Bank of New York Staff Reports*, 2010, No. 477.

Bech, Morten L., Antoine Martin, and James McAndrews. "Settlement Liquidity and Monetary Policy Implementation—Lessons from the Financial Crisis," *Federal Reserve Bank of New York Economic Policy Review* 18, March 2012, No. 1.

Other

List of Charts

Endnotes

Section 6

[1] Insured depository institutions, Farm Credit System institutions, Fannie Mae, Freddie Mac, and the Federal Home Loan Banks are not subject to resolution under the OLA.

[2] 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.

[3] The Council met on August 8, 2011; September 15, 2011; October 11, 2011; October 31, 2011; November 11, 2011; December 5, 2011; December 21, 2011; February 1, 2012; April 3, 2012; May 22, 2012; June 11, 2012; and July 18, 2012.

[4] The Freedom of Information Act regulation is available online at www.fsoc.gov.

[5] The transparency policy is available online at www.fsoc.gov.

Appendix A

[1] 12 U.S.C. § 5463(a) (2).

[2] 12 CFR 1320.10.

[3] See 12 U.S.C. § 5462(6).

[4] The list of globally systemically important financial institutions, as determined by the Financial Stability Board, is available at www.financialstabilityboard.org/publications/r_111104bb.pdf

[5] 12 U.S.C. § 611 *et seq.* (section 25A of the Federal Reserve Act).

[6] See 12 U.S.C. § 5462(6).

[7] See Bank for International Settlements, *Triennial Central Bank Survey, Report on global foreign exchange market activity in 2010* (Triennial Survey) (December 2010). The Bank for International Settlements reports average daily FX market turnover as 3.98 trillion USDE, which is the sum of one side of each FX transaction in 2010. For the purpose of comparability with statistics provided by CLS Bank, this value has been doubled and reported as the average aggregate daily value settled in the FX market.

[8] CLS Bank currently settles transactions in 17 currencies: the Australian dollar, British pound, Canadian dollar, Danish krone, euro, Hong Kong dollar, Israeli shekel, Japanese yen, Mexican peso, New Zealand dollar, Norwegian krone, Singapore dollar, South African rand, South Korean won, Swedish krona, Swiss franc, and U.S. dollar.

[9] By settling the two sides of an FX transaction simultaneously, on a PVP basis, CLS Bank substantially reduces settlement risk to institutions using its services.

[10] An ASPL of zero would require that settlement members prefund transactions before settlement can take place.

[11] The maximum potential credit exposure is calculated as the sum of each settlement member's ASPL and assumes that each member reaches its ASPL at the same time.

[12] Members are not required to meet all additional pay-in calls, though non-compliance may result in some of their trades not settling at CLS Bank on settlement date and would be considered a multiple member pay-in failure.

[13] See 12 U.S.C. § 5462(6). However, because DCMs are expressly excluded from the definition of an FMU (the Act specifically states that "the term 'financial market utility' does not include – (i)

designated contract markets…"), the activities of CME's designated contract markets fall outside of this definition.

[14] CFTC staff calculation based on volume (based on the number of contracts cleared). The underlying data for the calculation is taken from publicly available data compiled by the Futures Industry Association (FIA). See note 16.

[15] DCMs are CFTC-regulated markets for the trading of contracts for sale of a commodity for future delivery or commodity options. Essentially, they are boards of trade (or exchanges) that operate under the regulatory oversight of the CFTC, pursuant to Section 5 of the Commodity Exchange Act.

[16]

US Futures & Options Volume	
Number of contracts traded and/or cleared	
	2011
CME Group	3,386,986,678
ICE Futures US	107,287,467
CBOE Futures Exchange	12,040,074
Chicago Climate Futures Exchange	84,580
NYSE Liffe US	20,898,174
US Total	3,527,296,973
CME Group % of total	96%

[17] For example, a central counterparty will net member A's long exposure in oil (formerly to B) and A's short exposure in natural gas (formerly to C), in determining A's collateral requirements.

[18] Generally speaking, hedging activities result in more efficient markets and, ultimately, lower costs for consumers.

[19] The futures and options markets play critical roles in the U.S. financial system because they provide two important functions. First, market participants such as grain merchants, energy firms, and portfolio managers use futures and options to reduce the risk to their business associated with volatile prices. Second, the futures and options markets provide the economy with price discovery (meaning they help determine the price level for commodities), and because futures prices are determined by supply and demand, the prices discovered through these markets offer valuable economic information that determines how (and how much) of these commodities are produced and consumed.

[20] See 12 U.S.C. § 5462(6).

[21] The list of globally systemically important financial institutions, as determined by the Financial Stability Board, is available at www.financialstabilityboard.org/publications/r_111104bb.pdf.

[22] See 12 U.S.C. § 5462(6).

[23] The list of globally systemically important financial institutions, as determined by the Financial Stability Board, is available at www.financialstabilityboard.org/publications/r_111104bb.pdf.

[24] See 12 U.S.C. § 5462(6).

[25] This data is as of May 2, 2012. For a complete list of all of ICE Clear Credit's clearing eligible products, see www.theice.com/publicdocs/clear_credit/ICE_Clear_Credit_Clearing_Eligible_Products.xls.

[26] See ICE Surpasses $15 Trillion Milestone in Global CDS Clearing at http://ir.theice.com/releasedetail.cfm?ReleaseID=545362.

[27] As of May 10, 2012, ICE Clear Credit's clearing members were: Bank of America, N.A., Barclays Bank PLC, Barclays Capital Inc., BNP Paribas, BNP Paribas Securities Corp., Citibank N.A., Citigroup Global Markets Inc., Credit Suisse International, Credit Suisse Securities (USA) LLC, Deutsche Bank AG, London Branch, Deutsche Bank Securities Inc., Goldman, Sachs & Co., Goldman Sachs International, HSBC Bank USA, N.A., HSBC Securities (USA) Inc., JPMorgan Chase Bank, National Association, J.P. Morgan Securities LLC, Merrill Lynch International, Merrill Lynch, Pierce, Fenner

& Smith, Incorporated, Morgan Stanley Capital Services LLC, Morgan Stanley & Co. LLC, Nomura International PLC, Nomura Securities International, Inc., Société Générale, The Royal Bank of Scotland plc, UBS AG, London Branch, and UBS Securities LLC.

[28] For example, a central counterparty will net member A's long exposure in one CDS index (formerly to B) and A's short exposure in a different, but risk-related CDS index (formerly to C), in determining A's collateral requirements.

[29] According to the Bank for International Settlements, "Amounts outstanding with central counterparties…increased to about 17% of the total market at end-June 2011, after reaching 15% at end-December 2010." The BIS report is available at: www.bis.org/publ/otc_hy1111.pdf.

[30] Derivatives Clearing Organization General Provisions and Core Principles, 76 FR 69334 (Nov. 8, 2011).

[31] The CDS market plays a critical role in the U.S. financial system for financial market institutions because it facilitates lending and corporate finance activity among such participants, which can be crucial in a tight credit environment. In addition, just as equity investors use indexes (such as the S&P 500) to hedge against broad market moves, credit indexes serve a similar purpose for credit investors (protecting assets) and issuers (locking in advantageous issue levels).

[32] See 12 U.S.C. § 5462(6).

[33] The list of globally systemically important financial institutions, as determined by the Financial Stability Board, is available at www.financialstabilityboard.org/publications/r_111104bb.pdf.

[34] See 12 U.S.C. § 5462(6).

[35] The list of globally systemically important financial institutions, as determined by the Financial Stability Board, is available at www.financialstabilityboard.org/publications/r_111104bb.pdf.

[36] A portion of the clearing fund assets must be used to collateralize the secured line of credit and will not be available in addition to the credit itself if the line of credit is drawn upon.

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