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Corporate Governance of Financial Institutions

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## **Corporate Governance of Financial Institutions**

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### **Abstract**

We identify the tension created by the dual demands of financial institutions to be value-maximizing entities that also serve the public interest. We highlight the importance of information in addressing the public's desire for banks to be safe yet innovative. Regulators can choose several approaches to increase market discipline and information production. First, they can mandate information production outside of markets through increased regulatory disclosure. Second, they can directly motivate potential producers of information by changing their incentives. Traditional approaches to bank governance may interfere with the information content of prices. Thus, the lack of transparency in the banking industry may be a symptom rather than the primary cause of bad governance. We provide the examples of compensation and resolution. Reforms that promote the quality of security prices through information production can improve the governance of financial institutions. Future research is needed to examine the interactions between disclosure, information, and governance.

Key words: financial institutions, governance, disclosure, information, market discipline, financial crisis

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# Corporate Governance of Financial Institutions

## I. Introduction

Possibly no other set of firms has been as closely examined in the past few years as banks and financial institutions.<sup>1</sup> Since the beginning of the financial crisis in 2008, countless papers and policies have been proposed, discussed, and enacted on nearly every aspect of banking and finance. The bulk of this attention almost certainly springs from the crisis, which became a powerful reminder of the importance of the financial system. The financial crisis transformed into a grim reality the academic assertion that a healthy economy cannot exist without a well-functioning financial system.

The Government Accountability Office was recently commissioned to generate a price estimate of the financial crisis, but the true cost will remain unknown for years—families uprooted, young adults unable to join the workforce, business owners faced with bankruptcy when credit lines disappeared overnight (Johnson 2011).

Banking, it would seem, is too important to leave entirely to bankers.

Yet in the face of all this inquiry, financial institutions remain frustratingly inscrutable. Despite nearly a century of concerted research and periodic financial crises, the connections between the governance of banks, their individual performance, and the

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<sup>1</sup> As a proxy measure for public interest, a recent Google search for “subprime mortgage lending” yielded 2.07 million hits. “Mortgage foreclosures” generated 1.85 million hits, and the Federal Reserve’s Troubled Asset Relief Program (TARP) garnered 3.5 million hits. And attesting to continued attention to financial institutions and financial markets, a recent search for “sovereign debt” yielded nearly 6.9 million matches.

long-run stability of the financial system are not well understood. Many questions about the causes of the crisis remain unanswered. The potential suspects are legion: The Financial Crisis Inquiry Commission's report alone names excessive borrowing, low mortgage standards, high leverage, securitization, a reliance on short-term funding, off-balance-sheet entities, special-purpose vehicles, over-the-counter derivatives, a lack of transparency, credit default swaps (CDS), and collateralized debt obligations (CDO) as causes or major contributors to the financial crisis (Angelides et al. 2011).

The motivation behind research into the governance of financial institutions is that financial crises are not random events, but are set in motion by the decisions of individuals and institutions operating within a given framework of laws, regulations, and tax codes. For each financial instrument that becomes a “weapon of mass financial destruction” or creates an economy-wide bubble, there is an underlying failure of incentives among the executives of financial institutions, their owners and creditors, and regulators. Corporate governance has the potential to identify problem spots where incentives are mismatched in a way that could lead to undesired firm behavior or even system-wide instability.

Any research into the governance of financial institutions consists of two parts. The first is an assertion of what kind of financial institution is most desirable, and the second is an examination of which mechanisms or institutions would be most effective in achieving that ideal. In this paper, we review some of the work that has been done on these questions and suggest directions for future research. We begin in Section II with a framework for what constitutes a well-governed financial institution. We focus on the desire for financial institutions to be both safe and innovative. This is a departure from

the typical value-maximization focus of corporate governance and reflects the unique position of financial institutions vis-à-vis the broader economy. The role of banks as efficient allocators of scarce capital throughout the rest of the economy requires a new definition of an ideal financial institution, as well as new metrics for measuring good governance and strong performance.

Aside from regulators, bank boards and market actors are the primary shapers of the governance structure of banks. In Section III, we outline the ability and incentives of bank boards and market actors to effectively shape the governance of financial institutions. Boards and markets may want financial institutions that behave differently from those desired by society. We also describe market failures, such as the moral hazard generated by government bailouts, and consider how these failures could incentivize market actors to be poor monitors and lax enforcers of market discipline.

This inattention is undesirable for achieving the goals of stability and growth through innovation, which are laid out under our initial framework. As market monitoring decreases, it becomes more likely that banks can increase their systemic risk unnoticed, which can lead to greater instability of the financial system. Furthermore, when risk is not properly priced, financial institutions can receive subsidized cheap capital, which can lead to distorted capital allocation within the real economy, where potential investments are not properly evaluated for their true risk-adjusted return. While distortions in the allocation decisions of financial institutions may be harder to observe directly than the effects of a full-blown financial crisis, their effects on the future growth of an economy may be just as lasting.

Governance failures are inextricably tied to underlying market failures. Section IV explores the role of information and disclosure in mitigating both fundamental market failures and their proximate manifestations as governance failures. While current research suggests that information is an integral part of governing financial institutions and addressing systemic risk in the financial system, further research is required to understand the complexities of the production, use, and quality of information in financial markets. Black (2000), Leuz and Verrecchia (2000), and Bushman and Smith (2003) argue that the functioning of securities markets is fundamentally predicated on the quality and credibility of disclosure. Admati and Pfleiderer (2000) point out that there are limits to disclosure in achieving welfare maximization when the disclosure is mandated. Ball (2001) connects disclosure with corporate governance.

Increased disclosure may not always be beneficial and, in the presence of market failures, may in theory bring instability or reduce market quality (Morris and Shin 2007, Pagano and Volpin 2010). However, a wide body of empirical research supports the finding that markets function better under increased transparency (for an example in the corporate bond market, see Goldstein et al. 2007).

Regulators can take two approaches when attempting to increase market discipline and disclosure. First, they can mandate the production of information outside of markets through increased regulatory disclosure. Second, they can directly motivate potential producers of information by changing their incentives. We first describe the current regime of information disclosure for banks, which is primarily compliance-based. We then use policies that, as an example of the first approach, call for executive compensation to be linked closely to market prices of financial instruments and, as an

example of the second approach, policies such as resolution that require financial institutions to release information on their plans for orderly liquidation.

Ultimately, we argue that the lack of transparency in the banking industry is a symptom rather than the primary cause of bad governance. Policies that motivate rather than mandate information production may therefore be more successful in governing financial institutions, although further research is needed.

We conclude with suggestions for further research on the governance of financial institutions, as well as the governance of the financial system as a whole. Throughout this paper, we stress the promise of information and disclosure in meeting the financial sector's dual mandates to be both safe and innovative.

This paper focuses primarily on banks and bank holding companies (BHCs), mainly because of the particularly intricate problems of corporate governance that arise within the banking industry. Although the opacity and interconnectedness of many financial institutions pose similar corporate governance problems, banks face further distortions as a result of deposit insurance, regulation, and the existence of “too big to fail.” As heavily regulated institutions that are already evaluated for safety and soundness, they may also be the entities where small changes in the focus of regulation can yield large returns in the efficiency and stability of the financial system as a whole.

Throughout this paper, we use the terms banks, BHCs, and financial institutions interchangeably. It should also be noted that we abstract away from the governance and characteristics of individual firms. Instead, we highlight the important features of market

failures that affect governance at the aggregate level, which ultimately affects the governance of individual firms as well.

As a final note, there are many topics usually covered in any discussion of the corporate governance of financial institutions. These include corporate boards, capital structure, executive compensation, information disclosure, and bank failure, among others. While we discuss some of these topics in this paper, any one of them deserves—and often has—dedicated survey papers (Adams 2010, Adams and Mehran 2003, Mehran, Morrison, and Shapiro 2011, Bushman and Smith 2001).

Our aim here is ultimately much broader, as we hope to provide a context for exploring how these individual elements interact in sometimes surprising ways. The topics we choose, and the value we believe they hold as stylized examples, are by no means exhaustive. Other reviews of the legal, sociological, and organizational views of governance can be found in Macey and O’Hara (2003), Davis (2005), and Fligstein and Choo (2005).

## **II. What Does a “Good” Financial Institution Look Like?**

In the United States, the legal status of many financial institutions as publicly listed companies means that corporate law treats them much like nonfinancial institutions. Perhaps accordingly, much of the research on the corporate governance of financial institutions has used governance and performance measurements based on value maximization. While we think this is a reasonable approach, we believe that the financial crisis was a powerful reminder that financial institutions are unique, and as such they

demand both a different paradigm for evaluation and different metrics for measuring their governance and subsequent performance. One potential approach looks at financial institutions through potentially conflicting demands: safety and soundness against innovation and improvement.

Banks are strange beasts. Much like electrical utilities or railroads, they are private-sector firms whose healthy functioning is in the public interest.<sup>2</sup> For such a ubiquitous entity, however, there is surprisingly little consensus on a deceptively simple question: What does the ideal bank look like? What is the ideal financial institution from the perspective of a social planner with responsibility for the financial system as a whole, as opposed to the ideal financial institution for investors and creditors of a single institution? Are these completely different entities, or can these ideals be reconciled?

Much of corporate governance theory and research is based on nonfinancial firms and is from the implicit viewpoint of the potential investor. The starting motivation is the existence of the modern corporation, where dispersed ownership is split from a professional management team. A viewer of this market structure may wonder why, with all the problems of moral hazard embedded in the structure and operation of the modern limited liability corporation, would any investor ever invest in a publicly traded firm?

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<sup>2</sup> Public utilities are similar to the financial sector in that they provide a public good but are subject to the disciplining force of the market. Beyond value maximization, electrical utilities are subject to a cost of service regulation that explicitly rewards efficiency. Once a rate cap is set by a democratically elected utility commission, a company is permitted to keep any savings made from efficiency gains that allow it to provide service below the set rate (McGlaughlin and Mehran 1995).

Moreover, how could investors possibly believe that their money would ever be returned (Shleifer and Vishny 1997)?

This principal-agent problem is elegantly solved by making management explicitly responsible for the value maximization of the firm. Equity-based compensation and the market for corporate control further incentivize management and align its interests with those of shareholders. Executives are also responsible to a board of directors, whose constituents are the shareholders of the firm. For nonfinancial firms, actions encouraging ownership of large equity blocks may also be taken to align incentives between management and owners. While such an approach may increase monitoring of insider actions for nonfinancial firms, it is less powerful for financial institutions given the existing regulatory restrictions on ownership and control (Shleifer and Vishny 1986).

However, as long as there are profitable opportunities for financial institutions that do not directly improve the quality of financial intermediation as a whole, the interests of shareholders and the public may be at odds. Although empirical results are mixed, value maximization is a powerful conceptual tool for addressing the problems of poorly run firms—rooting out corruption, for example, or punishing lazy or incompetent management. In a world with perfect information and the absence of market failures, the interests of shareholders would be aligned with those of society at large. Banks could increase profitability and achieve value maximization only through the pursuit of productive activities that improved the overall quality of financial intermediation (Stiglitz et al. 2009).

However, existing financial markets suffer from problems of imperfect information and moral hazard. Shareholders and creditors of banks may want a higher level of risk-taking than a social planner would deem optimal. The creation of moral hazard as a result of government bailouts and deposit insurance means that excess returns from any increase in risk would go to banks (and through them, their investors), while the cost of failure would be borne by society at large. Furthermore, the existence of imperfect information means that this strategy is possible for banks to pursue, as their risk is observed only imperfectly.

Let us set aside value maximization and consider instead the ideal financial institution from the point of view of a social planner. Here, we attempt to balance potentially conflicting desires. On the one hand, financial institutions and financial markets are incredibly important—too important to not work, even for a short amount of time. Any sudden shock that prevents the banking system from playing its role in financial intermediation may result in severe and prolonged distress in the real economy. Nonfinancial firms and households may take longer to recover from shocks than financial firms given the illiquid nature of their assets and the longer time horizon of many physical and human capital investments.

Historical examples of a frozen financial system—bank runs by individual depositors and their current reincarnation in the repo and commercial paper markets—underscore the need for smooth functioning of financial markets. Deadweight losses to the economy can come from both idiosyncratic and systemic failures in the financial system. As such, safety and soundness of banks must be a top priority.

On the other hand, this need for stability is counteracted by the benefits of innovation and improvement in the financial system. A large body of research has documented the links between finance and growth in both developing and developed economies (for example, King and Levine 1993, Rajan and Zingales 1998). From the functional perspective, a strong financial system provides five main services: 1) assisting the movement of goods and services through a system of payments, 2) supervising and disciplining borrowers, 3) identifying viable investments, 4) managing risk and uncertainty, and 5) aggregating society's savings for investment (Levine 1997).

As a society, we would like the financial system to improve the workings of these functions over time. However, the innovations may be destabilizing. For example, the creation of credit scores and their widespread adoption in quantifying the creditworthiness of potential borrowers have improved the screening ability of banks, allowing them to move beyond observed characteristics such as race and gender in extending loans. The increased standardization of the screening process, however, may have made banks less stable over time by contributing to the rise in nonbanking competitors, which also offer loans and have reduced the profit margins of traditional banking.

Are these two desires irreconcilable? Yes and no. Some policies, such as those aimed at weeding out predatory lending, may increase both stability and efficiency (Stiglitz et al. 2009). Other policies may require a normative choice on the desired trade-off between a safe financial system and an innovative one. Further research is needed to develop standards and metrics for evaluating the governance and performance of financial institutions.

While there is a body of research that measures the financial performance of financial institutions using proxies such as stock price, there is little research that seeks to directly measure the functioning of the financial system as a whole, from the viewpoint of either stability or efficiency. Many interesting questions remain unanswered: Do certain prices, such as those for equities, contain more information than they have in the past? Have the real prices for a given transaction risen or dropped over time with the introduction of the securitization process? Has the overall level of risk faced by society been managed by banks, or has it simply been hidden away from sight? How susceptible are individual financial institutions to idiosyncratic or systemic shocks? How stable is the financial system as a whole?

### **III. How Are Financial Institutions Governed?**

Many mechanisms govern financial institutions. All firms operate within a framework of laws, taxes, and social mores. Financial institutions face the added dimension of specific regulations and supervisory actions. Every major decision within the firm—entry, financing mix, investment, compensation, growth, and death—is highly influenced by internal governors such as the board of directors and risk officers and by external governors such as market participants, regulators, and legislators. These forces are not all equal and, as mentioned in the previous section, their interests do not always align because they do not always want the same outcomes or risk profile for financial institutions.

In order to govern financial institutions, an entity must possess both the ability and the will to do so. Much work has been done examining the influence of boards of directors and market forces upon financial and nonfinancial firms. A related line of literature examines the incentives regulators face when choosing both when and how to intervene in markets. Just as principal-agent problems exist between the owners and managers of firms, there may also be a disconnect between the interests of society and those of regulators as the designated protector of public interest (Levine 2011).

We set the questions of regulatory incentives and ability aside and focus instead on internal governance through boards of directors and external governance through market forces. We will also consider the role of market failures in determining the focus and intensity of the monitoring. Ultimately, we believe that the current responsibilities and incentives of bank boards make them weak forces for good governance through value maximization, if at all. Market participants also face large distortions that make them less incentivized to enforce good governance for financial institutions. This may be particularly true if good governance is defined as stability or efficiency, rather than profit maximization.

### **III.A. Board of Directors**

In supporting their mission to promote safety and soundness in financial institutions, U.S. bank regulators have looked to boards of directors to play an important role in guiding these institutions toward prudent behavior. While bank management is called upon to exercise day-to-day responsibility over bank affairs, the board has

traditionally been seen by regulators as a source of independent oversight of management's decision-making. Key decisions about strategy, risk appetite, organization, and internal controls are all viewed as appropriate items for board review. Regulators also expect boards to actively monitor progress in addressing control weaknesses cited by the regulators or other groups such as internal and external auditors. Many expectations have been placed on bank boards, reflecting the critical role banks have in our economy. Some of these requirements derive from federal law and/or regulations. Others are included in guidance provided to boards by the bank regulatory agencies. (See the appendix for a summary of some specific expectations.)

It is important to note, however, that directors sitting on bank boards owe a fiduciary duty only to the shareholders of the firm. These bank directors are held responsible for exercising the same duties that are assigned to all corporate boards by state corporate law. Primary among these are the duty of loyalty (putting the company's interests ahead of self-interest) and the duty of care (using the care ordinary and prudent persons would in similar circumstances). While empirically the exact role and power of boards in either crisis or normal conditions remain unknown, it is clear that directors are not expected to take into account the interests of other stakeholders (for example, creditors and taxpayers) when making decisions. Unless the firm is in distress, it may even be illegal for them to do so (Macey and O'Hara 2003).

Board oversight generally receives especially close regulatory attention when banks face financial difficulties, either specific to their institutions or more broadly felt by the industry as a whole. Notably, this was the case during the industry's turbulent period at the end of the 1980s. In light of the numerous bank and savings and loan

failures, legislative action was taken to strengthen board committees and hold them more accountable for bank performance. Since then, the role of bank boards has become even more challenging while being no less important. More than ever before, directors of large financial institutions are expected to understand the complexity of risks in innovative financial products and the rapidity with which severe losses can merge. They must oversee the increasing cross-border activity of their institutions, bringing them into contact with customers and counterparties from all over the world, each with its own governance structure and regulatory regime. And they must comprehend the technology that enables banks to serve new markets and develop new products, but that also can add to operational risk if not accompanied by appropriate controls.

Bank boards are also assuming increased importance as a result of the regulatory reforms enacted in the Gramm-Leach-Bliley Act. The legislation placed increased emphasis on governance mechanisms with broad enterprise-wide oversight of financial holding companies (FHCs) operating as “conglomerates”—namely, boards of directors. The legislation specifically cites the importance of proper management of these FHCs and restricts them from using expanded powers if management receives less than a satisfactory rating from regulators.

While in theory a board of directors may mitigate the principal-agent problem, individual directors may face incentives that make them imperfect monitors of management (Mace 1971). Legally, directors may be found liable for failing to fulfill their fiduciary duty but, practically speaking, proving this negligence is incredibly difficult. Successful prosecutions are rare (Valukas 2010). For example, under Delaware corporation law, directors can be found liable only if their lack of monitoring is

“egregious.... The Delaware courts have called this type of claim—referred to as a Caremark claim—‘possibly the most difficult theory in corporation law upon which a plaintiff might hope to win a judgment’” (Valukas 2010). As of January 2012, the FDIC has filed claims against 161 former directors and officers of banks that failed during the financial crisis period (FDIC 2012).

It is difficult to tell if directors have the ability and incentives to govern financial institutions. The empirical evidence is mixed. The strongest force acting upon directors may be the legal precedent that explicitly makes directors representatives of shareholders. While these laws continue to exist, they may preclude directors from using the stability and innovation of a firm as a yardstick for success. Insofar as directors continue to use stock prices and value maximization as a benchmark against which management is judged, financial institutions may continue to engage in systemically risky activities.

### **III.B. Market Participants**

Although corporate governance is usually described in terms of directors and boards, firms continually face “corporate” governance through their interactions with other market actors within competitive markets. In nonfinancial firms, market discipline is traditionally enforced by holders of equity and debt, as well as through overall competitive pressures (takeovers) from the market. As agents of potential equity investors and debt holders, securities analysts and credit ratings agencies are also involved. Firms receive direct market feedback through the price of their borrowing, the collateral demanded by counterparties, and the feasibility of accessing equity markets. Due to the

market failures present in financial markets, the opportunities and incentives for market actors to exert discipline upon financial firms differ from nonfinancial firms in several critical ways.

One avenue is through the effect of a weakened market for corporate control within the banking industry. While in competitive markets poorly run or otherwise underperforming firms are subject to the threat of hostile takeover bids by stronger institutions, any potential merger or acquisition involving bank holding companies is subject to regulatory approval. These transactions are scrutinized along anticompetitive and stability dimensions and may be rejected if there is enough existing banking market overlap between the institutions. For the largest banks today, these considerations may be binding, effectively precluding further noncrisis acquisitions. Aside from shrinking the pool of potential acquirers, the need for regulatory approval may also discourage takeovers through the introduction of delays, allowing targets the time to successfully muster defenses (Adams and Mehran 2003).

Equity holders are another possible source of external governance. However, while investors may be broadly interested in receiving a return on their initial investment, it is unclear how this interest translates directly into the monitoring of particular institutions. Investors are diversified, and failure is firm-specific. In an effort to boost their overall portfolio returns, investors may even prefer that some firms within their portfolio use a high-risk, high-return business strategy, as long as the investor is hedged against idiosyncratic failures.

Consider institutional investors. Over half of the equity of banks is held by institutional investors (Mehran 2006). While public interest may demand increased attention to safety and soundness in financial institutions, there is no economic framework suggesting that owners of these investment funds should care about safety, soundness, and default-related costs. Why should they be concerned with downside risk? Furthermore, much of the monitoring by equity holders that is predicted in the governance literature cannot be directed to the risk of failure. If it does exist in any form, it must instead be directed to value enhancement. After all, from the perspective of institutional investors, their own job is value maximization for their own shareholders.

Regulatory restrictions on holders of large blocks of bank equity may also weaken the incentives of equity holders to incur monitoring costs. While diversified investors may not care about firm-specific failure, a large block holder may have increased incentives to monitor a firm. Historically, block holders of financial institution equity have been highly regulated. Under the Banking Holding Company Act, investors with an equity stake defined as “controlling” are subject to supervision, regulation, and a series of legal requirements as a bank holding company. The reasoning behind the policy explicitly calls upon safety and soundness concerns and as such may provide guidance for future regulation:

“... [t]he Act ties the potential upside benefits of having a controlling influence over the management and policies of a banking organization to responsibility for the potential downside results of exercising that controlling influence. By tying control and responsibility together, the Act ensures that companies have positive incentives to run a successful banking organization but also bear the costs of their significant involvement in the banking organization’s decision-making process,

thus protecting taxpayers from imprudent risk-taking by companies that control banking organizations” (Federal Reserve System 2008).

For firms such as private equity funds, the increased disclosure and regulatory controls required by a controlling interest may have been a deterrent for becoming a block holder in the past. However, perhaps in an attempt to promote private equity investment in struggling banks, the Federal Reserve in 2008 increased the maximum size of an equity stake investors can hold before increased supervision is required. The maximum amount for a noncontrolling stake was raised from 25 percent to 33 percent of total equity, and the policy also allowed minority investors to have one seat (or two, under certain circumstances) on the board of directors. This may increase both the incentive and ability of equity investors to monitor financial institutions in the future.

Insofar as we believe that holders of equity blocks are not effective monitors, we may wish to look to creditors as agents of market discipline. Due to fundamental features of the debt contract and observed characteristics of the market for bank debt, creditors should have a clear incentive to monitor the debt of banks.<sup>3</sup> For example, for an average large bank, the book value of its credit is at least two times larger than equity outstanding (Adams and Mehran 2003). Furthermore, while half of the equity owners are large institutions—approximately 600—the nondepository creditors are much more concentrated—about thirty (Mehran 2010).

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<sup>3</sup> This incentive should be stronger since passage of the Dodd-Frank Act, which prohibits the bailout of too-big-to-fail institutions. However, it remains an open question whether the market finds this new “no bailout” regime credible. Ratings agencies continue to calculate different “standalone” and “support” ratings for financial institutions, where the second rating includes government guarantees (Pfleiderer 2011). Other studies have documented a statistically significant difference in the funding costs of too-big-to-fail banks and all other institutions (Baker and McArthur 2009).

While a critical assumption in monitoring by equity holders is the concentration (and identity) of block ownership, the existence of deposit insurance and the potential for government bailouts of systemically important institutions have significantly reduced the incentive of creditors to be effective monitors. Banks have the unique ability to attract funding in the form of deposits that are fully insured up to a limit and thus insensitive to risk. Moreover, unhealthy banks are taken over by regulators instead of having to face bankruptcy in public courts. Assets are subsequently sold to another institution (or, in the case of multiple bidders, to the highest bidder).

Regulators often assume part of the losses of a failed institution. This practice has explicitly protected depositors since the creation of the deposit insurance system in 1933 and in recent times has implicitly protected unsecured subordinated bank creditors through the expectation of “too big to fail.” This expectation that creditors will receive their full investment, even in the event of failure, was reinforced during the financial crisis. For example, the creditors of AIG were fully compensated (U.S. GAO 2011).

In order for market discipline to be effective, both ability and incentive must be present. The existence of government-assisted acquisitions, bailouts, and deposit insurance deadens the incentives of market monitors by capping their potential losses and weakens their ability to monitor firm conditions by interfering with the overall level of information generation and the information content of prices.

#### **IV. Financial Institutions, Market Discipline, and the Role of Information**

Information and market discipline are closely linked. Information production is both an input and outcome of market discipline. When market actors have the incentive to monitor banks, they produce information to do so. Regulators can also mandate the use and release of specific information. This mandated information, if it increases the ability of market actors to monitor banks, may increase market discipline.

Critically, however, the incentives of market actors to monitor banks remain unchanged by mandated disclosure. The level of overall information may therefore be less important than the origin and original motivation for its production. Further research is needed to understand the potential feedback loops (positive and negative) of regulation that mandates increased information, as well as regulation that motivates market actors to produce more information.

How then should we think about demands for increased transparency in financial institutions? By many standards, banks and BHCs are remarkably transparent. Banks must file a series of annual and quarterly reports with their primary regulator, and all bank holding companies must file regulatory reports with the Federal Reserve. These reports include detailed information on the balance sheets and income statements of the institutions, providing a standardized, credible set of data for comparison across firms or over time. Regulatory data is constantly evolving in response to current events. Since the financial crisis, for example, additional information is collected on derivatives and off-balance-sheet exposures.

However, the current regime of information disclosure is primarily one of compliance. The information demanded by regulators may be useful to market actors, or it may not be. If disclosed information is irrelevant or already known, then increased disclosure does not increase transparency.

Information aggregated by markets may also be imperfect. Observed governance failures are often caused by underlying, unobserved market failures. The critical assumption behind using debt or equity prices to measure the performance and health of firms is that these market signals accurately reflect the firms' risks or future prospects. But because market failures interfere with the ability and incentives of market actors to monitor banks, it is unclear whether debt or equity instruments are correctly priced for financial institutions. If these prices reflect the markets' perception of likely government bailouts, lagging perceptions of credit and asset quality, or the desire of stockholders for a high-risk, high-return investment, they are distorted signals. In that case, financial institutions may effectively remain opaque.

The connections between information, regulation, and market discipline are not well understood. We offer two stylized examples of compensation and resolution to highlight the importance of different details between policies that seek to use information to increase market discipline. In the previous section, we argued that in order for an entity to govern financial institutions, it must possess both the ability and the will to do so. Here, we consider the role of information in affecting the incentives and ability of market actors to monitor and discipline banks.

Market discipline can be an effective mechanism for governing banks, whether the desired goal is value maximization, stability, innovation, or some combination of the three. Any policy with the aim of increasing market discipline takes one of two approaches: encouraging the bank to pay more attention to the market, or encouraging the market to pay more attention to the bank. Of the two examples examined in this section, tying executive compensation to a market measure such as equity prices or default insurance rates follows the first approach. The creation of newly mandated “living wills” and resolution plans follows the second.

#### **IV.A. Compensation and Financial Institutions**

Regulation can attempt to incentivize banks and their management to pay more attention to the market. Within the corporate governance literature are various approaches to align the incentives of management and stakeholders through compensation schemes that use market measures. A truism of economics is that people respond to incentives, and it is hard to think of what could provide more of a direct incentive than a paycheck. These policies do not target market discipline directly. Instead, market measures may be used directly or as inputs into regulatory decision-making—for example, as triggers for action or evaluations. Often, the information content of the signal—and the quality of the market process by which information was agglomerated into a single price—is held constant and remains unaffected by the given regulatory change.

The financial crisis sparked renewed interest in compensation practices in the financial services industry. Compensation is usually considered within the context of

incentives: Before the financial crisis, did risk takers and risk monitors have inadequate financial incentives to reduce their firm's exposure to risk? Was management excessively rewarded for luck when times were good and incentivized to gamble at the first sign of losses? Compensation can be designed to align the behavior of management with the preferences of shareholders, or as a tool for encouraging executives to think about safety and soundness.

We start with the base case of a flat salary—a fixed amount of compensation that a manager receives regardless of any changes to the firm's performance, riskiness, or efficiency. While we may worry in the case of fixed compensation that a manager will not expend any effort, the inclusion of stock and/or stock options will help align the manager's objectives with those of shareholders by giving the manager more “skin in the game” through this stock-price-sensitive pay. If instead we wish to minimize risk more directly, one proposed approach is to tie managerial bonuses to a proxy for bank credit quality (Bolton, Mehran, and Shapiro 2010). As the rate of an institution's credit default swap (CDS) is essentially a market price for the credit and liquidity risks of a bank, a low or declining CDS spread would translate into a higher cash bonus, and vice versa. Managers would have a direct incentive to minimize risk that does not enhance the value of the enterprise.

As for the profit-based cash bonuses that are currently widespread within the financial industry, they are undesirable from the stance of both risk and return. Under this policy, cash leaves the firm without any mechanism to safeguard against profits made by piling on risk or looting the overall value of the firm (for related suggestions, see Edmans and Liu 2011, French et al. 2010, and Bebchuk and Spamann 2010).

Any curtailment of bonuses is roughly analogous to forcing banks to cut dividends to preserve capital and protect creditors. While cutting dividends imposes a cost directly on equity holders and only indirectly on risk-taking employees, tying compensation to credit risk measures directly imposes a cost on potential risk-takers. Moreover, the approach effectively makes bonus payments contingent on ex post performance. In addition to their potential impacts on managerial decisions, these policies may have a positive impact on the capital and stability of the bank.

One side benefit of the CDS approach is that it creates a built-in stabilizer using compensation. When banks are performing well and their credit quality is strong, bonuses will be paid out. However, when their performance deteriorates and their credit quality weakens (and therefore they experience an increase in their CDS spread), banks will be forced to conserve capital through the automatic adjustment of bonuses.

Equity compensation that uses stock options can similarly serve as a stabilizing force. The options portion of compensation will be exercised only when times are good and the stock price of the firm goes above the option price. Conversely, when the stock price of the firm drops below the option price, the option is never exercised and the cash never leaves the capital buffer of the firm. Large grants of stock options may therefore contribute to bank regulatory capital and reduce its leverage (Mehran and Rosenberg 2007). Compensation anchored to ex ante measures may also act as a commitment device against, for example, outside pressures from politicians worried about lost tax revenue or profitable firms claiming that risk-taking has not increased.

This approach, where regulatory mandate forces banks to pay more attention to markets, has several serious drawbacks when markets misprice the risk of financial institutions. At best, compensation based on equity or debt prices may be based on noisy or lagged information. At worst, changes in compensation may incentivize executives to engage in earnings management or window dressing, removing further information from market prices and leaving the institution even more opaque (Graham et al. 2005).

#### **IV.B. Government-Assisted Acquisition and Resolution of Financial Institutions**

Regulation can also encourage markets to be better monitors of banks. Through their direct effect on the incentives of market participants, the resolution and “living wills” required by Dodd-Frank have the potential to discipline financial institutions in a way that regulatory mandates cannot. This is seen particularly in their impact on information production. Market participants are directly incentivized to monitor and discipline banks more closely through regulation that attempts to address some of the existing market distortions introduced by the process of bank failure.

In times of distress and failure, financial institutions differ from their nonfinancial counterparts in many ways. While bankruptcy courts and workouts play a critical role in the reorganization of poorly performing nonfinancial firms, much of the capital market discipline of unhealthy banks is replaced by supervisory efforts such as prompt corrective action and government-assisted acquisitions. Traditionally, bankruptcy has not been considered a viable approach in the banking industry because of the opaque nature of bank asset value, as well as the fear of bank runs and widespread contagion of fire sales

across the financial system. Furthermore, given that the takeover market in the financial industry is weak (as described in the previous section), there may be fewer market options for minimizing losses to the deposit insurance fund through private mergers or acquisitions.

While nonfinancial firms can enter distress and bankruptcy and reemerge as effectively the same entity, depository institutions cannot. Under the federal law of Prompt Corrective Action (PCA), as a bank moves from being considered well capitalized to adequately or even undercapitalized, regulators must initiate a series of restrictions on anything from new business activities to asset and loan growth. Regulators may also demand the removal of management or the board of directors. Finally, when the tangible-equity-to-asset ratio falls below 2 percent, regulators must take steps to close the institution.

This process has potential ramifications for monitoring over the entire life cycle of the financial institution. The market for information in the banking industry is composed of three players, broadly defined: the financial institution, its regulators, and the security analysts (both equity and credit) who serve as a proxy for individual and institutional investors.

Outside of the financial industry, credit and equity analysts monitor firms and their securities, but their monitoring intensity is roughly negatively correlated. Equity analysts may be more active when the firm is a high performer, while credit analysts remain passive. When a firm is doing poorly, however, there may be little reward for any information collected by equity analysts. Typically, analysts don't follow a firm about six

months prior to bankruptcy filings, and they may stop producing reports once the firm is in visible distress (Mehran 2006). On the other hand, credit analysts are often active when firms are doing poorly because investor demand for the asset valuation of distressed firms is very high as the acquisition or restructuring of the weakening firm becomes more likely. For financial institutions, however, the failure process is truncated before their assets can become reevaluated in the market.

The difficulty of transferring opaque assets may also lower investor demand. Credit analysts are not rewarded for producing information on the prospects of a bank, or the value of its assets, and therefore have little incentive to do so. Credit quality may be slow to change to reflect asset valuation within banks. The implication is that credit market discipline under PCA is weak and equity market discipline is even weaker.

Could it be that financial institutions will voluntarily disclose information, perhaps in an effort to differentiate themselves from competitors? Regulators demand a baseline amount of disclosure. Firms have the discretion to produce voluntary disclosure beyond these compliance measures. However, voluntary disclosure in the financial industry is small relative to that in other industries. Banks are also less likely to rely on indirect means of signaling private information on profitable opportunities such as increasing leverage or dividends. Banks are already highly levered institutions (large banks have a liability-to-asset ratio of approximately 92 percent). Furthermore, as the cost of borrowing for a bank is already subsidized by the implicit and explicit guarantees of its debt, it has little to gain through increased disclosure to potential creditors.

Committing to a large dividend can be very costly if the bank's prospects change at any point in the future and the dividend must be cut. Perhaps for this reason, dividend cuts are less prevalent in the banking industry than in other industries. Without these commitment devices to signal the credibility of voluntarily disclosed good news, markets may find the discretionary disclosure of financial institutions less credible than that of nonfinancial firms. Adams and Mehran (2003) argue that the announcement effect of most corporate events (except dividend cuts) is far less economically significant for banks than firms in other industries. Finally, financial institutions may be reluctant to disclose negative information voluntarily if there is no reward for early disclosure. In fact, firms may be punished for this unilateral action through the loss of managerial discretion due to increased regulatory scrutiny.

The lack of incentives for banks to voluntarily disclose information—and the lack of incentives for their creditors and investors to demand that they do so—has the potential to change in a world of resolution. Dodd-Frank mandates that all bank holding companies with consolidated assets of \$50 billion or more and any nonbank financial company designated by the Financial Stability Oversight Council as systemically important must prepare a “living will.” According to rules drawn up by the Federal Reserve, a resolution plan would contain, in addition to other information,

“the manner and extent to which any insured depository institution affiliated with the company is adequately protected from risks arising from the activities of nonbank subsidiaries of the company; detailed descriptions of the ownership structure, assets, liabilities, and contractual obligations of the company; identification of the cross-guarantees tied to different securities; identification of

major counterparties; a process for determining to whom the collateral of the company is pledged...” (Federal Reserve System and FDIC 2011).

By collecting and publicly revealing elements of these plans, regulators are likely to have a marked effect on information production and security prices. Market participants will have an increased ability to understand the losses they potentially face if their borrowers and counterparties fail—and thus will have an increased incentive to push for changes that make the firm less likely to fail in the first place.

There are other reforms with the potential to change information production and improve market discipline. The disclosure of stress-test results and their implications for the health of the banking sector as a whole, and/or periodic assessments of bank capital adequacy in light of various economic scenarios, provides data for credit and equity analysts to consider variation across time and across firms. These forecasts can affect the capital structure, payout, and compensation policies of a firm, among many other decisions. This information may also inform and empower the board in its dialogue with management about risk management and overall strategy.

Historically, legislators and regulators have provided the standards for much of the information available on firms, particularly when demanded by the market in times of general stress. This has been based on the worry that disclosure could prompt bank runs. It is likely that, given the no-bailout policies under Dodd-Frank and the introduction of resolution through "bridge banks" or recapitalization, credit markets may become more active and credit analysts more informed about the value of the firm at default. Insofar as equity prices of financial institutions then become more sensitive to the value of the

underlying bank assets, equity analysts will also increase their scrutiny of the financial industry.

Arguably, this information will affect the bank cost of borrowing and ultimately limit the amount of credit available to a given institution, and perhaps its size. Disclosure may also affect the cost of capital, because the return is now dependent on different states of nature. If the price increases, then firms may be constrained and forced to borrow less—or the burden of proof is on the firm to demonstrate that it has credibly limited the possible range of risky outcomes. As it is now, the cost of capital is very low for financial institutions, so they are free to invest in potentially inferior projects. More research is needed to understand whether financial markets are, in fact, competitive. While in the financial industry profit margins may be very small for individual firms, there is a huge amount of capital directed to the industry as a whole.

A final note on Prompt Corrective Action. PCA was passed in 1991 as part of the FDIC Improvement Act, one of the legislative responses to the savings and loan failures of the 1990s: Previously, regulators faced the perverse incentive of delaying the closure of an already insolvent institution in order to let it attempt to regain solvency by doubling down on existing bets. PCA clearly changed the incentives of regulators by providing a clear benchmark against which they could be judged and held accountable. However, PCA does not change the ability of regulators to distinguish between a temporarily troubled firm and one that is irreparably damaged. It also incentivizes regulators to rely heavily on capital ratios for determining the health of an institution, since that is the metric used in the law.

If the ultimate goal of PCA is to minimize taxpayer infusions for the deposit insurance fund, then perhaps it is well designed. But if instead it is made to ensure the health of the financial system, it may be poorly targeted. Specific standards for regulatory responses are useful for increasing accountability, but do nothing to address the incentive mismatches and market failures that originally led the bank toward failure. If these incentive and market problems remain unaddressed, they will continue to allow the build-up of systemic risk or distortions in economy-wide investment decisions.

## **V. Conclusion**

Many new instruments and reforms have been proposed in the aftermath of the recent financial crisis. The first is the requirement for higher equity capital. In addition, new capital-conservation buffers have been suggested that would set automatic responses in order to preserve capital as it is depleted. Once the firm hits a particular level in the buffer, dividends are automatically suspended and rerouted to a reserve where they are used to replenish capital. These buffers are useful in an uncertain world, where no regulator or institution can ever hope to identify all potential shocks before they appear (Acharya, Mehran, and Thakor 2010).

A potential drawback exists, however, in that while many of these promising mechanisms increase the safety and soundness of financial institutions through higher capital and SIFI surcharges, among many other requirements, one can argue that these instruments may have negative effects on market discipline. Further research is needed to examine the dynamics between buffers for idiosyncratic shocks and the changes in a

firm's incentives to take on increased risk, systemic or otherwise. We also need to better understand the market response to these policies: Will the distortion in debt/equity funding improve as financial institutions are perceived as less risky? Or will market participants remain disinclined to demand improvement from the financial sector?

In this paper, we claim that corporate governance has the potential to identify mismatched incentives that could lead to bad behavior by firms or systemic instability. Any such research will have two components: 1) an assertion of what kind of financial institution is most desirable, and 2) an examination of which mechanisms or institutions would be most effective in achieving that ideal. Financial institutions occupy a unique position within the broader economy. It therefore may be desirable to develop new standards and definitions of what an ideal financial institution looks like, particularly along the lines of both safety and innovation.

Governance failures are often tied to underlying market failures. Information and disclosure play an important role in mitigating both fundamental market failures and their manifestations as governance failures. Regulators can choose one of two approaches when attempting to increase market discipline and information disclosure. First, they can mandate the production of information outside of markets through increased regulatory disclosure. Second, they can directly motivate potential producers of information by changing their incentives. If the lack of transparency in the banking industry is a symptom rather than the primary cause of bad governance, then policies that motivate rather than mandate information production may therefore be more successful in governing financial institutions.

More generally, we stress the importance of information and incentivizing market discipline through disclosure as a critical component of studying and improving the corporate governance of financial institutions. How market discipline will shape behavior and how the information content of prices will be affected depend on who produces the information, what is disclosed, when it is disclosed, and under what economic conditions it is disclosed. Given the homogeneity of banks and bank holding companies and the contagious nature of information, it is important who discloses the information. However, even more important is what is disclosed. Unrestricted disclosure by a bank about itself and its predictions of industry prospects will affect prices. It may even have the potential to reduce market confidence in the supervising regulators, if private and public statements about the current and future health of the industry are at odds.

Disclosure by regulators is also likely to affect information production. Regulators and market participants can influence the information content of securities prices and promote market discipline. Their activities may be complements or substitutes at different times, and ultimately their improved functioning will improve markets and prices. To answer these questions, future research will need to examine the interactions between disclosure, information, and the governance of financial institutions.

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## Appendix

### **Regulatory Expectations for Bank Boards**

- **Board size:** Banks that are members of the Federal Reserve System are required to have between five and twenty-five members on their boards (12 USC 71a).
- **Director appointments:** State member banks and bank holding companies must give the Federal Reserve thirty days prior written notice before adding or replacing a board member if the entity is not in compliance with all minimum capital requirements. The Federal Reserve has the power to disapprove the notice (12 CFR 225.72). Bank regulatory agencies may also order a new election of the board of directors of any insured depository institution if it is significantly undercapitalized, or if it is undercapitalized and fails to submit an acceptable capital restoration plan or fails to implement material aspects of the plan (12 USC 1831).
- **Bank policies:** Bank boards have been given the following designated responsibilities with respect to specific bank policies:
  1. **Real estate lending:** Policies for real estate lending must be reviewed and approved by the board at least annually (12 CFR 34.62). Specific issues are required to be addressed in the policies, including reporting to directors on loans outside policy limits and those in excess of supervisory loan-to-value ratios (12 CFR Part 365, Appendix A).
  2. **Bank Secrecy Act:** Policies designed to ensure and monitor compliance with the Bank Secrecy Act must be in writing, approved by the board, and noted in the board minutes (12 CFR 208.63).
  3. **Interbank liabilities:** Policies designed to prevent excessive exposure to any individual correspondent bank must be in writing and reviewed and approved by the board of directors at least annually (12 USC Part 206).
- **Internal controls/compliance:** Bank boards have been charged with specific responsibilities related to the control environment and compliance program at the institution.
  1. **Suspicious activity:** Bank boards or a designated committee shall be promptly notified by management of a filing of any suspicious activity report (12 CFR 208.62).
  2. **Internal audit:** Boards of banks with total assets in excess of \$500 million shall establish audit committees, whose members are independent, outside directors. These audit committees are given specific duties including reviewing the basis for the annual financial statements, the public accountant's report, and management's internal control report. For banks with total assets in excess of \$3 billion, specific expertise and independence criteria for members of this committee must be met (12 CFR Part 363).

• **Loans to officers and directors:** Loans that exceed the higher of \$25,000 or 5 percent of a bank's capital and surplus, or which in the aggregate exceed \$500,000, must be approved in advance by a majority of the board, with the interested party abstaining from participating in the voting (12 USC 375).

• **Management interlocks:** A management official (defined to include a director) of a depository institution or bank holding company may not serve at the same time as a management official of an unaffiliated depository institution or bank holding company if the entities in question have offices in the same community. The prohibition against interlocks also applies where each entity has offices in the same metropolitan statistical area if the entities each have total assets of \$20 million or more. Furthermore, for very large institutions,<sup>4</sup> management interlocks are prohibited regardless of the location of the two entities (12 CFR 212).

• **Audit committees:** These board committees have received significant attention in law and regulation.

1. **Independence:** All insured depository institutions with total assets of at least \$500 million are required to establish board audit committees comprised solely of independent, outside directors (12 CFR 363.5). All public companies registering with the SEC (including bank holding companies) must have audit committees comprised of independent members.
2. **Expertise:** For depository institutions with total assets in excess of \$3 billion, at least two members of the audit committee shall have banking or financial management expertise (12 CFR Part 363, Appendix A). For public companies, audit committees must be comprised of a minimum of three directors, all of whom must be financially literate (i.e., able to read and understand financial statements<sup>5</sup>), with at least one member having accounting or financial management expertise (i.e., experience or a background that suggests financial sophistication).

## Regulatory Guidance

Regulatory guidance sets out more specific expectations for boards in such areas as risk management, operations, compliance, organization, lending, and audit. This guidance is typically provided in examination manuals, supervisory letters, and director's "primers."

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<sup>4</sup> In particular, a management official of a depository organization with total assets exceeding \$2.5 billion may not serve at the same time as a management official of an unaffiliated depository organization with total assets exceeding \$1.5 billion, regardless of the location of the two depository organizations.

<sup>5</sup> This definition is taken from the NASD/AMEX rules. The NYSE allows board discretion in determining financial expertise and literacy.

- **Bank affairs:** Responsibility for the affairs of the bank rests firmly and squarely on the board of directors, which delegates day-to-day business to its officers and employees. The directors are held ultimately responsible for the soundness of the bank (Commercial Bank Examination Manual).

- **Bank policies:** Directors are responsible for establishing the policies that govern and guide the operations of the bank and for reviewing and approving all policies annually (Commercial Bank Examination Manual). Most policy exceptions should require the board's approval (New Director's Primer).

- **Risk Management**

1. Risk management processes: Guidance defines both broad and specific board responsibilities in the risk management area. Directors are to approve the business strategies and policies that relate to managing and taking risk. They are to provide clear guidance as to the level of risk exposure acceptable to the bank and to approve risk exposure limits to conform with any changes in the institution's strategy (SR 95-51).
2. Interest rate risk: The board is given responsibility for establishing the bank's tolerance for interest rate risk, including approving relevant risk limits, identifying lines of authority for managing risk, and ensuring that adequate resources are devoted to the management of interest rate risk (SR 96-13).
3. Fiduciary risk: Overall fiduciary business strategies and policies are to be approved by the board (SR 96-10).
4. Securities and derivatives used in nontrading activities: The board should approve overall business strategies and significant policies governing these activities. If board members do not have detailed technical knowledge of these activities, they must ensure they have adequate access to independent legal and professional advice regarding the bank's derivatives holdings and securities (SR 95-17).
5. Securitization activity: Detailed responsibilities are set out for the board, including ensuring that 1) procedures are in place to monitor securitization pool performance on an aggregate and individual transaction level, 2) conservative valuation assumptions and modeling methodologies are used to establish retained interests, and 3) internal limits are in place to govern the maximum amount of retained interest as a percentage of total equity capital (SR 99-37).
6. Equity investment and merchant banking activity: The board is called upon to approve portfolio objectives, overall investment strategies, and investment policies that are consistent with the institution's financial condition, risk profile, and risk tolerance. It should approve limits on the aggregate investment and exposure amounts, the types of investments, and the industry, sector, and geographic concentrations in the portfolio (SR 00-9).

- **Lending**

1. Residential real estate: All exceptions to regulatory loan-to-value guidelines, along with the performance expectations of the portfolio, should be reported to the board at least quarterly (SR 99-26).

2. Real estate lending standards: The board should review and approve at least annually the bank's real estate lending policies that reflect the level of risk acceptable to the board (SR 93-1). The board is also responsible for reviewing and adopting policies and procedures that establish an effective real estate appraisal and evaluation program (SR 94-55).
3. Subprime lending: The board should approve policies and procedures if the bank engages in subprime lending in any significant way (SR 99-6).
4. Commercial loans: Bank directors have the obligation to monitor lending practices, to see that bank policies are enforced, and to ensure that lending practices remain within the institution's overall management ability (SR 98-18).
5. Loan loss reserves: Together with management, the board is responsible for maintaining the allowance for loan loss reserves at an adequate level (SR 93-70).
6. Asset-backed commercial paper program: Significant policies and procedures for an asset-backed commercial paper program should be reviewed and approved by the board (SR 92-11).
7. Highly leveraged financings: Significant policies and procedures, including those for internal lending limits and credit review and approval, should be approved and reviewed periodically by the board (SR 89-5).

#### • **Internal Controls/Compliance**

1. Audit: The board should ensure that the manager of internal audit reports directly to it or its audit committee, that the manager has no operating responsibilities, and that resources devoted to the internal audit function meet the demands posed by the bank's current and planned activities. In addition, the audit committee should review and approve the internal audit risk assessment and scope of the audit plan, periodically review adherence to the plan, assess whether internal control weaknesses are being resolved expeditiously by management, and give the internal auditor an opportunity to discuss findings without management present (SR 97-35).
2. Examination reports: The board should review examination reports and initiate action to correct any deficiencies noted (Commercial Bank Examination Manual).
3. Litigation: Directors should review pending litigation against the bank (Commercial Bank Examination Manual).

#### • **Operations**

1. Information security: The board has ultimate responsibility for the level of information security risk taken by the bank. Together with management, it is responsible for ensuring that spending on information security is appropriate to the magnitude and nature of the risks (SR 97-32).
2. Corporate business resumption and contingency planning: The board is charged with 1) establishing policies and procedures and assigning responsibilities to ensure that comprehensive corporate business resumption, contingency planning, and plan testing take place, and 2) annually reviewing the adequacy of the institution's business recovery and contingency plans and test results (SR 97-15).

3. Client/server systems: The board should develop and adopt appropriate policies, practices, or procedures covering management's responsibilities and controls for all areas of client/server computing activities (SR 96-22).
4. Fedwire third-party access: The board should approve the role and responsibilities the bank has established for its Fedwire funds transfers (SR 95-48).
5. Insurance: The board should review and approve all insurance policies as they are obtained or renewed (Commercial Bank Examination Manual).
6. Net debit cap: The board should review and approve semiannually the bank's net debit cap for large-dollar wire-transfer systems and the supporting self-assessment semiannually (Policy Statement on Large-Dollar Wire Transfers).

• **Organization**

1. Officer selection: The board should select and appoint executive officers and, if necessary, remove them (Commercial Bank Examination Manual).
2. Compensation: The board is responsible for evaluating the performance of the CEO and approving his or her compensation (Commercial Bank Examination Manual).