Statement of
Sheila C. Bair, Chairman,
Federal Deposit Insurance Corporation On FDIC Oversight
Examining and Evaluating the Role
of the
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and
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Chairman Capito, thank you for the opportunity to testify today on the state of the banking industry and the Federal Deposit Insurance Corporation, and on future challenges to economic and financial stability.

Shortly after taking the oath as FDIC Chairman almost five years ago, I came to realize that we would face significant challenges in a number of areas. Although the FDIC was still in the midst of a two-and-a-half year period without a failed institution, the longest such period in our history, there were signs that not all was well with the banking industry. Predatory lending practices and unsuitable mortgage products, which were already an area of focus for me at the Treasury Department when I served as Assistant Secretary for Financial Institutions in 2001 and 2002, became even more prevalent as the decade progressed. Rising concentration in the banking industry was leading to the emergence of large, complex organizations that encompassed bank subsidiaries, special-purpose vehicles, and nonbank affiliates, while a greater share of financial activity was migrating to nonbank financial companies. Not only did these non- bank affiliates and financial companies exist largely outside of the prudential supervision and capital requirements that apply to federally insured depository institutions in the U.S., but they were also not subject to the FDIC's process for resolving failed insured financial institutions through receivership. Meanwhile, many small and mid-sized banking institutions had, over time, accumulated large concentrations of loans backed by commercial real estate and construction projects that were vulnerable to a weakening of U.S. real estate markets following a record boom in home prices.

Despite the warning signs, few at the time foresaw the extent of the emerging threat to our financial stability-a threat that was realized in the fall of 2008 when we experienced the worst financial crisis since the 1930s. While the emergency policy measures that were put in place in late 2008 and early 2009 helped to prevent an even larger catastrophe, the macroeconomic consequences of the financial crisis have been enormous. Even as the danger to the banking industry begins to recede, we are faced with the twin tasks of rebuilding our financial infrastructure on more solid ground and implementing safeguards that will help to prevent a costly recurrence of this disaster.

Today, as I prepare to wrap up my term as FDIC Chairman, I am pleased to have the opportunity to discuss with you what I see as some of the most important causes of the crisis, the steps that the FDIC took to deal with the problem, the reforms we are putting in place to make our system less vulnerable to costly instability in the future, and some of the broader policy challenges we must address to secure our economic future.

The Roots of the Financial Crisis

Much has been said and written about the causes of the financial crisis. In previous testimony, I have described in some detail the combination of factors that led to the crisis of 2008 and motivated the legislative reforms that are now being put in place. Today, I would like to summarize these causes under four broad themes.

Excessive Reliance on Debt and Financial Leverage

A healthy system of credit intermediation, where the surplus of savings is channeled toward its highest and best use by household and business borrowers, is critically important to the modern economy. A starting point for understanding the causes of the crisis and the changes that need to be made in our economic policies is recognition that the U.S. economy has long depended too much on debt and financial leverage to finance all types of economic activity.

In principle, debt and equity are substitute forms of financing for any type of economic activity. However, owing to the inherently riskier distribution of investment returns facing equity holders, equity is generally seen as a higher-cost form of financing. This perceived cost advantage for debt financing is further enhanced by the standard tax treatment of payments to debt holders, which are generally tax deductible, and equity holders, which are not. In light of these considerations, there is a tendency in good times for practically every economic constituency - from mortgage borrowers, to large corporations, to startup companies and the financial institutions that lend to all of them - to seek higher leverage in pursuit of lower funding costs and higher rates of return on capital. What is frequently lost when calculating the cost of debt financing are the external costs that are incurred when problems arise and borrowers cannot service the debt. Credit defaults, which tend to occur with high frequency in economic downturns, frequently lead to severe adjustments-including foreclosure, repossession, and distressed asset sales-that impose very high costs on economic growth and our financial system.

Thus, as demonstrated in the recent financial crisis, the social costs of debt financing are significantly higher than the private costs. In good economic times, when few borrowers are forced to default on their obligations, more economic activity can take place at a lower cost of capital when debt is substituted for equity. However, the built-in private incentives for debt finance have long been observed to result in periods of excess leverage that contribute to a financial crisis. As Carmen Reinhart and Kenneth Rogoff describe in their 2009 book *This Time It's Different:*

"If there is one common theme to the vast range of crises we consider in this book, it is that excessive debt accumulation, whether it be by the government, banks, corporations, or consumers, often poses greater systemic risks than it seems during a boom." [1]

This is precisely what was observed in the run up to the recent crisis. Mortgage lenders effectively loaned 100 percent or more against the value of many homes without underwriting practices that ensured borrowers could service the debt over the long term. Securitization structures were created that left the issuers with little or no residual interest, meaning that these deals were 100 percent debt financed. In addition, financial institutions not only frequently maximized the degree of on-balance-sheet leverage they could engineer; many further leveraged their operations by use of off-balance-sheet structures. For all intents and purposes, these off-balance-sheet structures were not subject to prudential supervision or regulatory capital requirements, but nonetheless enjoyed the implicit backing of an affiliated insured bank. These and many other financial practices employed in the years leading up to the crisis made our core financial institutions and our entire financial system more vulnerable to financial shocks.

Misaligned Incentives in Financial Markets

Financial markets are ideally deep, liquid, efficient markets where observable prices convey useful information to market participants. However, informational asymmetries, conflicts of interest, or other misaligned incentives can significantly impair the liquidity and efficiency of financial markets. One of the enduring legacies of the financial crisis will be how misaligned incentives led to devastating instability in our financial system.

I explored some of the implications of misaligned incentives in our financial system in my January 2010 testimony before the Financial Crisis Inquiry Commission (FCIC). [2] Overall, financial institutions were only too eager to originate mortgage loans and securitize the loans using complex structured debt securities. Investors purchased these securities without a proper risk evaluation, as they outsourced their due diligence obligation to the credit rating agencies. Consumers refinanced their mortgages, drawing ever more equity out of their homes as residential real estate prices grew beyond sustainable levels. Formula-driven compensation at financial institutions allowed high short-term profits to be translated into generous bonus payments, without regard to any longer-term risks. These developments were made possible by a set of misaligned incentives among and between all of the parties to the securitization process-including borrowers, loan originators, credit rating agencies, loan securitizers, and investors.

Misaligned economic incentives within mortgage securitization transactions and the widespread use of such securitizations to fund residential lending combined to play a key role in driving the precipitous decline in the housing market and the financial crisis. Almost 90 percent of subprime and Alt-A originations in the peak years of 2005 and 2006 were privately securitized. During this period, the originators and securitizers seldom retained meaningful "skin in the game." These market participants received immediate profits with each deal while assuming that they faced little or no risk of loss if

the loans defaulted. As a result, securitizers had very little incentive to maintain adequate lending and servicing standards.

The substantial and immediate profits available through securitization skewed the incentives toward increased volume, rather than well underwritten, sustainable lending. In the late 1990s and early 2000s, when private mortgage-backed securitization was still a relatively small part of the market, the typical deal structure included non-rated or sub-investment grade tranches reflecting the equity interest that was retained by the issuer. These equity slices typically ranged in size from 3 to 5 percent or more of the total value of the deal. As long as the market required issuers to retain the equity risk, there was at least some incentive for issuers to more carefully choose the mortgages they would include in the pool. But by the middle of the decade, the size of these equity tranches had fallen in many cases to one percent or less of the value of the deal.

Moreover, an active market arose in selling and repackaging these equity tranches in collateralized debt obligations, thereby removing all risk of loss from the original security issuer. Without the need to carry and fund equity claims arising from mortgage securitization, the pure "originate-to-distribute" model of mortgage lending came into being, conferring virtually infinite leverage to the issuers of private mortgage-backed securities. Predictably, with higher leverage came riskier lending, and increased numbers of borrowers-encouraged by lenders and brokers-received loans that they simply could not repay. When housing prices reached unsustainable levels and began to decline, the house of cards collapsed and revealed the inherent flaws in the incentives of the prior securitization model. More than half of the privately-securitized subprime loans made in 2006 have now defaulted, along with over 40 percent of the privately-securitized Alt-A loans made that year.

The mortgage servicing documentation problems that were uncovered last year are yet another example of the implications of lax underwriting standards and misaligned incentives in the mortgage industry. Since the servicers of securitized mortgages do not own the mortgages, they lack economic incentives to mitigate losses through effective loan restructuring. In addition, the traditional, fixed level of compensation for loan servicing paid under typical securitizations has proven to be wholly inadequate to implement appropriate policies and procedures to effectively deal with the volume of problem mortgage loans. As a consequence, inadequate resources and lack of economic self-interest led mortgage servicers to cut corners in all aspects of mortgage servicing and documentation. Thus, the incentive problems that helped to spawn the crisis are now among the most important impediments to resolving it. Clearly, financial risk managers and financial regulators must pay much closer attention in the future to incentive and information problems that inhibit the efficiency of financial markets and raise the risk of market instability.

Failures and Gaps in Financial Regulation

The regulatory reforms put in place for federally-insured depository institutions following the banking crisis of the 1980s and early 1990s helped to constrain risk-taking on bank balance sheets. But in a process known as regulatory arbitrage, risk began to migrate

into the so-called shadow banking system-a network of large-bank affiliates, special-purpose vehicles, and nonbank financial companies that existed largely outside of the prudential supervision, capital requirements, and receivership powers that apply to federally insured depository institutions in the U.S. The migration of essential banking activities outside of regulated financial institutions to the shadow banking system ultimately lessened the effectiveness of regulation and made the financial markets more vulnerable to a breakdown.

Many of the structured finance activities that generated the largest losses were complex and opaque transactions undertaken at the intersection of the lightly regulated shadow banking system and the more heavily regulated traditional banking system. For instance, private-label MBSs were originated through mortgage companies and brokers as well as portions of the banking industry. The MBSs were subject to minimum securities disclosure rules that are not designed to evaluate loan underwriting quality. Moreover, those rules did not allow sufficient time or require sufficient information for investors and creditors to perform their own due diligence either initially or during the term of the securitization. For banks, once these loans were securitized, they were off the balance sheet and no longer on the radar of many banks and bank regulators.

Outside of the largest and most complex institutions, traditional banks and thrifts continued to rely largely on insured deposits for their funding and most focused on providing core banking products and services to their customers. Eventually, these traditional institutions also suffered extensive losses as many of their loans defaulted as a consequence of collateral damage from the deleveraging effects and economic undertow created by the collapse of the housing bubble.

The Erosion of Market Discipline Due to "Too Big to Fail"

One of the most powerful inducements toward excess leverage and institutional risk-taking in the period leading up to the crisis was the lack of effective market discipline on the largest financial institutions that were considered by the market to be Too Big to Fail. Several large, complex U.S. financial companies at the center of the 2008 crisis could not be wound down in an orderly manner when they became nonviable. Major segments of their operations were subject to the commercial bankruptcy code, as opposed to bank receivership laws, or they were located abroad and therefore outside of U.S. jurisdiction. In the heat of the crisis, policymakers in several instances resorted to bailouts instead of letting these firms collapse into bankruptcy because they feared that the losses generated in a failure would cascade through the financial system, freezing financial markets and stopping the economy in its tracks.

As it happened, these fears were realized when Lehman Brothers-a large, complex nonbank financial company-filed for bankruptcy on September 15, 2008. Anticipating the complications of a long, costly bankruptcy process, counterparties across the financial system reacted to the Lehman failure by running for the safety of cash and other government obligations. Subsequent days and weeks saw the collapse of interbank lending and commercial paper issuance, and a near complete disintermediation of the shadow banking system. The only remedy was massive

intervention on the part of governments around the world, which pumped equity capital into banks and other financial companies, guaranteed certain non-deposit liabilities, and extended credit backed by a wide range of illiquid assets to banks and nonbank firms alike. Even with these emergency measures, the economic consequences of the crisis have been enormous.

Under a regime of Too Big to Fail, the largest U.S. banks and other financial companies have every incentive to render themselves so large, so complex, and so opaque that no policymaker would dare risk letting them fail in a crisis. With the benefit of this implicit safety net, these institutions have been insulated from the normal discipline of the marketplace that applies to smaller banks and practically every other private company. This situation represents a new and dangerous form of state capitalism, where the market expects these companies to receive generous government subsidies in times of financial distress. Unless reversed, we could expect to see more concentration of market power in the hands of the largest institutions, more complexity in financial structures and relationships, more risk-taking at the expense of the public, and, in due time, another financial crisis. However, as described later, the Dodd-Frank Act introduces several measures in Title I and Title II that, together, provide the basis for a new resolution framework designed to render any financial institution "resolvable," thereby ending the subsidization of risk-taking that took place prior to these reforms.

In summary, the roots of the financial crisis lay under four main areas: excessive debt, misaligned incentives in financial markets, failures and gaps in financial regulation, and the undermining of market discipline by To Big to Fail. Any one of these problems in isolation would have weakened the long-term performance of our financial system and made it more vulnerable to shocks. In combination, they led to the worst U.S. financial crisis and economic downturn since the 1930s. The following section discusses how the FDIC responded to the immediate challenges posed by these developments.

FDIC Responses to the Challenges of the Financial Crisis

The FDIC was created in 1933 in response to the most serious financial crisis in American history to that time. Our mission then-as now-is to promote financial stability and public confidence in banking through bank supervision, deposit insurance and the orderly resolution of failed banking institutions. Working with our regulatory counterparts, the FDIC has played an instrumental role in addressing the recent crisis. Our actions have helped to restore financial stability and pave the way for economic recovery. We have done so by effectively carrying out our core missions as described above, and by undertaking some unprecedented emergency actions necessary to restore stability to our financial system. The appropriateness and effectiveness of these actions is evidenced both by the gradual recovery we are seeing in financial markets and institutions, as well as the 19 consecutive unqualified audit opinions the FDIC has received from the Government Accountability Office (GAO). This section summarizes the FDIC's actions during the crisis and highlights some important organizational changes and new initiatives we have undertaken to enhance our effectiveness.

Bank Supervision

The FDIC is the primary federal supervisor for most community banks in the U.S. These institutions provide credit, depository, and other financial services to consumers and businesses on Main Street, and are playing a vital economic role as cities and towns recover from the recession. As primary federal supervisor for these institutions, the FDIC seeks to maintain a vigilant but balanced posture with regard to both safety and soundness and consumer compliance supervision. Such an approach is in keeping with our longstanding belief that consumer protection and safe and sound banking are two sides of the same coin.

During the financial crisis, the FDIC initiated a number of enhancements to its supervisory program and issued a broad spectrum of guidance to the banking industry to establish, and clearly reaffirm, safety and soundness expectations. The FDIC's Division of Risk Management Supervision (RMS) responded quickly to the rapid deterioration of insured depository institutions by expanding off-site monitoring activities, accelerating on-site examinations, performing on-site visitations between examinations, and strengthening the workforce through permanent and temporary hiring. At the same time, we provided examiners with greater latitude to expand the scope of examinations when necessary and training updates on fundamental aspects of bank supervision and real estate lending. From a policy perspective, the FDIC independently issued and joined interagency issuances of much-needed regulatory guidance. This guidance dealt with significant risk management issues that became central themes of the crisis such as subprime and nontraditional mortgage lending, commercial real estate lending, incentive compensation practices, liquidity and funds management, and regulatory/charter conversions. Importantly, we also actively encouraged banks to continue prudently originating and, when appropriate, modifying loans to creditworthy borrowers.

As the Committee is well aware, the most important element of prudential bank supervision is on-site examination activity. Given the significant weaknesses in real estate lending and increasing volume of problem banks over the past several years, the frequency and scope of FDIC supervisory activities expanded. In 2010 alone, the FDIC conducted over 2,700 regular examinations and 2,210 on-site visitations. We have also exercised our special examination authority to evaluate risks posed to the Deposit Insurance Fund (DIF) by insured institutions that are not directly supervised by the FDIC. While our core examination procedures have not changed, the FDIC is working smarter through a significantly enhanced off-site monitoring and surveillance program that has helped us to more quickly address emerging signs of financial deterioration. When signs of deterioration are identified, we typically perform an on-site visitation to assess the emergent weaknesses, whether a regular examination should be accelerated, the appropriateness of currently-assigned CAMELS ratings, and potential risk to the Fund.

As a result of the increased volume of problem institutions nationally, we accelerated the process for initiating corrective programs that address financial or managerial concerns. We implemented a process that ensures the initiation of most corrective programs within 60 days of the completion of an examination. This has helped banks act on supervisory recommendations expeditiously. The FDIC also strengthened its

internal standard for performing supervisory activities at institutions rated '3', '4', or '5' so that we conduct not only a regular examination every twelve-months, but also on- site visitations every six months, at a minimum. Moreover, we actively communicate with banks that are subject to a corrective program and ensure that their related progress reports are reviewed and followed-up on in a timely manner.

To achieve the goals of our supervisory mission, the FDIC hired additional examiners and technical specialists. As of April 30th, our risk management examination force stands at approximately 1,900 examiners, up from 1,200 at the end of 2007. This staffing increase improved our ability to conduct supervision and special examination activities as well as responding to complex and emerging risks. RMS has also provided training to the examination staff to update and reinforce credit, real estate appraisal, and other bank supervision fundamentals. Through this training, we have emphasized a forward-looking, balanced approach to supervision that promotes fairness and effectiveness in our role as regulators.

The FDIC issued a variety of timely supervisory guidance both before and during the crisis on important risk management issues affecting the banking industry. As the Committee will recall, subprime and non-traditional residential mortgage loans were one of the first lending fields negatively impacted by the real estate bubble. In response, the FDIC joined the other regulatory agencies in issuing *Interagency Guidance on Nontraditional Mortgage Product Risks* in 2006, and led the development of the joint *Interagency Statement on Subprime Lending* in 2007 to establish regulatory expectations about the risks and oversight of these credit products. [3] We believe that these and subsequent related issuances helped banks improve their credit risk management and consumer protection process for higher-risk mortgage lending.

With respect to commercial real estate (CRE) lending, we issued a number of Financial Institution Letters addressing the need for strong risk management practices and appropriate capital and reserve levels for institutions with CRE loan concentrations. For example, in 2008, the FDIC issued a Financial Institution Letter titled *Managing Commercial Real Estate Concentrations in a Challenging Environment* that emphasized the importance of these tenets. [4] This Letter followed up on the 2006 joint *Guidance on Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices*, which outlined how strong risk management practices and appropriate levels of capital were essential elements of a sound commercial real estate lending program. [5] Institutions that adhered to the risk management tenets in these issuances have tended to weather the crisis and remain well positioned to originate new loans as demand returns to the market.

In response to significant concerns about the regulatory position relative to CRE loan workouts and restructures, we joined the other banking agencies in issuing the 2009 *Policy Statement on Prudent Commercial Real Estate Loan Workouts* which encouraged prudent and pragmatic CRE workouts within the framework of financial accuracy, transparency, and timely loss recognition. [6] This issuance has led to a better understanding of regulatory expectations and an encouragement to banks to engage in prudent restructures when appropriate. The FDIC has also been a strong proponent of

reforms to address front-loaded compensation structures that provide incentives for short- term excessive risk taking. We joined the other agencies to issue the *Interagency Notice of Proposed Rulemaking Incentive-Based Compensation Arrangements* earlier this year. [7] This proposed rulemaking seeks to strengthen the incentive compensation practices at covered institutions by better aligning employee rewards with longer-term institutional objectives.

Managing the Deposit Insurance Fund

Shortly after my tenure at the FDIC began in 2006, we moved to implement a new law that eased statutory restrictions on the FDIC's ability to build up the DIF balance when economic conditions were favorable. The earlier restrictions had prevented the FDIC from charging most banks a premium based on risk when the fund balance exceeded $1.25 per $100 of insured deposits. The 2006 reforms permitted the FDIC to charge all banks a risk-based premium and provided additional, but limited, flexibility to manage the size of the DIF. The FDIC changed its risk-based pricing rules in response to the new law, but the onset of the recent crisis prevented the FDIC from increasing the DIF balance. In all, the failure of 365 FDIC-insured institutions since year-end 2007 has imposed total estimated losses of $83 billion on the DIF.

As in the earlier banking crisis, the sharp increase in bank failures caused the fund balance, or its net worth, to become negative. In the recent crisis, the DIF balance turned negative in the third quarter of 2009 and hit a low of negative $20.9 billion in the following quarter. By that time, however, the FDIC had already moved to shore up its resources to handle the high volume of failures and begin replenishing the fund. The FDIC increased assessment rates at the beginning of 2009, which raised regular assessment revenue from $3 billion in 2008 to over $12 billion in 2009 and almost $14 billion in 2010. In June 2009, the FDIC imposed a special assessment that brought in an additional $5.5 billion from the banking industry. Furthermore, in December 2009, to increase the FDIC's liquidity, the FDIC required that the industry prepay almost $46 billion in assessments, representing over three years of estimated assessments.

While the FDIC had to impose these measures at a very challenging time for banks, they enabled the agency to avoid borrowing from the Treasury. The measures also reaffirmed the longstanding commitment of the banking industry to fund the deposit insurance system.

Since the FDIC imposed these measures, the DIF balance has steadily improved. It increased throughout 2010 and stood at negative $1.0 billion as of March 31 of this year. Barring unforeseen circumstances, the DIF balance at June 30 should again be positive, after seven quarters in the red. The FDIC has put in place assessment rates necessary to achieve a reserve ratio (the ratio of the fund balance to estimated insured deposits) of 1.35 percent by September 30, 2020, as the Dodd-Frank Act requires.

The FDIC has also implemented the Dodd-Frank Act requirement to redefine the base used for deposit insurance assessments as average consolidated total assets minus average tangible equity. As Congress intended, the change in the assessment base, in

general, will result in shifting some of the overall assessment burden from community banks to the largest institutions, which rely less on domestic deposits for their funding than do smaller institutions. The result will be a sharing of the assessment burden that better reflects the relative loss exposure to the DIF.

The Dodd-Frank Act also provided the FDIC with substantial new flexibility in setting reserve ratio targets and paying dividends. The FDIC now has the ability to achieve goals for deposit insurance fund management that we sought to achieve for many years but lacked the tools to accomplish. The FDIC has used its new authority to enable the agency to adopt policies that should maintain a positive DIF balance even during a banking crisis while preserving steady and predictable assessment rates throughout economic and credit cycles. The FDIC also revised its risk-based premium rules for large banks. The new premium system for large banks goes a long way toward assessing for risks when they are assumed, rather than when problems materialize, by calculating assessment payments using more forward-looking measures. The system also removes reliance on long-term debt issuer ratings consistent with the Dodd-Frank Act.

Resolution of Failed Institutions

Between 2003 and 2007, only 10 FDIC-insured institutions failed - the lowest five-year failure total in the history of the FDIC. As it happened, this was the calm before the storm. Since the end of 2007, the FDIC has been called upon to resolve 365 failed banks and thrifts, marking a wave of failed institutions second only to the banking crisis of the 1980s and early 1990s. [8] The institutions that have failed since 2007 held $659 billion in total assets and managed 30.6 million deposit accounts with $427 billion in total deposits. These failures included some of the largest and most challenging resolutions the FDIC has ever undertaken. While just 25 institutions failed in 2008, they included IndyMac Bank, with $32 billion in assets, and Washington Mutual Bank, with $299 billion in assets and some 2,239 branches located in 15 states. The total of 140 failure resolutions in 2009 included the sudden failure of Colonial Bank, a $25 billion bank with 346 branches located in five states. Also in 2009, the FDIC successfully resolved United Commercial Bank, an institution with 63 bank branches in the U.S., an office located in Hong Kong, and a subsidiary bank headquartered in Shanghai, China.

Following the string of large failures in 2008 and 2009, the recent trend has been toward the failure of smaller institutions. From 2009 to 2010, the average size of failed institutions fell by about half, to around $600 million in assets. However, the number of failed institutions increased in 2010 to 157. While the number of failures remains elevated, we expect that 2010 will ultimately prove to have been the peak year for bank failures in this cycle. Through May 20, a total of 43 institutions had been resolved so far in 2011.

To meet the challenge posed by large numbers of failed institutions and the failure of several large institutions within a relatively short timeframe, the FDIC has applied innovative resolution strategies, effectively leveraged its existing resources, and relied on the expertise and commitment of FDIC staff and management to ensure that failed

bank resolutions were a non-event for insured depositors and to minimize further disruptions to other bank stakeholders and the wider financial markets.

Throughout the crisis, the FDIC has offered innovative resolution and asset sales transactions, such as loss sharing and structured transactions, to help preserve value, to maximize returns for the failed bank receiverships, and to return banking assets to the private sector. In all, 253 of the 365 recent bank failures were resolved via loss sharing resolution transactions, where the acquirer assumes most or all of the problem assets of the failed institution and shares the losses with the FDIC. These structures provide downside protection to investors in a risk-averse environment while preserving incentives for the acquirer to maximize returns on those assets over time, and to modify problem mortgages where this strategy can be shown to enhance value.

The FDIC is now also offering failed bank assets through securitizations. In July 2010, the FDIC issued a securitization of $470 million of performing single-family mortgages. This transaction was the first single-family securitization in the history of the FDIC and the first time the FDIC sold assets in a securitization in the current financial crisis. The transaction broke new ground in several areas including the alignment of the servicer's compensation with performance, independent third party oversight and the ability to adapt servicing standards to changes in the performance of the underlying collateral and market conditions.

The increased rate of failures has forced the FDIC to quickly scale up its resources in bank resolution. Our Division of Resolutions and Receiverships (DRR) began 2008 with 223 permanent employees. By December 2010, DRR's total authorized permanent staff had increased to 442. While additional FDIC staff resources were being hired and trained, we made use of temporary contractors to help meet the additional staffing needs. Also, in 2008 and 2009, the FDIC Board authorized the establishment of three Temporary Satellite Offices (TSOs), staffed with approximately 1,000 term employees, to address the temporary increase in resolution workload in the West, the Southeast, and the upper Midwest regions of the country. Based on projections for declining resolution activity in the Western states, the FDIC has already announced plans to sunset our West Coast TSO in January 2012, and we will announce plans to close the two remaining TSOs as soon as conditions warrant.

The Role of Public Outreach

In mid-2008, in connection with the observation of our 75th anniversary, the FDIC announced an education campaign designed to raise public awareness of federal deposit insurance and its limits. This effort included national advertising, a multi-city outreach effort and an award program for outstanding work in financial education. A series of advertisements ran in selected national newspapers and magazines, encouraging consumers to learn more about their FDIC insurance coverage, with the goal of raising awareness of deposit insurance and instilling confidence in the stability of the insured banking system. As part of the anniversary commemoration, advertisements were placed in major media and online publications and I participated in public roundtables and media interviews around the country to discuss deposit insurance, the

costs and benefits of banking services, and the importance of consumer protection in financial services.

Later in 2008, the FDIC launched a second major initiative to raise public awareness of the benefits and limitations of federal deposit insurance through public service announcements (PSAs) and the enhancement of our online tools that enable bank customers to determine whether their deposits qualify for FDIC insurance. The success of this campaign led us to extend it to Spanish language PSAs and brochures, and to conduct further outreach to the Asian American and African American communities. These award-winning efforts to bolster awareness of deposit insurance would prove valuable in preserving public confidence as the number of failed institutions mounted. [9]

Emergency Systemic Assistance

Following the passage of the FDIC Improvement Act (FDICIA) of 1991, the statute governing the FDIC's resolution authority required us to undertake the least-cost method to resolve failed institutions. Under such a scenario, insured depositors are made whole, equity holders are wiped out, and the returns to general creditors and uninsured depositors are determined by the level of recoveries on receivership assets. However, FDICIA also provided emergency powers to suspend the least-cost requirement when imposing this requirement would pose a systemic risk to the financial stability of the U.S. Invoking this systemic risk exception required the recommendation of the FDIC Board and the Board of Governors of the Federal Reserve System, and the approval of the Secretary of the Treasury, in consultation with the President.

At the height of the financial crisis, in late 2008 and early 2009, uncertainty among financial institution counterparties had created a situation of generalized illiquidity in short-term funding markets. Perhaps the best barometer of risk aversion and illiquidity in overnight funding markets is the so-called TED spread, or the difference between three-month Eurodollar rates and the yield on three-month Treasury instruments. Normally fluctuating around a level of 25 basis points, the TED spread had spiked to levels exceeding 100 basis points with the onset of financial market turmoil in late 2007, and then peaked at over 450 basis points in early October 2008, following the bankruptcy of Lehman Brothers. This and other clear signs of critical illiquidity in short-term money markets prompted the FDIC and the other federal regulatory bodies to undertake a range of emergency measures to restore confidence and liquidity to financial markets.

On October 13, 2008, the FDIC Board voted to recommend invoking the systemic risk exception in order to implement a Temporary Liquidity Guarantee Program (TLGP). The TLGP improved access to liquidity through two programs: the Transaction Account Guarantee Program (TAGP), which fully guaranteed noninterest-bearing transaction deposit accounts above $250,000, regardless of dollar amount; and the Debt Guarantee Program (DGP), which guaranteed eligible senior unsecured debt issued by eligible institutions.

All insured depository institutions were eligible to participate in the TAGP. Institutions eligible to participate in the DGP included insured depository institutions, U.S. bank

holding companies, certain U.S. savings and loan holding companies, and other affiliates of insured depository institutions that the FDIC designated as eligible entities. Although financial markets improved significantly in the first half of 2009, the Board subsequently extended both the DGP and TAGP since portions of the industry were still affected by the recent economic turmoil. The deadline for issuance of guaranteed debt was ultimately extended to October 31, 2009, with the expiration date of the guarantee extended to as late as December 31, 2012. While the FDIC Board also voted to extend the TAGP through the end of 2010, the Dodd-Frank Act subsequently provided similar deposit insurance coverage for noninterest bearing transactions accounts above the normal deposit insurance limit through the end of 2012.

The TLGP did not rely on taxpayer funding or the DIF; both the TAGP and the DGP were paid for by direct user fees. Through year-end 2010, some $10.4 billion in fees for debt guarantees and surcharges had been collected under the DGP, and another $1.1 billion in fees had been collected through the TAGP. At year-end 2010, more than 5,100 participating FDIC-insured institutions reported an average of 198,361 noninterest-bearing transaction accounts over $250,000. The deposit balances in these accounts totaled $164 billion, of which $114 billion was guaranteed under the TAGP. Also at year-end, some 64 participating issuers reported senior unsecured debt guaranteed under the DGP in the amount of $247 billion.

By providing the ability to issue debt guaranteed by the FDIC, institutions were able to extend maturities and obtain more stable unsecured funding. This calmed what was becoming a "perfect storm" whereby creditors refused to roll their debt beyond weeks, days or even overnight and demanded more collateral at the exact time that banks needed these funds to continue to finance their operations. Along with the other extraordinary measures taken by the Treasury Department and the Federal Reserve Board in the fall of 2008, the FDIC's TLGP helped to calm market fears and encourage lending during these unprecedented disruptions in financial markets in the U.S. and abroad. Most important, these programs were pre-designed to have a limited life, so that the FDIC guarantee can return to its proper, limited scope as financial market conditions normalize.

Loan Modification Programs

Since the early stages of the mortgage crisis, the FDIC has made a concerted effort to promote the timely modification of problem mortgages as a first alternative that can spare investors the high losses associated with foreclosure, assist families experiencing acute financial distress, and help to stabilize housing markets where distressed sales have resulted in a lowering of home prices in a self-reinforcing cycle.

In 2007, when the dimensions of the subprime mortgage problem were just becoming widely known, I advocated in speeches, testimony and opinion articles that servicers not only had the right, but the contractual obligation, to carry out modifications that would maximize value and protect subprime borrowers from unaffordable interest- rate resets. It was clear in most cases that doing so would benefit investors by enabling them to avoid foreclosure costs that could run as high as 40 percent or more of the value of the

collateral. In addition, the FDIC and other federal regulators jointly hosted a series of roundtables on the issues surrounding subprime mortgage securitizations to facilitate a better understanding of problems and identify workable solutions for rising delinquencies and defaults, including alternatives to foreclosure.

The FDIC had an opportunity to pioneer the implementation of such an approach as conservator at IndyMac Federal Bank in 2008. At IndyMac, the FDIC inherited responsibility for servicing a large pool of past due first-lien mortgages, both owned by the bank and serviced for others. Consistent with our fiduciary duty to maximize collections on the receivership-owned loans and to maximize recoveries for loans serviced for others, we implemented an interest-rate and term loan modification program to convert as many of these distressed loans as possible into performing loans that were more affordable and sustainable over the long term, where doing so would maximize the expected net present value (NPV) of the mortgages. In total, over 23,000 mortgages were modified using the FDIC protocol at IndyMac, almost all of which reduced the borrower's monthly payment by 10 percent or more.

At IndyMac, we developed some useful methods and learned some important lessons about how to pursue modification on a large scale. We learned that modifying loans early in their delinquency gives the best chance of success. We saw that larger payment reductions result in more successful modifications. Among the loans modified at IndyMac, we saw that increasing the size of the payment reduction from 10 percent to 40 percent or more can cut redefault rates by half. We also demonstrated that communication and follow-through with borrowers is critical. If the borrower can be contacted and the modification completed before there is an extended period of delinquency, the chances for a successful modification are greatly enhanced. Above all, we learned once again how important it is to keep the program simple. Modification programs must be relatively straightforward if servicers are to be able to apply a streamlined approach and if borrowers are to understand their options and act accordingly.

The FDIC has also continued to support prudent workout arrangements through its examination review process. In addition, we require acquirers of failed institutions who manage mortgage loans under loss sharing agreements with the FDIC to implement loan modification programs similar to the one developed at IndyMac.

Over the past year, with the emergence of the mortgage servicing crisis as a key operational risk for banks and an impediment to the recovery of U.S. housing markets, the need for effective servicing and appropriate modifications has become even more apparent. The FDIC has consistently advocated for broad agreements among the major stakeholders, including large mortgage servicers, their regulators, and the state attorneys general, that would include the systematic modification of problem mortgages in order to prevent needless foreclosures. The large backlog of seriously past-due mortgages has created an overhang of uncertainty for our housing markets that is inhibiting the inflow of new buyers that will be needed to help these markets move back toward a more stable equilibrium. It is our hope that all parties to the mortgage servicing

crisis will respond in a way that both helps families stay in their homes and hastens the recovery of our housing markets.

The FDIC Advisory Committee on Economic Inclusion

Early in my term, the FDIC Board created the Advisory Committee on Economic Inclusion to provide advice and recommendations on expanding access to mainstream banking services for underserved consumers. Census data show that some 17 million adults do not have a checking or savings account, and another 43 million adults do have an account but also rely on non-bank financial products to make ends meet. This problem disproportionately affects specific minority groups and lower-income consumers, and has a real impact on their household finances. The Committee's objective is to explore ways to lower the number of underserved households and to increase the supply of financial products targeted to these households, with an emphasis on safety and affordability for consumers and feasibility for banks. Consisting of 20 individuals from banks, academia, government, and consumer and philanthropic groups, the Committee has advised us on some of the initiatives at the FDIC of which I am most proud. One of these was the *FDIC Model Safe Accounts Pilot*, which is currently evaluating the feasibility of banks offering safe, low-cost, overdraft-free transactional and savings accounts. In 2008, the Committee recommended that the FDIC publish a list of best practices for mortgage lending to low- and moderate-income (LMI) households. [10] In March of this year, we met again to discuss LMI mortgage lending in the wake of the crisis and the Dodd-Frank Act.

Perhaps most notably, the Committee recommended the establishment of the *FDIC Small-Dollar Loan Pilot*, a case study designed to illustrate how banks can profitably offer affordable small-dollar loans as an alternative to high-cost credit products, such as payday loans and fee-based overdraft protection. [11] Under the pilot, some 28 volunteer institutions made more than 34,400 small-dollar loans with a total principal balance of $40.2 million. Most pilot bankers indicated that small dollar loans were a useful business strategy for developing or retaining long-term relationships with consumers. Following the conclusion of the Pilot, we developed a *Small-Dollar Loan Template* for others to use, that is relatively simple to implement and requires no particular technology or other major infrastructure investment. Moreover, the template could help banks better adhere to existing regulatory guidance in offering alternatives to fee-based overdraft protection programs.

These initiatives are integral to the FDIC's mission to promote public confidence in the banking system. Economic inclusion is about ensuring that all Americans have access to safe, secure, and affordable banking services so that everyone has the opportunity to save, build assets, and achieve financial security.

The FDIC Advisory Committee on Community Banking

In May 2009, the FDIC Board of Directors established the FDIC Advisory Committee on Community Banking to provide the FDIC with advice and guidance on a broad range of important policy issues impacting small community banks throughout the country, as

well as the local communities they serve, with a focus on rural areas. The Advisory Committee has been able to provide valuable input on examination policies and procedures, credit and lending practices, deposit insurance assessments, insurance coverage issues, regulatory compliance matters, and obstacles to the continued growth and ability of community banks to extend financial services in their local markets in the current environment. As discussed later in my testimony, the Advisory Committee has played an integral role in addressing issues related to regulatory burden that can disproportionately affect community banks.

In the six meetings we have held with the Advisory Committee since late 2009, we have considered the impact of the financial crisis on community banks, how the financial reform legislation affects community banks, options for funding the deposit insurance system, a variety of examination issues, bank resolutions, and the future role of the community banks as an engine of growth for small businesses and the U.S. economy.

FDIC Organizational Changes

As part of the process of preparing the FDIC to effectively confront future challenges, the FDIC Board of Directors has undertaken a number of organizational changes.

To focus on our expanded responsibilities to monitor and, potentially, resolve Systemically Important Financial Institutions (SIFIs), we established the Office of Complex Financial Institutions (OCFI). The OCFI will be responsible for the FDIC's role in the oversight of bank holding companies with more than $100 billion in assets and their corresponding insured depository institutions as well as for non-bank financial companies designated as systemically important by the Financial Stability Oversight Council (FSOC). The OCFI, in concert with the Federal Reserve Board, also will be responsible for reviewing resolution plans and credit exposure reports developed by the SIFIs. Also, the OCFI will be responsible for implementing and administering the FDIC's SIFI resolution authority and for conducting special examinations on SIFIs under the FDIC's backup examination and enforcement authority.

In addition, we reorganized our existing supervisory operations to create separate divisions for safety and soundness supervision and consumer protection. The Division of Risk Management Supervision is responsible for the FDIC's supervision and enforcement of safety and soundness standards at FDIC supervised institutions. The Division of Depositor and Consumer Protection (DCP) manages the FDIC's many responsibilities for depositor and consumer protection, including effective coordination with CFPB. This reorganization reflects the importance of dedicated focus on both risk management and consumer protection supervision and will enable the FDIC to best carry out its mission in the regulatory and market environment following the passage of the Dodd-Frank Act.

DCP has responsibility for compliance examination and enforcement programs as well as the depositor protection and consumer and community affairs activities that support that program. Relative to the CFPB, DCP will have a clear delineation of authority to

enforce consumer protection laws for institutions with $10 million or less in assets. DCP will work closely with the CFPB on the development of consumer protection regulations.

Finally, consistent with the requirements of Section 342 of the Dodd-Frank Act, the FDIC established a new Office of Minority and Women Inclusion (OMWI) in January. This new office assumed the responsibilities and employees of the FDIC's former Office of Diversity and Economic Opportunity, allowing for a smooth transition and no disruption in the FDIC's ongoing diversity and outreach efforts. The new organizational structure will also enable us to undertake some important new initiatives in this area. We are in the process of hiring an OMWI Deputy Director whose primary responsibility is overseeing enhanced contractor outreach and minority and women inclusion efforts, developing standards for assessing diversity policies and practices of regulated entities and establishing criteria for dealing with contractors who fail to meet standards for inclusion and diversity in their workforces. In addition, an OMWI Steering Committee has been created to promote coordination and awareness of OMWI responsibilities across the FDIC and ensure that they are managed in the most effective manner.

Current Condition of the Financial Services Industry

FDIC-insured institutions recorded six consecutive years of record earnings starting in 2001, culminating in net income of $145.2 billion in 2006. However, this short-term profitability was masking an underlying weakness in credit quality that would emerge starting in 2007 as real estate markets weakened and the U.S. economy moved toward recession. By 2008, annual industry earnings had fallen to just $4.5 billion, and in 2009, the industry recorded a net loss of $9.8 billion - the largest in its history. Quarterly provisions for loan losses taken by FDIC-insured institutions since the end of 2007 now total just under $645 billion, equal to over 8 percent of the book value of loans outstanding at the beginning of the period.

During 2010, the industry began reporting progressively lower levels of loss provisions, which led to a stabilization of industry earnings. FDIC-insured institutions recorded annual net income of $86.2 billion in 2010, still well below all-time highs but the highest level since before the recession started. New data show that industry financial performance strengthened further in the first quarter of 2011. Earnings rose and asset quality indicators improved compared to the last quarter and year-ago levels. However, problem assets remain at high levels, and revenue has been relatively flat for several quarters.

Banks and thrifts reported aggregate net income of $29 billion in the first quarter, which was 67 percent more than in first quarter 2010 and was the highest quarterly income in nearly three years. Industry earnings have registered year-over-year gains for seven consecutive quarters. More than half of institutions reported improved earnings in the quarter from a year ago, and fewer institutions were unprofitable.

The main driver of earnings improvement continued to be reduced provisions for loan losses. First quarter 2011 provisions for losses totaled $20.6 billion, which were about 60 percent below a year ago. This was the sixth consecutive quarter that provisions

declined from year-ago levels. Reduced provisions for losses reflect general improvement in asset quality indicators. The volume of noncurrent loans declined for the fourth consecutive quarter, and net charge-offs declined for the fifth consecutive quarter. All major loan types had declines in volumes of noncurrent loans and net charge-offs. However, the ratio of noncurrent loans to total loans of 4.71 percent remains above levels seen in the crisis of the late 1980s and early 1990s.

The positive contribution from reduced provisions outweighed the negative effect of lower revenue at many institutions. Net operating revenue - net interest income plus total noninterest income - was $5.6 billion lower than a year ago. This was only the second time in the 27 years for which data are available that the industry has reported a year-over-year decline in quarterly net operating revenue. Both net interest income and total noninterest income reflected aggregate declines. More than half of all institutions reported year-over-year increases in net operating revenue, but eight of the ten largest institutions reported declines.

The relatively flat revenues of recent quarters, in part, reflect reduced loan balances. Loan balances have declined in ten of the past eleven quarters, and the 1.9 percent decline in the first quarter was the second largest percentage decline in the history of the data. Balances fell in most major loan categories. Recent surveys suggest that banks have been starting to ease lending standards, but standards remain significantly tighter than before the crisis. Surveys also indicate that borrower demand remains sluggish. Growth of well-underwritten loans will be essential not only for banks to build revenues but also to provide a stronger foundation for economic recovery.

The number of "problem banks" leveled off in the quarter at 888, with total assets of $397 billion. The rate of growth in the number of problem banks has slowed considerably since the end of 2009. As we have repeatedly stated, we believe that the number of failures peaked in 2010, and we expect both the number and total assets of this year's failures in 2011 to be lower than last year's.

Near-Term Regulatory Priorities

As I have testified several times over the past year, the Dodd-Frank Act, if properly implemented, will not only reduce the likelihood of future crises, but will provide effective tools to address large company failures when they do occur without resorting to taxpayer-supported bailouts or damaging the financial system.

Our highest near-term regulatory priorities are two-fold: 1) implementing the various regulatory mandates that make up the new resolution framework for SIFIs, and 2) strengthening and harmonizing capital and liquidity requirements for banks and bank holding companies under the Basel III protocol and Section 171 of the Dodd Frank Act, the Collins Amendment.

SIFI Resolutions Framework

The new SIFI resolution framework has three basic elements. First, the new FSOC, chaired by the Treasury Secretary and made up of the other financial regulatory

agencies, is responsible for designating SIFIs based on criteria that are now being established by regulation. Once designated, the SIFIs will be subject to heightened supervision by the Federal Reserve Board and required to maintain detailed resolution plans that demonstrate they are resolvable under bankruptcy-not bailout-if they should run into severe financial distress. Finally, the law provides for a third alternative to bankruptcy or bailout-an Orderly Liquidation Authority, or OLA, that gives the FDIC many of the same powers over SIFIs that we have long used to manage failed-bank receiverships.

I would like to clarify some misconceptions about these authorities and highlight some priorities I see for their effective implementation.

SIFI Designation

It is important at the outset to clarify that being designated as a SIFI will in no way confer a competitive advantage by anointing an institution as Too Big to Fail. SIFIs will be subject to heightened supervision and higher capital requirements. They will also be required to maintain resolution plans and could be required to restructure their operations if they cannot demonstrate that they are resolvable. In light of these significant regulatory requirements, the FDIC has detected absolutely no interest on the part of any financial institution in being named a SIFI. Indeed, many institutions are vigorously lobbying against such a designation.

We believe that the ability of an institution to be resolved in a bankruptcy process without systemic impact should be a key consideration in designating a firm as a SIFI. Further, we believe that the concept of resolvability is consistent with several of the statutory factors that the FSOC is required to consider in designating a firm as systemic, those being size, interconnectedness, lack of substitutes and leverage. If an institution can reliably be deemed resolvable in bankruptcy by the regulators, and operates within the confines of the leverage requirements established by bank regulators, then it should not be designated as a SIFI.

What concerns us, however, is the lack of information we might have about potential SIFIs that may impede our ability to make an accurate determination of resolvability before the fact. This potential blind spot in the designation process raises the specter of a "deathbed designation" of a SIFI, whereby the FDIC would be required to resolve the firm under a Title II resolution without the benefit of a resolution plan or the ability to conduct advance planning, both of which are critical to an orderly resolution. This situation, which would put the resolution authority in the worst possible position, should be avoided at all costs. Thus, we need to be able to collect detailed information on a limited number of potential SIFIs as part of the designation process. We should provide the industry with some clarity about which firms will be expected to provide the FSOC with this additional information, using simple and transparent metrics such as firm size, similar to the approach used for bank holding companies under the Dodd-Frank Act. This should reduce some of the mystery surrounding the process and should eliminate any market concern about which firms the FSOC has under its review. In addition, no one should jump to the conclusion that by asking for additional information, the FSOC

has preordained a firm to be "systemic." It is likely that, after we gather additional information and learn more about these firms, relatively few of them will be viewed as systemic, especially if the firms can demonstrate their resolvability in bankruptcy at this stage of the process.

The FSOC issued an Advanced Notice of Proposed Rulemaking (ANPR) last October and a Notice of Proposed Rulemaking (NPR) on January 26, 2011 describing the processes and procedures that will inform the FSOC's designation of nonbank financial companies under the Dodd-Frank Act. We recognize the concerns raised by several commenters to the FSOC's ANPR and NPR about the lack of detail and clarity surrounding the designation process. This lack of specificity and certainty in the designation process is itself a burden on the industry and an impediment to prompt and effective implementation of the designation process. That is why it is important that the FSOC move forward and develop some hard metrics to guide the SIFI designation process. The sooner we develop and publish these metrics, the sooner this needless uncertainty can be resolved. The FSOC is in the process of developing further clarification of the metrics for comment that will provide more specificity as to the measures and approaches we are considering using for designating non-bank firms.

SIFI Resolution Plans

A major - and somewhat underestimated - improvement in the SIFI resolution process is the requirement in the Dodd-Frank Act for firms designated as SIFIs to maintain satisfactory resolution plans that demonstrate their resolvability in a crisis.

When a large, complex financial institution gets into trouble, time is the enemy. The larger, more complex, and more interconnected a financial company is, the longer it takes to assemble a full and accurate picture of its operations and develop a resolution strategy. By requiring detailed resolution plans in advance, and authorizing an on-site FDIC team to conduct pre-resolution planning, the SIFI resolution framework regains the informational advantage that was lacking in the crisis of 2008.

The FDIC recently released a paper detailing how the filing of resolution plans, the ability to conduct advance planning, and other elements of the framework could have dramatically changed the outcome if they had been available in the case of Lehman. [12] Under the new SIFI resolution framework, the FDIC should have a continuous presence at all designated SIFIs, working with the firms and reviewing their resolution plans as part of their normal course of business. Thus, our presence should in no way be seen as a signal of distress. Instead, it is much more likely to provide a stabilizing influence that encourages management to more fully consider the downside consequences of its actions, to the benefit of the institution and the stability of the system as a whole.

The law also authorizes the FDIC and the Federal Reserve Board to require, if necessary, changes in the structure or activities of these institutions to ensure that they meet the standard of being resolvable in a crisis. In my opinion, the ultimate effectiveness of the SIFI resolution framework will depend in large part on the

willingness of the FDIC and the Federal Reserve Board to actively use this authority to require organizational changes necessary to the ability to resolve SIFIs.

As currently structured, many large banks and nonbank SIFIs maintain thousands of subsidiaries and manage their activities within business lines that cross many different organizational structures and regulatory jurisdictions. This can make it very difficult to implement an orderly resolution of one part of the company without triggering a costly collapse of the entire company. To solve this problem, the FDIC and the Federal Reserve Board must be willing to insist on organizational changes that better align business lines and legal entities well before a crisis occurs. Unless these structures are rationalized and simplified in advance, there is a real danger that their complexity could make a SIFI resolution far more costly and more difficult than it needs to be.

Such changes are also likely to have collateral benefits for the firm's management in the short run. A simplified organizational structure will put management in a better position to understand and monitor risks and the inter-relationships among business lines, addressing what many see as a major challenge that contributed to the crisis. That is why-well before the test of another major crisis-we must define high informational standards for resolution plans and be willing to insist on organizational changes where necessary in order to ensure that SIFIs meet the standard of resolvability.

The Orderly Liquidation Authority (OLA)

There also appear to be a number of popular misconceptions as to the nature of the Orderly Liquidation Authority. Some have called it a bailout mechanism, while others see it as a fire sale that will destroy the value of receivership assets. Neither is true. The OLA strictly prohibits bailouts. While it is positioned as a backup plan in cases where bankruptcy would threaten to result in wider financial disorder, the OLA is actually a better-suited framework for resolving claims against failed financial institutions. It is a transparent process that operates under fixed rules that prohibit any bailout of shareholders and creditors or any other type of political considerations, which can be a legitimate concern in the case of an ad-hoc emergency rescue program. Not only would the OLA work faster and preserve value better than bankruptcy, but the regulatory authorities who will administer the OLA are in a far better position to coordinate with foreign regulators in the failure of an institution with significant international operations.

The FDIC has made considerable progress in forging bilateral agreements with other countries that will facilitate orderly cross-border resolutions. In addition, we currently co-chair the Cross Border Resolutions Group of the Basel Committee. It is worth noting that not a single other advanced country plans to rely on bankruptcy to resolve large, international financial companies. Most are implementing special resolution regimes similar to the OLA. Under the OLA, we can buy time, if necessary, and preserve franchise value by running an institution as a bridge bank, and then eventually sell it in parts or as a whole. It is a powerful tool that greatly enhances our ability to provide continuity and minimize losses in financial institution failures while imposing any losses on shareholders and unsecured creditors.

Under the OLA, the FDIC can conduct advance planning, temporarily operate and fund an institution under government control to preserve its value as a going concern, and quickly pay partial recoveries to creditors through advance dividends, as we have long done in failed-bank receiverships. The result will be a faster resolution of claims against a failed institution, smaller losses for creditors, reduced impact on the wider financial system, and an end to the cycle of bailouts.

The history of the recent crisis is replete with examples of missed opportunities to sell or recapitalize troubled institutions before they failed. But with bailout now off the table, management will have a greater incentive to bring in an acquirer or new investors before failure, and shareholders and creditors will have more incentive to go along with such a plan in order to salvage the value of their claims. These new incentives to be more proactive in dealing with problem SIFIs will reduce their incidence of outright failure and also lessen the risk of systemic effects arising from such failures.

In summary, the measures authorized under the Dodd-Frank Act to create a new, more effective SIFI resolution authority will go far toward reducing leverage and risk- taking in our financial system by subjecting every financial institution, no matter its size or degree of interconnectedness, to the discipline of the marketplace. Prompt and effective implementation of these measures will be essential to constraining the tendency toward excess leverage in our financial system and our economy, and in creating incentives for safe and sound practices that will promote financial stability in the future.

In light of the ongoing concern about the burden arising from regulatory reform, I think it is worth mentioning that none of these measures to promote the resolvability of SIFIs will have any impact at all on small and midsized financial institutions except to reduce the competitive disadvantage they have long encountered with regard to large, complex institutions. There are clear limits to what can be accomplished by prescriptive regulation. That is why promoting the ability of market forces to constrain risk taking will be essential if we are to achieve a more stable financial system in the years ahead.

Strengthening Capital Standards

At the height of the crisis, the large intermediaries that make up the core of our financial system had too little capital to maintain market confidence in their solvency. The crisis also showed how leverage can be masked through off-balance-sheet positions, implicit guarantees, securitization structures, and derivatives positions. While bank capital requirements are critically important to financial stability, the problem of excessive leverage in the financial system extends well beyond bank balance sheets to a wide range of nonbank financial companies and special-purpose vehicles.

Last year witnessed two landmarks in the history of bank capital regulation: the international Basel III agreement and Section 171-the Collins Amendment-of the Dodd Frank Act. Basel III strengthens the definition and increases the amount of bank capital so that banks will be able to withstand downturns and continue to lend. Basel III also requires capital for risks that the old rules did not adequately address and establishes an international leverage ratio. The Collins Amendment ensures large banks will be

required to hold at least as much capital in proportionate terms as would a smaller bank with similar exposures.

Implementing these significant improvements in capital regulation is, in my view, one of the most important near term regulatory priorities. I hope that a Final Rule implementing aspects of the Collins Amendment will be agreed upon before my term as Chairman comes to an end. Agency staffs are also drafting an NPR that will seek comment on the implementation of Basel III in the U.S., with publication targeted for later this year.

Why are these proposed changes in capital regulation so important? A first and obvious point is that banking and financial crises have devastating effects on economic growth and job creation. Maintaining strong capital levels consistent with a safe-and- sound banking system both promotes long-term economic growth and makes bank lending less procyclical.

Skeptics argue that requiring banks to hold greater amounts of higher-cost equity capital will raise the cost of credit and impair economic performance. [13] But recent studies that also account for the social cost of debt financing relative to equity show that higher capital requirements will have a relatively modest effect on the cost of credit and economic activity, while making the financial system more resilient to shocks. [14]

Our financial system was so vulnerable heading into the crisis because of shortcomings in capital regulation. Regulatory definitions of what counted as capital were too permissive, the level of high-quality capital was too low, our rules missed important risks, and a dangerous precedent-growing reliance by the regulators on banks' own risk estimates-was gaining momentum.

For over twenty years, there was international agreement that Tier 1 capital should be at least four percent of risk-weighted assets. Since four percent Tier 1 capital needed to consist "predominantly" of common equity and if "predominantly" means "at least half" (and it was in some countries), a bank could theoretically have as little as two percent common equity. The rest of the Tier 1 requirement could be met with hybrid debt or other non-loss absorbing capital. For example, common equity could include substantial amounts of deferred tax assets that are not available to absorb loss when a bank is unprofitable, mortgage servicing rights and other intangible assets whose values may be highly sensitive to assumptions, minority interests in consolidated subsidiaries that are not available to absorb loss outside the subsidiary, and equity investments in financial firms-interlinked exposures that increase contagion risk in the system. All of these deficiencies of the capital definition were exposed during the crisis.

While the definition of Tier 1 capital itself represents something of a mixed bag, the minimum Tier 1 capital ratio - four percent of risk weighted assets - is also subject to miscalculation that could leave the institution holding too little capital. Here again, the crisis demonstrated significant shortcomings with our rules. Complex and illiquid securitization exposures and OTC derivatives exposures in trading books required little capital. Some off-balance sheet vehicles (such as some Structured Investment Vehicles or SIVs) avoided capital requirements altogether. In addition, 2004 Basel II's advanced

approaches abandoned fixed capital requirements by loan category and allowed banks to calculate their risk-based capital requirements based on their own estimates of risk.

The FDIC's analysis showed the advanced approaches would significantly reduce capital requirements. The U.S. Quantitative Impact Study conducted in 2004-2005 validated our concerns: the 26 large organizations participating estimated that their Tier 1 capital requirements would drop by a median 31 percent compared to the agencies' general risk-based capital rules. For residential mortgages, widely agreed at the time to pose little risk, banks' own models produced median capital drops of almost 73 percent. The agencies' analysis also showed that different banks were estimating widely different capital requirements for loans with similar risk characteristics, an illustration of the underlying subjectivity of the advanced approaches.

Other countries acted with dispatch to implement the advanced approaches, without benefit of any objective constraint on bank leverage. Throughout the crisis and its aftermath, capital requirements in most European countries are lower under the advanced approaches than they were under Basel I, and often much lower.

I am proud of the FDIC's insistence that in the U.S. banks remain subject to the leverage requirements established by our statutory Prompt Corrective Action regulations, and that the transition to the advanced approaches would be gradual and subject to significant safeguards. Many large banks criticized us for taking that stand. But imagine if we had implemented the advanced approaches promptly in 2004, with all capital floors phased out in two years as originally scheduled by the Basel Committee. Large U.S. banking organizations almost certainly would have entered the crisis with far less capital to absorb losses, which would have caused even more failures and more retrenchment in credit availability.

In a speech before the International Conference of Bank Supervisors in Merida, Mexico in 2006, when I called for an international leverage ratio, the idea was summarily dismissed. By December, 2010, however, the Basel Committee finalized an international leverage ratio standard that is in some ways more stringent than our U.S. standard.

This policy shift reflects, of course, the lessons of the crisis about the dangers of excessive leverage. The development of the international leverage ratio, and the rest of the stronger capital standards of Basel III, also reflects the efforts of the men and women of the FDIC and our fellow banking regulators who worked tirelessly to negotiate these agreements.

The second landmark in capital regulation is Section 171 of the Dodd Frank Act-the Collins Amendment. In my view, this is the single most important provision of the Act for strengthening the capital of the U.S. banking system and leveling the competitive playing field between large and small U.S. banks. Section 171 essentially says that risk-based and leverage capital requirements for large banks, bank holding companies and nonbanks supervised by the Federal Reserve Board may not be lower than the capital requirements that apply to thousands of community banks nationwide.

More is on the agenda. The Basel Committee is developing capital standards for the most systemically important institutions that would augment the standards announced in December, 2010. These standards must be met with the same tangible common equity that Basel III requires for the new minimum standard for common equity capital. Allowing convertible debt to meet these standards suffers from a number of potential problems. Conversion in a stressed situation could trigger a run on the institution, downstream losses to holders of the debt, and potentially feed a crisis. Reliance on innovative regulatory capital is something that has been tried with Trust Preferred Securities. During the crisis, those securities did not absorb losses on a going concern basis and served as an impediment to recapitalizations. Regulators should avoid such devices in the future, and instead rely on tangible common equity.

Minimizing Regulatory Burden

The FDIC recognizes that while the changes required by the Dodd-Frank Act are necessary to establish clear rules that will ensure a stable financial system, these changes must be implemented in a targeted manner to avoid unnecessary regulatory burden. We are working on a number of fronts to achieve that necessary balance.

The FDIC is particularly interested in finding ways to eliminate unnecessary regulatory burden on community banks, whose balance sheets are much less complicated than those of the larger banks. At the January 20 meeting of the FDIC's Advisory Committee on Community Banking, we engaged the members - nearly all bankers - in a full and frank discussion of other ways to ease the regulatory burden on small institutions. We discussed ways of analyzing the impact of new regulations on community banks, how questionnaires and reports can be streamlined through automation, how to keep bank reporting requirements focused on the items most essential to risk management, and ways that bankers can communicate their concerns in this area to FDIC officials.

Above all, it is important to emphasize to small and mid-sized financial institutions that the Dodd-Frank Act reforms are not intended to impede their ability to compete in the marketplace. On the contrary, we expect that these reforms will do much to restore competitive balance to the marketplace by restoring market discipline and appropriate regulatory oversight to systemically important financial companies, many of which received direct government assistance in the recent crisis.

Addressing Future Economic Challenges

The task of restoring the normal functioning of our financial markets and institutions remains incomplete. The implementation of reforms under the Dodd-Frank Act will go a long way toward restoring long-term confidence and stability to our financial system. We also face a number of broader economic policy challenges, both in the near term and over the longer term. This section outlines two areas where policymakers urgently need to focus their attention if we are to secure the recovery and reduce the likelihood of future economic instability.

Securing the Recovery in U.S. Housing Markets

High risk mortgage lending and shortcomings in consumer protections for mortgage borrowers were among the most important underlying causes of the housing bubble and the financial crisis that resulted. Not only did the proliferation of high-risk subprime and nontraditional mortgage products help to push home prices up during the boom, but excessive reliance on foreclosure as a remedy to default has helped to push home prices down since the peak of the market over four years ago. While the U.S. economy is in its eighth quarter of expansion, mortgage markets remain deeply mired in credit distress and private securitization markets remain largely frozen. Serious weaknesses identified with mortgage servicing and foreclosure documentation have introduced further uncertainty into this already fragile market. The FDIC has emphasized the need for specific changes to address the most glaring deficiencies in servicing practices, including a single point of contact for distressed borrowers, appropriate write-downs of second liens, and servicer compensation structures that are aligned with effective loss mitigation.

The FDIC is especially concerned about a number of related problems with servicing and foreclosure documentation. "Robo-signing" is the use of highly-automated processes by some large servicers to generate affidavits in the foreclosure process without the affiant having thoroughly reviewed facts contained in the affidavit or having the affiant's signature witnessed in accordance with state laws. The other problem involves some servicers' inability to establish their legal standing to foreclose, since under current industry practices, they may not be in possession of the necessary documentation required under State law. These are not really separate issues; they are simply the most visible of a host of related, unresolved problems in the mortgage servicing industry.

As you know, even though the FDIC is not the primary federal regulator for the largest loan servicers, our examiners participated with other regulators in horizontal reviews of these servicers, as well as two companies that facilitate the loan securitization process. In these reviews, federal regulators cited "pervasive" misconduct in foreclosures and significant weaknesses in mortgage servicing processes.

Unfortunately, the horizontal review only looked at processing issues. Since the focus was so narrow, we do not yet really know the full extent of the problem. The Consent Order, discussed further below, requires these servicers to retain independent, third parties to review residential mortgage foreclosure actions and report the results of those reviews back to the regulators. However, we have heard concerns regarding the thoroughness and transparency of these reviews, and we continue to press for a comprehensive approach to this "look back."

These servicing problems continue to present significant operational risks to mortgage servicers. Servicers have already encountered challenges to their legal standing to foreclose on individual mortgages. More broadly, investors in securitizations have raised concerns about whether loan documentation for transferred mortgages fully conforms to applicable laws and the pooling and servicing agreements governing the securitizations. If investor challenges to documentation prove meritorious, they could result in "putbacks" of large volumes of defaulted mortgages to originating institutions.

There have been some settlements regarding loan buyback claims with the GSEs and some institutions have reserved for some of this exposure; however, a significant amount of this exposure has yet to be quantified. The extent of the loss cannot be determined until there is a comprehensive review of the loan files and documentation of the process dealing with problem loans. We also believe that the FSOC needs to consider the full range of potential exposure and the related impact on the industry and the real economy.

In April 2011, the Federal banking agencies ordered fourteen large mortgage servicers to overhaul their mortgage-servicing processes and controls, and to compensate borrowers harmed financially by wrongdoing or negligence. The enforcement orders were only a first step in setting out a framework for these large institutions to remedy deficiencies and to identify homeowners harmed as a result of servicer errors. The enforcement orders do not preclude additional supervisory actions or the imposition of civil money penalties. Also, a collaborative settlement effort continues between the State Attorneys General and federal regulators led by the U.S. Department of Justice. It is critically important that lenders fix these problems soon to contain litigation risk and remedy the foreclosure backlog, which has become the single largest impediment to the recovery of U.S. housing markets.

Controlling the Growth in U.S. Federal Debt

The banking industry today is very focused on credit risk. Over the last three years, FDIC-insured institutions have set aside over $640 billion in loan loss provisions and, in the process, written off more than half a trillion dollars in bad loans. This is by far the most severe credit event in our modern history. But even as institutions are focused on cleaning up balance sheets and building capital, the FDIC is encouraging them to remain focused on what could be the next major threat to financial stability - interest rate risk at depository institutions. Since the liability side of the bank balance sheet is typically shorter in duration than the asset side, banks tend to be adversely affected by rising interest rates. During a prolonged period of very low short-term interest rates and a steep yield curve, institutions may be tempted to make money by essentially borrowing short and lending long. However, structuring the bank portfolio in this way risks increasing the institution's vulnerability to losses in the event of rising interest rates.

The FDIC is actively addressing the need for heightened measures to manage interest rate risk at this critical stage of the interest rate cycle. In January 2010 we issued a Financial Institution Letter (FIL) clarifying our expectations that FDIC-supervised institutions will manage interest rate risk using policies and procedures commensurate with their complexity, business model, risk profile, and scope of operations. [15] That same month, the FDIC hosted a Symposium on Interest Rate Risk Management that brought together leading practitioners in the field to discuss the challenges facing the industry in this area. [16]

Effective management of interest rate risk assumes a heightened importance in light of the recent high rates of growth in U.S. government debt -- the yield on which represents

the benchmark for determining private interest rates all along the yield curve. Total U.S. federal debt has doubled in the past seven years to over $14 trillion, or more than $100,000 for every American household. This growth in federal borrowing is the result of both the temporary effects of the recession on federal revenues and outlays and a long-term structural deficit related to federal entitlement programs.

The U.S. has long enjoyed a unique status among sovereign issuers by virtue of its economic strength, its political stability, and the size and liquidity of its capital markets. Accordingly, international investors have long viewed U.S. Treasury securities as a haven, particularly during times of financial market uncertainty. However, as the amount of publicly-held U.S. debt continues to rise, and as a rising portion of that debt comes to be held by the foreign sector (about half as of September 2010), there is a risk that investor sentiment could at some point turn away from dollar assets in general and U.S. Treasury obligations in particular.

With more than 70 percent of U.S. Treasury obligations held by private investors scheduled to mature in the next five years, an erosion of investor confidence would likely lead to sharp increases in government and private borrowing costs. As recent events in Greece and Ireland have shown, such a reversal in investor sentiment could occur suddenly and with little warning. If investors were to similarly lose confidence in U.S. public debt, the result could be higher and more volatile long-term interest rates, capital losses for holders of Treasury instruments, and higher funding costs for depository institutions. Household and business borrowers of all types would pay more for credit, resulting in a slowdown in the rate of economic growth if not outright recession.

Over the past year, the U.S. fiscal outlook has assumed a much larger importance in policy discussions and the political process. Members of Congress, the Administration, and the Presidential Commission on Fiscal Responsibility and Reform have all offered proposals for addressing the long-term fiscal situation, but political consensus on a solution appears elusive at this time. It is likely that the capital markets themselves will continue to apply increasing pressure until a credible solution is reached. Already, the cost for bond investors and others to purchase insurance against a default by the U.S. government has risen from just 2 basis points in January 2007 to a current level of 42 basis points.

Financial stability critically depends on public and investor confidence. Developing policies that will clearly demonstrate the sustainability of the U.S. fiscal situation will be of utmost importance in ensuring a smooth transition from today's historically low interest rates to the higher levels of interest rates that are inevitable in coming years. Government policies to slow the growth in U.S. government debt will be essential to lessening the impact of this shock and reducing the likelihood that it will result in a costly new round of financial instability. In short, there is no greater threat to our future economic security and financial stability than an inability to control the size of U.S. government debt.

But as strongly as I feel about this issue, I feel just as strongly that a technical default on U.S. government obligations would prove to be calamitous. Investor confidence in U.S. Treasury obligations is absolutely vital to domestic and global financial stability and cannot be taken for granted. In the end, that confidence is based solely on the belief that policymakers will do whatever is necessary to make good on the nation's financial obligations. Any signal to the contrary risks permanently destroying the inviolable trust that investors the world over have placed in this nation for more than two centuries. I urge Congress to reaffirm this trust by committing to a responsible increase in the debt ceiling.

Conclusion

Chairman Capito and members of the Committee, I have provided today a fairly comprehensive account of the causes of the crisis, the FDIC's response to the crisis, the implementation of regulatory reform, and some important economic challenges that still lie ahead. As I conclude, I would like to share with you one of the most important lessons I have drawn from my experience as FDIC Chairman. It is that the most important attribute of effective regulation is the political courage to stand firm against weak practices and excessive risk taking in the good times. It is during a period of prosperity that the seeds of crisis are sown. It is then that overwhelming pressure is placed on regulators to relax capital standards, to permit riskier loan products, to allow higher concentrations of risk on the balance sheet and permit the movement of risky assets off the balance sheet, where they continue to pose a risk to stability.

The history of the crisis shows many examples when regulators acted too late, or with too little conviction, when they failed to use authorities they already had or failed to ask for the authorities they needed to fulfill their mission. As the crisis developed, too many in the regulatory community were too slow to acknowledge the danger, and were too slow to act in addressing it. The fact is, regulators are never going to be popular or glamorous figures, whether they act in a timely manner to forestall a crisis or if they fail to act and allow it to take place. The best they can hope to achieve is the knowledge that they exercised the statutory authority entrusted to them in good faith and to its fullest effect in the interest of financial stability, without regard to the political consequences.

While I share the sense that the worst is past for this economic cycle, the outcome of the next financial crisis is already being determined by decisions regulators are making today in the Dodd-Frank Act implementation process. The Dodd-Frank Act provides the tools to restore market discipline and put an end to the cycle of government bailouts under Too Big to Fail. These tools will be effective-and the large, systemically- important institutions will be resolvable-in the next crisis only if regulators show the courage today to fully exercise their authorities under the law.

For example, no financial firm wants to be designated as a SIFI, and there is even a great deal of resistance to the collection of information during the SIFI designation process. But we must have this information so that we can be assured that we will not be faced with the need to invoke the orderly resolution authority in a crisis without the

benefit of advance planning and a well-considered resolution plan. Similarly, the success of the SIFI resolution framework will critically depend on the willingness of the FDIC and the Federal Reserve Board to actively use their authority to require organizational changes at SIFIs that better align business lines and legal entities well before a crisis occurs. Unless structures are rationalized and simplified in advance, there is a real danger that their complexity could make a SIFI resolution far more costly and more difficult than it needs to be.

These authorities are being shaped now in the interagency rule-making process. If properly implemented, these measures can make our financial system significantly more stable by restoring market discipline to systemically-important institutions. If we lack the political courage to insist on these measures now, when market conditions are relatively calm, we will have no hope of preventing bailouts in the next crisis.

I have also emphasized in this testimony that strong capital standards are of fundamental importance in maintaining a safe-and-sound banking system that supports economic growth. Capital standards play a central role in preserving financial stability. Well-defined and objective capital requirements do not depend for their operation on the ability of supervisors to foresee risks that are not yet evident. Supervisory processes will always lag innovation and risk-taking to some extent, and restrictions on activities can be difficult to define and enforce. Hard and fast objective capital standards, on the other hand, are easier for supervisors to enforce, and provide an additional cushion of loss absorbency when mistakes are made, as will inevitably be the case.

We have already experienced a great deal of political resistance to higher capital requirements from industry representatives claiming that they will stifle growth and derail the expansion. These claims ignore the enormous economic costs of having too little capital coming into this crisis, as well as new research showing that the high social cost of debt financing argues for a more conservative approach to financing financial and economic activity in the years ahead.

Thank you, and I would be glad to take your questions.

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[1] Reinhart, Carmen and Ken Rogoff. *This Time Is Different: Eight Centuries of Financial Folly.* Princeton: Princeton University Press. 2009. p. xxv.

[2] Statement of Sheila C. Bair, Chairman, Federal Deposit Insurance Corporation on the Causes and Current State of the Financial Crisis before the Financial Crisis Inquiry Commission, January 14, 2010. http://www.fdic.gov/news/news/speeches/archives/2010/spjan1410.html

[3] See: *Interagency Statement on Subprime Mortgage Lending*, http://www.fdic.gov/news/news/financial/2007/fil07062.html and *Interagency Guidance on Nontraditional Mortgage Product Risks* http://www.fdic.gov/news/news/financial/2006/fil06089.html

[4] See: *Managing Commercial Real Estate Concentrations in a Challenging Environment* http://www.fdic.gov/news/news/financial/2008/fil08022.html

[5] See: *Commercial Real Estate Lending Joint Guidance* http://www.fdic.gov/news/news/financial/2006/fil06104.html

[6] See: *Policy Statement on Prudent Commercial Real Estate Loan Workouts* http://www.fdic.gov/news/news/financial/2009/fil09061.html

[7] See: *Interagency Notice of Proposed Rulemaking on Incentive-Based Compensation Arrangements* http://www.fdic.gov/news/news/financial/2011/fil11007.html

[8] See: *History of the Eighties - Lessons for the Future*, FDIC, 1997. http://www.fdic.gov/bank/historical/history/

[9] "FDIC: Celebrating 75 Years, Not a Penny Lost" won PRWeek's Public Sector Campaign of the Year in 2009. "The More You Know, the Safer Your Money" won PRWeek's Public Sector Campaign of the Year in 2010.

[10] These best practices were communicated in FDIC Financial Institutions Letter FIL-88-2008, Best Practices from the FDIC'S Forum on Mortgage Lending for Low- and Moderate-Income Households, http://www.fdic.gov/news/news/financial/2008/fil08088.html

[11] For more details on the FDIC Small-Dollar Loan Pilot Program and the Small-Dollar Loan Template, see: http://www.fdic.gov/smalldollarloans/

[12] "The Orderly Liquidation of Lehman Brothers Holdings under the Dodd-Frank Act," *FDIC Quarterly*, Vol. 5, No. 2, 2011. http://www.fdic.gov/regulations/reform/lehman.html

[13] See: "Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework," Institute of International Finance, June 2010. http://www.iif.com/press/press+151.php

[14] See: Admati, Anat, Peter M. DeMarzo, Martin R. Hellwig and Paul Pfleiderer. "Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Expensive." Stanford Graduate School of Business Research Paper No. 2065, March 2011. http://www.gsb.stanford.edu/news/research/Admati.etal.html

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2011. http://www.bankofengland.co.uk/publications/externalmpcpapers/extmpcpaper0031revised.pdf

[15] See http://www.fdic.gov/news/news/financial/2010/fil10002.html

[16] See: http://www.fdic.gov/news/conferences/symposium_irr_meeting.html

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