

7 Potential Emerging Threats to U.S. Financial Stability

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

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

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

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

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

Disruptions in financial infrastructure can undermine confidence in financial transactions; without certainty that a payment will be delivered, or a transaction settled and cleared, financial institutions and

market participants will be reluctant to engage in transactions, even with otherwise reliable counterparties.

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

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

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

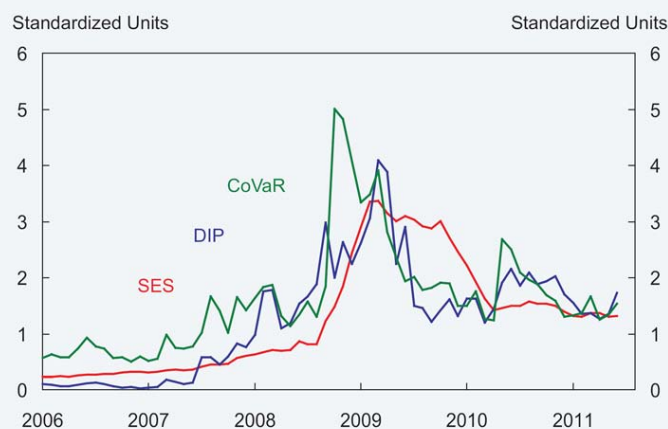
Box J: Measuring Systemic Risk

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

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

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

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



Source: FRBNY Calculations

Note: 5 largest BHCs by total assets.

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

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

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

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

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

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

7.1 Vulnerabilities and Shocks

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

on the stability and services of a particular entity.

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

7.1.1 Financial Institutions

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

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

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

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

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

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

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

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

A supervisory stress test has three key elements: (1) specification of the macroeconomic and financial market stress scenario(s); (2) a translation of the stress to capital and liquidity outcomes for individual institutions

and the broader financial system; and (3) follow-ups, which could include public disclosure of results and supervisory actions. In describing the three elements, the main focus will be on stresses that potentially affect institutions' capital cushions.

Defining the Stress

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

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

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

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

Translating the Stress to Financial Firm Outcomes

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

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

For trading and derivatives activities, the focus is on profits and losses resulting from changes in the values of institutions' trading and private equity positions, as well as potential losses stemming from changes in the size of counterparty exposures at the same time that counterparty creditworthiness is deteriorating. Depending on the institutions' trading positions and the scenario used, it is possible that some institutions might profit from particular stress scenarios. But the

breadth and severity of the global shock used in SCAP and CCAR generated significant stress losses across all firms in both exercises.

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

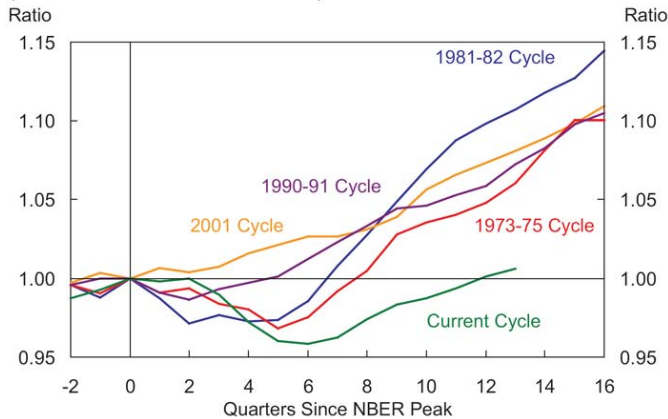
Disclosure and Supervisory Actions

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

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

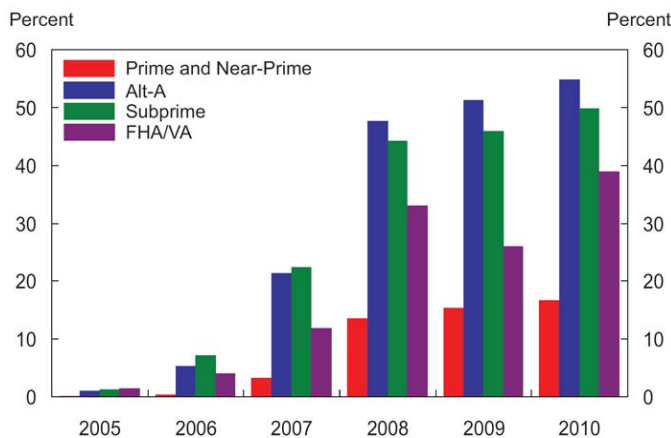
Chart 7.1.1 Real GDP Growth in Recoveries

(Series Set to 1.00 at NBER Peak)



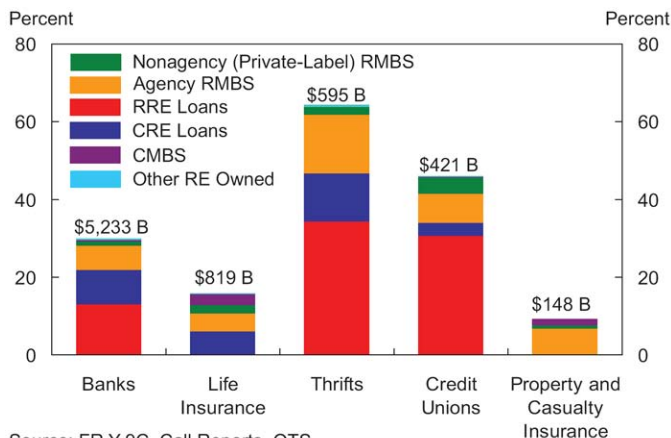
Source: BEA

Chart 7.1.2 Percent of Mortgages with Negative Equity



Source: CoreLogic and LPS

Chart 7.1.3 Real Estate Exposure as a Percent of Assets



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

Note: Exposures as of 2010:Q4.

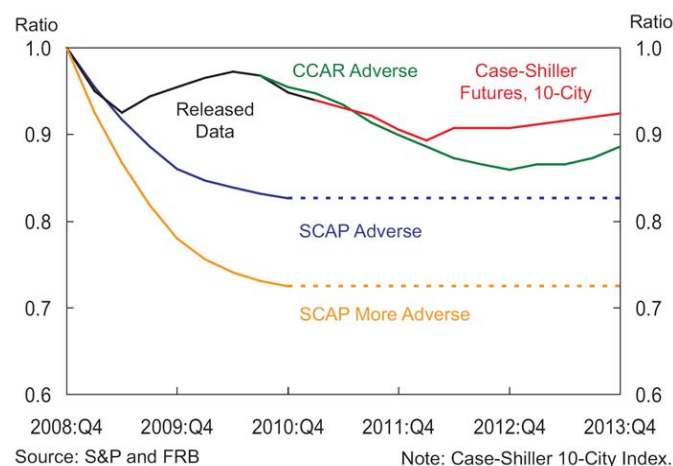
on short-term funding markets. Nonetheless, Council members are focusing on potential threats that could result from external shocks or changing dynamics in the financial system. The economic environment for financial institutions is challenging. Economic growth in the United States remains weak compared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

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

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

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

Chart 7.1.4 House Prices Under Supervisory Scenarios



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

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

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

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

Chart 7.1.5 Securities and Reserves as a Percent of Assets

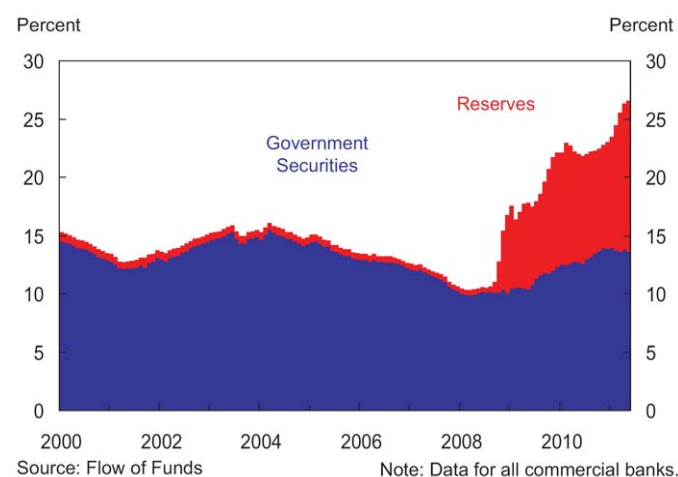


Chart 7.1.6 Large BHC Treasury and Agency Debt Holdings

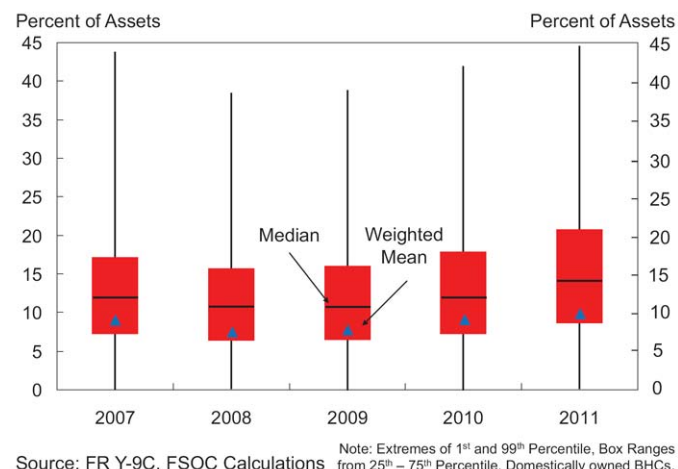
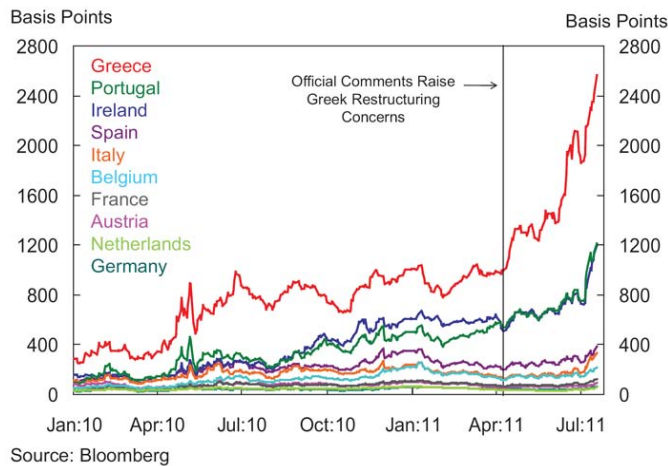


Chart 7.1.7 European Sovereign 5-year CDS Spreads



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

7.1.2 Financial Markets

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

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

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

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

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

Chart 7.1.8 Insurance Industry Exposure to Europe

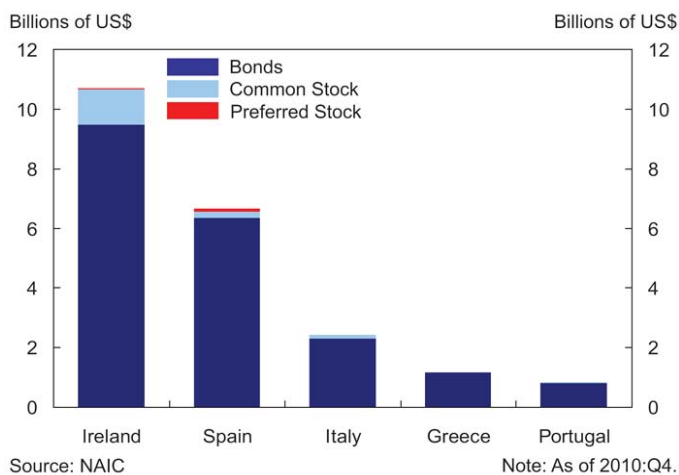
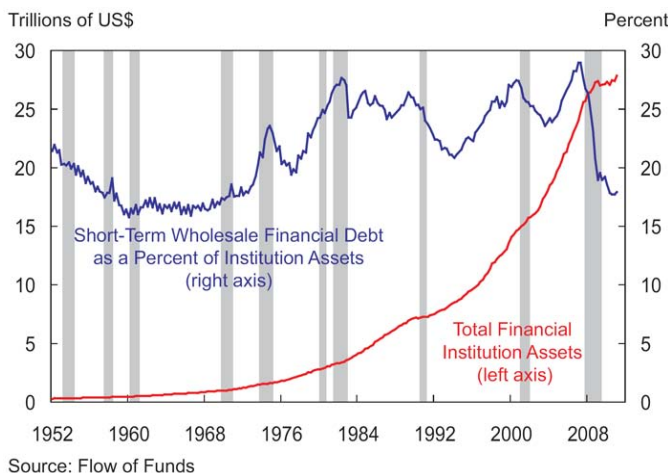


Chart 7.1.9 Short-Term Wholesale Funding



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

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

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

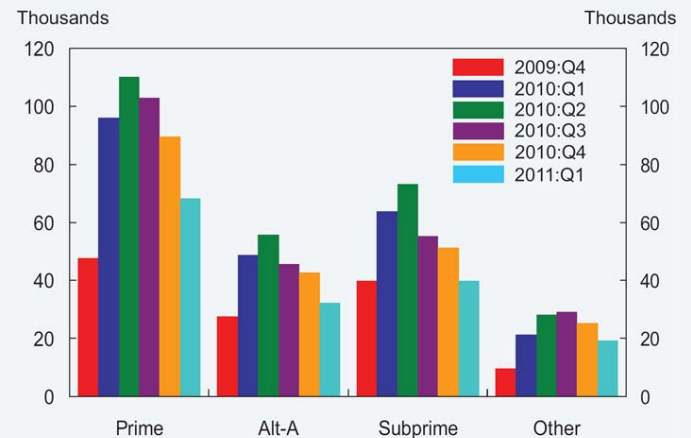
The regulatory community is now working to fill these knowledge gaps. For example, the SEC and the CFTC, responding to a Dodd-Frank Act mandate, have proposed a new confidential reporting form, Form PF, that certain private fund advisers would file with their regulators. The form requests detailed information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

Members of the Council have taken steps to improve the information available to investors about financial markets and institutions. The quarterly reporting forms filed by banks (Call Reports) and bank holding companies (Y-9C forms) now require greater detail on securities holdings, particularly of complex structured products; loan holdings, unused commitments, and the types of loans that are not performing; and derivatives and other trading activities. These forms have been revised since the crisis to include a new schedule on firms' variable interest entities and

significantly expanded schedules on firms' residential and commercial mortgage activities. The forms also address troubled debt restructurings, and the measurement of both assets and liabilities under fair value accounting standards.

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

Chart L.1 Number of New Loan Modifications



Source: OCC and OTS

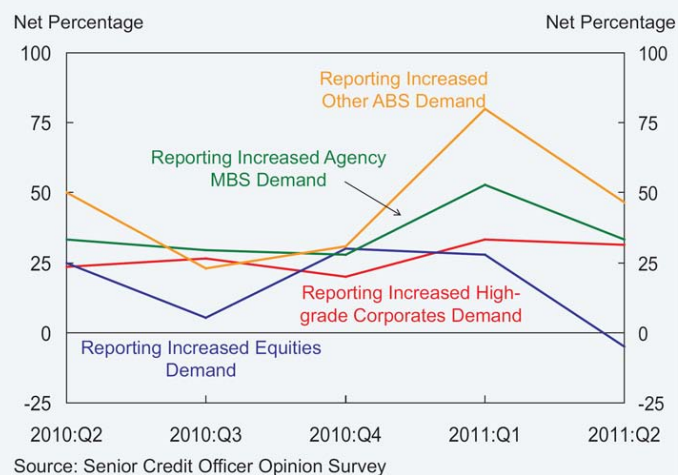
Owing to their presence in every state, state insurance, banking, and securities regulators can make important contributions to financial stability by providing information about developments or trends they are observing in institutions and markets and taking appropriate actions. For example, state securities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

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

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

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

Chart L.2 Changes in Demand for Securities Financing



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

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

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

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

The OFR has helped launch an initiative to create a global system to identify parties to financial contracts. Unique legal entity identifiers (LEIs) will increase market

transparency and benefit market participants by making it easier for them to report and evaluate aggregate exposures. LEIs will also improve the quality of supervisory and nonsupervisory data used by regulators to measure and assess risks, and will facilitate research outside the regulatory community that will promote market discipline.

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

Chart 7.1.10 Less-Stable Funding Sources at 6 Largest BHCs

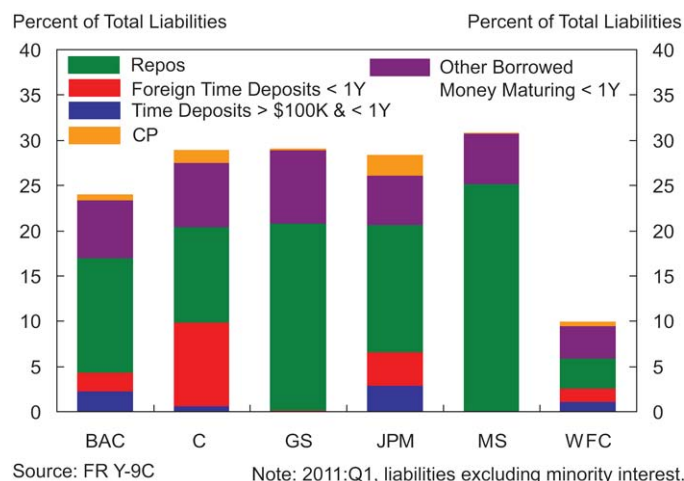
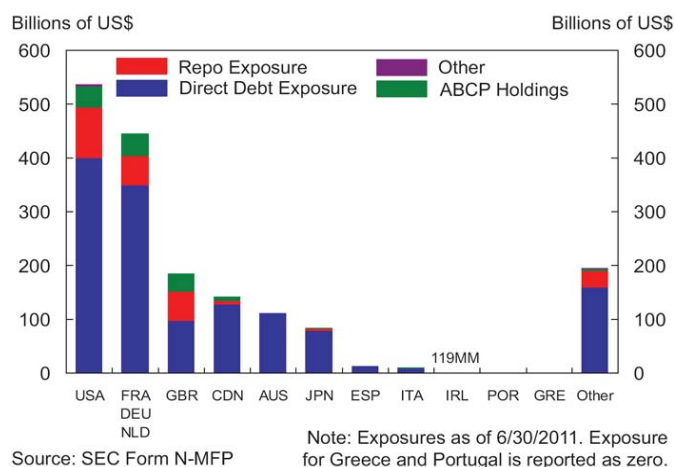


Chart 7.1.11 Potential BHC Ratings Without Support Uplift

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

Source: Moody's, S&P Note: *Denotes rating is under review for downgrade.

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



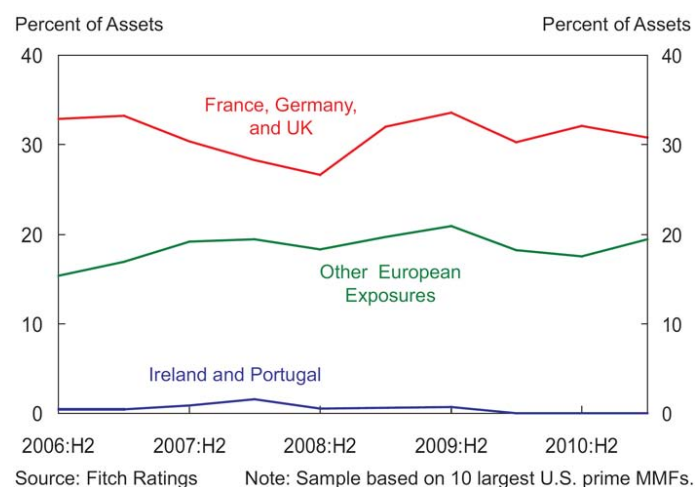
closely, especially their short-term funding strategies and new products. Financial institutions have begun to develop short-term funding products, such as collateralized commercial paper, to comply with new regulatory guidelines and still meet their business objectives. Council members are closely monitoring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

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

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

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

Chart 7.1.13 U.S. Prime MMF European Exposures



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

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

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

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

Chart 7.1.14 VIX: A Measure of Financial Market Volatility

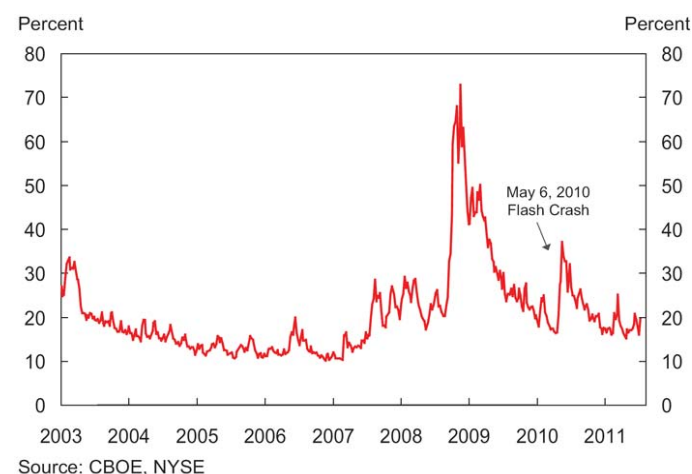


Chart 7.1.15 Sharp Jumps in Market Volatility

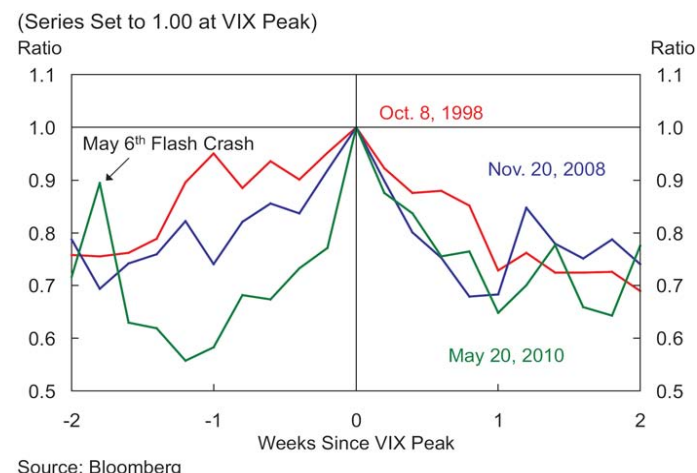
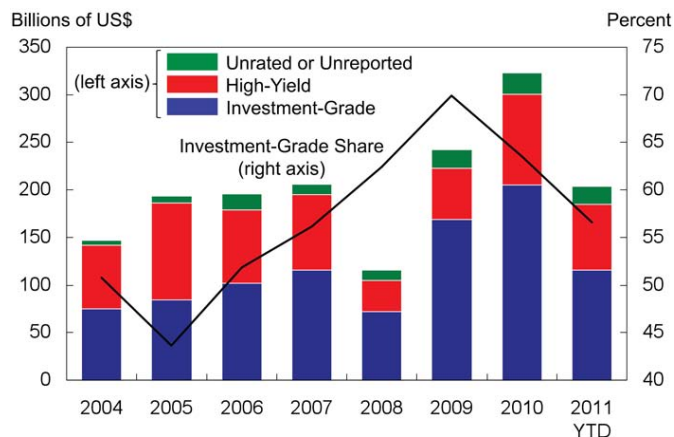


Chart 7.1.16 Emerging Market Bond Issuance



Source: Dealogic

Note: 2011 is YTD as of 2011:H1.

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

With heightened uncertainty, financial markets can experience fast price movements. For example, if the yield curve were to steepen abruptly, perhaps owing to uncertainty about raising the U.S. government's debt limit, various markets could be strained. The impact of yield curve steepening on individual market participants could be mitigated to some extent by hedging activity, as interest rate risk is commonly transferred in derivatives markets, but recent financial crises have shown that larger-than-expected price movements can expose previously unknown vulnerabilities.

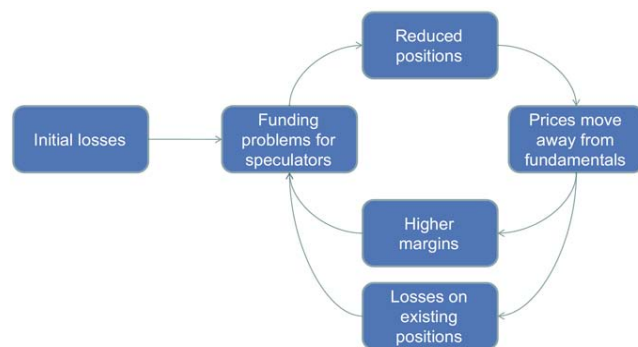
The increasing asset allocations to commodities and emerging markets also may present challenges. Strong economic growth and capital inflows are drawing attention to the risks of overheating in certain emerging market economies and asset markets. Emerging market external bond issuance reached record levels in 2010 and is on pace to exceed those levels in 2011 (**Chart 7.1.16**). Commodity markets have recently shown high volatility. While expected volatility is high in these markets, uncertainty exists about how ETFs and other products related to commodities would perform under stressed market conditions.

7.1.3 Financial Infrastructure

Council members have identified three components of the market infrastructure that require strengthening: (1) mortgage servicing, (2) derivatives, and (3) tri-party repo. Of the three, the weaknesses in the tri-party repo market are most likely to amplify current risks.

Industry initiatives are underway to address shortcomings in the tri-party repo market infrastructure by reducing the market's reliance on intraday credit provision by the clearing banks, but these efforts are unlikely to address all the structural weaknesses in the market, including dealer liquidity risk management, lender collateral management, and the market's resilience to investor runs and a potential dealer

Chart 7.1.17 Market and Funding Liquidity Spirals



Source: Brunnermeier and Pedersen (2009), Review of Financial Studies

failure. During the crisis, the lack of transparency and the pervasive belief that the clearing bank would always unwind a dealer's repos caused market participants to inaccurately assess the credit and liquidity risks inherent in their exposures, which contributed to the industry's fragility.

The fragility of market and funding liquidity and the constraints on the type of collateral certain investors (particularly MMFs) are prepared to take heightened the risk of contagion from the tri-party repo market. Many tri-party repo lenders, given their regulatory structure and investor base, still have a strong incentive to withdraw funding from a borrower at the first sign of distress, which can accelerate dealers' funding difficulties. For example, while MMF reform can help insulate these funds from runs by their investors, MMFs still have the incentive to pull away from a troubled dealer in the tri-party repo market because, in many cases, MMFs cannot take possession of the collateral in the event of a dealer default.

Other important classes of lenders, such as asset custodians administering securities lending programs, can also face significant liquidity demands from their clients under certain circumstances, which may make them unwilling or unable to hold pledged collateral. Regulators should ensure that the various participants in the tri-party repo market are implementing and sustaining the necessary improvements in their management of collateral to alleviate the risk of cash investor runs in this market.

Another risk to the tri-party repo market is the possibility of a dealer default. A dealer default would likely result in the sudden liquidation of a large amount of collateral by its counterparties, creating fire sale conditions in the underlying asset markets that could set damaging spirals in motion (**Chart 7.1.17**). The Tri-Party Repo Infrastructure Reform Task Force has called for tri-party repo lenders to develop plans and arrangements for liquidating collateral in the event of a default, but supervisory action is needed to ensure that such plans are developed and maintained. The Dodd-Frank

Act includes reforms intended to help ensure that the risks posed by institutions such as the large dealers in the tri-party repo market are managed prudently and subject to adequate oversight. Among other actions, when the Federal Reserve and FDIC finalize the new rules, most of the largest dealers in this market will be required to submit detailed resolution plans that will provide regulators with the tools and authority necessary to resolve a failed institution in a way that limits broader systemic impact and taxpayer cost. Additional actions by the regulatory community may be necessary to promote confidence that liquidation of collateral from a major dealer will proceed in an orderly manner.

7.2 Ongoing Challenges to Financial Stability

The financial system constantly evolves in response to changes in the environment in which financial institutions and market participants compete. Council members analyze the forces driving these changes in three categories: cyclical, secular, and regulatory. The Council closely monitors these forces and their effects on business models and product innovations, with a focus on understanding how financial activities could migrate to less-regulated corners of the financial system and give rise to imbalances and new vulnerabilities.

7.2.1 Cyclical Forces

Two years into a relatively weak economic recovery, the U.S. financial system is at an uncertain stage in the business cycle. Real estate markets have not recovered, and lending remains weak by historical standards. At some point, monetary policy will normalize and fiscal policy will consolidate, which has implications for financial institutions and markets.

While business investment and consumer spending have begun to improve, household net worth remains depressed and unemployment is elevated. Loan demand from households and nonfinancial corporations remains weak by historical standards. As discussed in Section 4.1, the weakness in the economy is due at least in part to a reduction in the supply of credit, as financial institutions attempted to reduce their leverage by selling assets, extending fewer new loans, and conserving capital.

Monetary policy will eventually normalize and fiscal consolidation will occur as the financial system and the real economy continue to heal from the financial crisis and the recession. The pace of these adjustments will have an impact on the economic prospects and business models of financial institutions. While banks' earnings will likely benefit in the short run as short-term interest rates and credit flows increase, in the long run, strategies that are profitable in a low-interest-rate environment may not work as well when rates rise.

As monetary policy normalizes, movements in the yield curve will affect financial institutions' net interest margins. Statistical analysis of historical patterns suggests that net interest margins for the industry as a whole will remain at or above current levels, under the assumption that financial institutions will not adjust the composition of their portfolios. Financial institutions—ranging from small credit unions and community banks to the largest, most complex institutions—increased their holdings of government securities and agency mortgage-backed securities as loan growth slowed. High levels of reserves have helped banks strengthen their balance sheets, but reserves will decline as monetary policy normalizes.

Banks experienced significant funding inflows from depositors attracted by the safety of insured deposits during the financial crisis. Typically, as short-term rates increase and risk appetites return to normal, some depositors will seek out the higher returns offered by MMFs and other short-term investments. Banks that are experiencing deposit outflows might have to raise their deposit rates or find alternative forms of funding, lowering their net interest margins. To mitigate that impact somewhat, banks can offer relatively low interest rates for some deposits because they offer important transaction services. But these outflows could be much larger than those that occurred after previous recessions, because depositor inflows have been more significant this time than during the spikes in the late 1980s and mid-1990s.

Alternatively, in an environment of weak economic growth, a prolonged period of low interest rates would have its own effects. It might encourage excessive risk taking, a decline in credit standards, and speculation. The longer short-term interest rates

remain at their lower bound, the more strain will be placed on the business models of MMFs and other cash pools, which might cause some investors to reach for yield in untested areas. The new rules on MMF maturity structure and quality of assets are intended to limit this reaction.

Another source of uncertainty is the real estate sector, on which many financial institutions' business models depended before the crisis. Most projections assume a long, slow recovery in residential and commercial real estate activity. Small and medium-sized financial institutions, which have less scope to diversify their business models from real estate, may find it difficult to identify new profit streams and may enter competitive markets with which they are relatively unfamiliar. Another key uncertainty is the path of transition back to a housing finance system with less government involvement.

As firms adapt their business models, Council members will assess changes in earnings strategies, including signs of reaching for yield that may come from softening underwriting standards or shifts into riskier markets. Monitoring underwriting standards and appropriate pricing for risk in these and other products will be a key focus for Council members.

7.2.2 Secular Forces

The financial system evolves in response to long-term trends. Two important trends are technological change and the increasing globalization of financial activity.

Technological progress in the financial industry is reflected in advances in firms' and markets' infrastructure and the introduction and development of new financial products, along with the analytical tools needed to value those products. Technological innovation can trigger dramatic changes in firms' business models, increase the interconnectedness of the system as a whole, and facilitate a much more globalized financial system. Financial product innovation is often motivated by the need to identify new profit streams in a competitive environment. Innovations can also be enabled by new analytical tools; for example, the introduction of option pricing theory led to growth in the options market in the 1970s, and new correlation models accelerated growth in the market for collateralized debt

obligations of mortgage-backed securities in the pre-crisis period.

Such innovations can provide firms with new ways to transfer risks, undertake different forms of maturity transformation, and create leverage. They may also increase the complexity and opacity of the financial system. Financial institution risk managers and their supervisors need to carefully monitor the risks of new products. A constant threat comes from "model risk," which refers to the fact that model-based predictions of behavior often miss important changes. Almost by definition, the newest financial products are most exposed to model risk, because their lack of historical data presents challenges for model development or back-testing.

Another result of technological innovation is the advent of faster computers and the ability to accommodate more complex networks, which has enabled a surge in electronic trading in many markets (**see Section 5.3.3**). Under normal market conditions, the presence of electronic traders supports immediate and competitive execution of orders. However, the combination of speed and automatic execution creates risks. First, electronic trading occurs too quickly for human judgment to intercede. For example, the rapid pace of order execution is vulnerable to runaway processes. If the trading algorithms are not properly designed for these situations, the results may be far different than they would be if humans could intercede. Second, liquidity provided by electronic traders may deteriorate in stressed environments. Third, electronic trading enables strategies that can inhibit price discovery. For example, some trading algorithms seek out liquidity demand, presenting bids and offers into the market and then retracting them in a space of nanoseconds.

Technological innovation has allowed many transactions and payments to be completed electronically. While this lowers transactions costs, it has exposed the financial system to a new set of risks. Recently, federal regulators released updated guidance on how banks should guard against cybersecurity threats. The guidance is intended to help ensure that the financial system increases its protection against the evolving methods used to penetrate computer networks. The regulators

noted that successful cyberattacks have stolen hundreds of millions of dollars from online accounts by exploiting vulnerabilities in identifying the true account owner. The new guidance addresses these vulnerabilities.

Another secular trend is the rise of international banking. Foreign banks play an increasingly important role in U.S. financial markets. Moreover, certain globally operating institutions pose outsized risks to domestic and global markets, regardless of where they have their headquarters, owing to their size, complexity, and interconnections. The financial crisis illustrated the difficulty of resolving, in an orderly fashion, a failing financial institution that operates in many jurisdictions (**see Box I: Addressing Issues Related to Large Complex Financial Institutions**). Regulators are collaborating globally to address the systemic and moral hazards associated with these institutions through common regulatory standards, capital surcharges on the most systemically important global institutions, coordination among supervisors, and improvements to resolution regimes. For regulation of the global financial system to be effective, a cohesive regulatory framework across countries is crucial.

Globalization of finance is particularly relevant in the United States because of the role of the dollar as the international reserve currency and the fact that foreign financial institutions have large holdings of U.S. dollar-denominated assets. During the crisis, banks in other countries faced significant difficulties in continuing to fund their holdings of distressed U.S. assets, particularly housing-related securities. Similarly, distress in other countries can affect the U.S. financial system if banks in those countries experience widespread deposit runs or short-term funding withdrawals and are forced to sell U.S. dollar assets in large quantities.

7.2.3 Regulatory Forces

Innovations and changes in the financial system are significantly motivated by changes in the regulatory environment and, in turn, often require additional responses by regulators.

In the wake of the crisis, sweeping regulatory changes have been enacted in the United States and abroad to improve the resilience of the financial

system; for example, through increased capital and liquidity standards. The designation of nonbank financial companies for supervisory oversight will enable regulators to impose capital, liquidity, and risk management standards on a wider set of firms. Accounting changes for asset-backed markets have helped reduce regulatory arbitrage in these products. The establishment of the Consumer Financial Protection Bureau will have a direct impact on the functioning of mortgage markets through the imposition of a suitability standard and changes in disclosure. Derivatives reform will require the use of central counterparties for standardized derivatives and increased transparency.

The largest financial institutions will be most influenced by regulatory forces, given their extensive role in the financial system. For example, derivatives reform will likely pressure the margins of dealers, which include several of the largest BHCs, as transparency and standardization are brought to this market. Implementation of the Volcker rule will also require changes in business models. Although these institutions should have enough flexibility to refine their core business activities, changes in their risk profiles must be carefully monitored.

The regulatory reforms that are most likely to affect the business models of the largest globally active financial firms and the structure of the global financial system are the new Basel III capital and liquidity rules. The significantly higher capital requirements for all internationally active banks, the capital surcharge framework for globally systemic banks, the higher risk weights on capital market activity and exposures to other large financial firms, the stricter definition of capital, the new international leverage ratio, and the new quantitative liquidity standards will cause global banks to reduce their interconnectedness, operate with larger capital and liquidity buffers, and otherwise lower their systemic footprint. This stricter regulatory regime will also create powerful incentives for global banks to restructure their internal operations, their capital bases, their funding profiles, and their transactions with other market participants to arbitrage the rules.

Council members expect that the combined impact of financial reform will be to improve financial stability. However, regulatory forces are bound to influence market dynamics in unpredictable ways;

care must be taken to ensure that these effects do not undermine the intent of the reforms. Product innovation may be driven by gaps or inconsistencies in the new regulatory framework, further highlighting the need for cooperation among regulators.

Changes in regulations can give rise to unintended consequences. Under the new regulatory regime, less regulated institutions are likely to find competitive advantages. As a general principle, similar activities should be subject to similar regulations, but applying this principle in a globally integrated financial system is challenging. For this reason, the United States is continuously engaged with its international partners. This engagement occurs through participation in the Financial Stability Board and G-20 working groups, as well as bilateral dialogues such as the U.S.-E.U. Financial Market Regulatory Dialogue. This ongoing engagement promotes consistency and is intended to create a “race to the top,” so U.S.-based firms are not at a competitive disadvantage in the global marketplace. Council members will be attuned to the benefits and costs of existing and new regulations, and to the risk that financial market participants will respond by moving activities outside the U.S.-regulated core.