Market Discipline: Players, Processes, and Purposes

Robert R. Bliss
Research Department
Federal Reserve Bank of Chicago
230 S. LaSalle St.
Chicago, IL  60604-1413
312-322-2313
Robert.Bliss@frbchi.org

Abstract

Market discipline has become a central element of the discussion of how to advance the supervision and regulation of financial institutions. While market discipline is seen as desirable and several proposals have been made for increasing market discipline, less attention has been paid to what market discipline is, how it functions, and how the regulatory environment might impact market discipline. This paper analyses market discipline as the solution to the natural conflicts of interest between managers who direct firms and financial market participants who invest funds—the principal-agent problem. The paper discusses the incentives and goals of the major players, and the mechanisms that have evolved to ameliorate the conflicts. It is argued that regulators’ impact on market discipline is complex and their desire for increased transparency and market discipline is ambiguous.

Market Discipline: Players, Processes, and Purposes
by
Robert R. Bliss

Introduction
The study of market discipline has a long tradition in financial economics.\(^1\) However, since the debates surrounding the introduction of deposit insurance in 1933, it was not until the late 1990s that there was a resurgence of interest in the regulatory community in the potential benefits of increased market discipline of financial institutions in general and banks in particular became widely accepted.\(^2\) Now regulators have joined academics and regulatory economists in calling for enhanced market discipline of financial institutions. Today, regulators extol market discipline as a desirable or even necessary supplement to regulatory discipline in their speeches. Market discipline forms the third of three pillars of the Basel II proposal, and the Gramm-Leach-Bliley legislation required the study of subordinated debt proposals as a means of enhancing market discipline. Despite this growing awareness of the issue and the already voluminous literature on various aspects of market discipline, relatively little attention has been given to what market discipline is and how it works.\(^3\) This may be because the discussion of market discipline has been driven in large part by proposed remedies, which have defined the problem in terms of the proffered solutions.\(^4\)

This paper steps back and asks what market discipline is, what problems it addresses, how it works, how it interacts with regulatory discipline, and how it relates to other issues in finance. I will argue that market discipline consists of those mechanisms that have evolved to solve information and incentive problems inherent in modern large corporations so that capital markets can function.\(^5\) Market discipline is both a very old issue and a very complex one.

What is the Problem?
In 1776 Adam Smith thought that joint-stock companies, the precursors to our modern corporations, were doomed. He observed that “… [joint-stock companies] have … very seldom succeeded without an exclusive privilege [legal monopoly]; and frequently have not succeeded

\(^1\) The term market discipline is also used in contexts other than the financial market discipline this paper is concerned with. Among these is product market discipline which penalizes inefficient firms and poor products—the so called “invisible hand.” Adam Smith argued that this form of discipline is natural to a market economy undistorted by monopolies, tariffs, and other frictions.

\(^2\) Proponents of mandatory subordinated debt deserve much of the credit for the resurgence of interest in the role of market discipline in banking.

\(^3\) Exceptions include Bliss (2001), Bliss and Flannery (2002), Llewellyn and Mayes (2003), and Hamalainen, Hall, and Howcroft (2003).

\(^4\) For instance, many advocates of mandatory subordinated debt associate the term “market discipline” with a positive relation between firm risk and that firm’s subordinated debt yield spreads. While such a risk/ yield relation is a necessary condition for a subordinated-debt proposal to be effective, to so narrowly identify market discipline unnecessarily limits the discussion, precluding a full consideration of the issues and alternative solutions. The proponents of enhanced transparency have assumed that greater transparency will increase market discipline, without defining the term or examining how this might (or might not) work.

\(^5\) These issues may apply to a lesser degree in closely held corporations. However, the large financial institutions we are most concerned with do not fall into the category. For ease of exposition in this paper “corporations” will refer to large corporations with many non-manager stockholders.
Smith based his analysis both on the empirical evidence of frequent failures of joint stock companies and on a theoretical argument that we now call the principal-agent problem. “The directors of such [joint-stock] companies … being the managers rather of other people’s money than their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which partners in a private copartner frequently watch over their own. … Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.”

And yet today joint-stock companies are the dominant form of business organization in industrialized countries. While Adam Smith was correct in his identification of the central problem with the corporate form, his conclusion has become dated. Markets have evolved to solve, imperfectly, to be sure, but sufficiently for their purposes, the problem of how providers of capital can induce managers to watch over their investments with sufficient anxious vigilance; in other words, markets have learned to discipline managers.

**The Components of Market Discipline**

To begin our discussion of market discipline and the mechanisms by which it operates, it is important to recognize that market discipline involves two key functions: monitoring and influence (Bliss and Flannery, 2002). Monitoring requires the market participants to have the incentives and ability to monitor the actions of the firm and its managers. The incentives to monitor depend on the cost/benefit trade-offs of doing so. Costs depend on transparency and easily accessible information. Benefits depend on the size of the exposure, thus many diffuse stock holders may monitor less than a few large block holders. The ability component involves both access to necessary information about the firm (transparency) and the ability to properly interpret that information (competence). The results of market monitoring may show up in equity prices, yield spreads, or willingness to invest or transact; or they may take more opaque forms such as collateral requirements and net position adjustments.

Monitoring is a necessary but not sufficient condition for market discipline. For market discipline to be effective there must be a feedback from the monitors which induces firm managers adjust their behavior. Bliss and Flannery (2002) call this “influence.” Influence can come directly from market participants, called direct discipline, or it can come from other agents, such as regulators, using the information provided by market monitoring to inform actions that influence managers’ decisions, called indirect discipline.

Furthermore, discipline can take one of two forms. Ex post discipline comes in response to managerial actions. Actions the markets disapprove of may be “punished” in various ways, the most drastic being a withdrawal of funding that may lead to illiquidity and possible insolvency. More subtly, and no doubt more pervasive, properly aligned incentives, including the threat of

---

7 When Adam Smith was writing, the frauds and “irrational exuberance” of the bubbles associated with the South Sea Company (Britain) and Mississippi Company (France) were within living memory. Joint-stock companies were considered to be against the public interest and were prohibited (in Britain) except by act of Parliament.
8 Ibid.
9 Counter parties such as derivatives dealers can adjust their exposures to weak firms by management their net positions (the difference between their in-the-money and out-of-the-money positions vis-à-vis a given counter party). Such adjustments would not be readily apparent to third parties who have access only to limited aggregate information. See Bergman et al (2003) for further discussion.
adverse consequences, may induce managers to undertake actions which are in the first place consistent with the markets’ interests. This is called ex ante discipline.

**Why the Call for More Market Discipline?**

Financial institutions have become increasingly complex and opaque. This is particularly true of the largest financial organizations with large derivatives positions and off-balance sheet activities. Securitizations and associated residuals present challenges to both accountants and supervisors attempting to value the firm’s assets and liabilities. This is coupled with the increasing concentration in the financial markets, particularly for derivatives. Thus, while the largest firms are becoming difficult to examine and supervise prudentially, the potential adverse impact of their failure is also increasing.

The regulatory calls for increased market discipline, point to a perception that what market discipline there is may be insufficient. This is itself due in part to real or perceived regulatory distortions. Deposit insurance creates a class of bank counterparties with diminished incentives to monitor.\(^{10}\) However, insured depositors may be ineffective monitors, frequently lacking the competence to make informed valuation and risk assessments. More importantly, deposit insurance means that banks are able to raise funds from investors who may not have strong incentives to monitor, thus undermining other potential sources of discipline (risk sensitive uninsured creditors). While insured depositors enjoy *de jure* protection, there is also a concern among many regulators and academics that market participants may perceive *de facto* protection of the counterparties of very large banks. This is either too big to fail or “too big to be allowed to implode quickly.”\(^ {11}\)

Regulators have become increasingly uncomfortable with shouldering the primary burden for supervising large financial institutions. They realize that the complexity and valuation of modern financial engineering products may be beyond the ken of most examiners. This problem is exacerbated by a scarcity of regulatory resources. The regulatory logic for increased market discipline presumes that market participants may be collectively more able to monitor banks activities than understaffed regulators or at least to provide a more continuous oversight. Furthermore, some market participants, for instance derivatives counterparties, may be individually better able to undertake the complex assessments required.

Regulators seek to leverage the perceived abilities of markets in two ways. The first is to use the signals provided by market monitoring as an input when deciding how to allocate regulatory resources (producing indirect market discipline). The second is to have at-risk market participants directly influence managers to take the desired actions, thus supplementing regulatory discipline with direct market discipline. Other commentators have suggested that market monitoring is needed to influence the regulators rather than the regulated. Evidence of regulatory forbearance during the savings and loan crisis and attendant concerns regarding

---

\(^{10}\) As Kaufman and Seelig (2002) point out, in many countries insured depositors are not paid immediately when their bank fails and so still have an incentive to monitor. In some countries the deposit insurance is implicit rather than explicit and the resulting uncertainty may produce incentives to monitor. Other countries such as the UK have partial deposit insurance so that all depositors are at some risk. In the U.S., where insured depositors have immediate access to their funds, depositors with accounts under the insured limit have no incentives to monitor.

\(^{11}\) Greenspan (2000) raised the concern that the precipitous collapse of large complex financial institutions might present unacceptable social costs and suggested that while failure should not be prevented, the process might require regulatory intervention. The workout and unwinding of Long Term Capital Management is an example. Bliss (2003) discusses potential problems that might arise to impede the orderly resolution of such firms.
regulatory incentives have not been entirely ameliorated by Prompt Corrective Action (PCA) rules legislated under the Federal Deposit Insurance Improvement Act (FDICIA) of 1991. Proposals to reduce forbearance range from using sub-debt yield spreads to trigger mandatory regulatory actions to simply providing a public signal of bank quality that will raise the political costs of regulatory forbearance.\(^\text{12}\)

**Agency Costs and Market Discipline**

Discussions of market discipline frequently assume, without qualification, that market discipline would obtain if only regulatory distortions such as too-big-to-fail were eliminated and transparency increased. However, the highly idealized view of the relevant economic agents implicit in these discussions masks critical issues that impact the functioning of market discipline mechanisms (both monitoring and influence). The idealized worldview underlying subordinated debt proposals ignores what are called principal–agent problems, or simply agency problems.

A formal theory of agency was first developed by Jensen and Meckling (1976) and applied to the modern corporation by Fama (1980) and Fama and Jensen (1983). Agency costs are created by the separation of ownership, or more generally the provision of capital, and control (management) in an environment characterized by information asymmetries, costly monitoring, and incomplete contracting. These unavoidable costs arise because investors cannot reliably ensure that managers will act in the investors’ interest and not the managers’—that is, equity (and bond) holders cannot perfectly control managers. There is an extensive empirical literature analyzing the determinants, extent, and magnitude of agency costs in the economy.\(^\text{13}\)

The success of corporate capitalism clearly demonstrates that the benefits of separation of investment and management far outweigh the agency costs that this separation gives rise to. However, it would be incorrect to conclude that agency costs are negligible. Rather, the mechanisms of market discipline are in general sufficiently well developed to lower these costs to the point where the benefits of the corporate form can be realized.

Agency costs can be mitigated by various mechanisms: delegated monitors (boards of directors, regulatory supervision), reducing information costs (required disclosures of relevant information), and reducing managers’ incentives to abuse their position (fiduciary, fraud, and insider trading laws; threat of a takeover; and performance incentives such as managerial stock options). However, agency costs cannot be entirely eliminated, thus market discipline of managers is inevitably imperfect. We must seek to understand what market discipline can do and how, rather than to view it as a panacea, and we do this by first examining how market discipline works in the general, that is for most unregulated corporations, where market forces are the source of discipline. We can then intelligently approach the question of how market discipline functions in a heavily regulated environment and how that environment might be modified to increase the power of market disciplinary mechanisms.

Equity holders and bondholders can surely influence managers in extremis. For example, when money market participants refused to roll over Penn Central’s commercial paper in 1971, management was forced to take action. They filed for Chapter 11 bankruptcy protection from the firm’s creditors. Equity holders can also vote out management, and poor firm performance

\(^{12}\) See Kwast et al (1999) for a detailed discussion of various subordinated debt proposals and Bliss (2001) for an analysis of these and related issues.

\(^{13}\) Shleifer and Vishny (1997) and Short (1994) provide useful introductions to this literature.
increases the likelihood of managerial turnover. Sufficiently disgruntled equity holders may create an environment that facilitates a hostile takeover.

Direct and reasonably certain discipline of managers is possible only in certain circumstances. The market for corporate control (takeovers) and direct control by large external equity holders who have effective-control blocks are forms of market discipline. Major equity holders can themselves effect changes in board composition or form, at relatively low cost, coalitions to do so; inducing the board to change management. Major investors or other firms can mount hostile takeovers, which if successful will result in a change in management. These situations, while they represent the ultimate sanction against management (other than prosecution for malfeasance), are rare events and affect only the top managers of a few very large firms. Informal or ad hoc restriction of derivatives dealing to highly rated counterparties is another form of market discipline, by preventing managers from engaging in certain forms of excessive risk-taking if they wish to participate in those markets. Empirical evidence confirms the existence, though not the invariable effectiveness, of all these disciplinary forces.

Labor market discipline is another form of market discipline. For many senior managers, the hope of more lucrative jobs at other firms induces them to work to establish their reputations as value-enhancing agents acting in the equity holders’ interests. Examining the post-resolution placement of bank managers following a number of Texas bank failures in the 1980s, Cannella, Fraser, and Lee (1995) find results consistent with the managerial labor market discriminating between managers who were likely to have been responsible for their bank’s problems and those who were not. Managers likely to have been responsible for bank failures tended not to be subsequently employed in the industry, while those arguably not responsible were frequently employed by other banks. Farrell and Whidbee (2000) find a similar result for outside directors. In this case, outside directors who were aligned with forcibly removed CEOs, owned little equity, and made poor choices in replacing the CEO, on average, subsequently lost their positions. Directors who were not aligned with the fallen leader (and/or had large equity stakes) not only kept their current directorships, but also were appointed to additional directorships at other firms.

However, policy proposals for using market discipline to enhance banking supervision usually envisage something more commonplace, constructive, and benign than precipitating bankruptcy or replacing management through takeovers. Yet we have virtually no empirical

---

14Managers, on the other hand, can sometimes protect (immunize) themselves against involuntary replacement through golden parachutes and antitakeover amendments. Fama (1980) notes that adversarial resolution of manager/investor conflicts is very expensive. While golden parachutes apparently reward outgoing managers for failure, they may constitute the least costly means of removing managers who are willing to use the firm’s (investors’) own resources to contest their removal.

15This labor market discipline is an important source of managerial discipline; indeed Fama (1980) argues that “[t]he viability of the large corporation with diffuse security ownership is better explained in terms of a model where the primary disciplining device comes through managerial labor markets, both within and outside the firm, ...”

16An alternative possibility is that risk averse entrenched managers may seek to protect their current positions by taking too few risks (satisficing). This has led to a literature on managerial compensation designed to align managers incentives with those of the equity holders—executive stock options being a topical example.
evidence, outside the managerial labor market literature, concerning equity holder and bondholder market influence in less extreme situations.17

Only a few papers look at banking and corporate control (agency cost) issues. Most of the economics of regulation literature (which considers, among other things, the incentives of regulators) is concerned with market power regulation (for example, utilities) or safety regulation (for example, airlines), rather than financial safety regulation. To draw implications from our review of the corporate literature for the problem of bank regulation, we can only make tentative extrapolations of the existing theory and consider the few existing empirical studies.

The theoretical effects of bank regulation, supervision, and deposit insurance on agency costs are potentially ambiguous. Examiners are in an excellent position to act as delegated monitors. They have unparalleled access to information, and they can compel remedial action. Only the board of directors is in as strong a position to monitor and discipline management. Early empirical investigations of this hypothesis found little evidence that the supervisors’ theoretical comparative advantage translated into measurable benefits. However, DeYoung, Flannery, Lang, and Sorescu (2001), using an improved research methodology and a unique data set, find strong evidence that exams do reveal information that is not known to the market. Thus, examiners functioning as effective delegated monitors may serve to reduce agency costs.

On the other hand, much of the information examiners develop is confidential, and other aspects of bank regulation may have a negative effect. Deposit insurance obviously eliminates most, if not all, incentives for insured creditors to monitor. Explicit too-big-to-fail policies in the 1980s undermined the incentives of uninsured creditors as well. This effect may have continued even after the passage of the Federal Deposit Insurance Corporation Improvement Act (FDICIA) in 1991, while the credibility of regulators in foreseeing forbearance remained untested. Even if one can argue that regulators will now let individual banks fail, imposing costs on uninsured creditors, one can also argue that diversified holders of uninsured claims might still rely on regulators’ unwillingness to allow a large number of banks to fail. These factors would tend to increase free-riding and, therefore, undermine market discipline.18

One of the few studies that directly examines the agency cost consequences of bank regulations is Prowse (1997). Prowse examines the frequency of friendly mergers, hostile takeovers; management turnover initiated by the board of directors, and intervention by regulators in U.S. bank holding companies (BHCs) from 1987 to 1992, and compares this with data on the frequency of the first three of these corporate control events in nonfinancial firms. Prowse concludes that

…while market-based mechanisms of corporate control in BHCs appear to operate in the same [broad] fashion as manufacturing firms they may be weakened because hostile takeovers are precluded by regulation and bank boards

17Bliss and Flannery (2000) and Calomiris and Powell (2000) are two exceptions. Bliss and Flannery find little clear evidence of ex post equity or bond market influence on U.S. bank holding companies, while Calomiris and Powell purport to find evidence consistent with bondholder influence in Argentina under very different circumstances.

18Park (2000) develops a formal model in which senior-debt holders monitor firms for moral hazard problems and junior-debt holders free-ride. This is consistent with observed debt priority, ownership, and maturity structure in nonbanks. The reasons that junior-debt holders do not monitor (benefits accrue first to senior claimants) carry over to subordinated bank debt. It is less clear that Park’s arguments for why senior-debt holders do monitor (gain full benefit of their monitoring efforts) would carry over to bank supervisors, who are agents rather than principals with their own funds at risk. On the other hand, Park argues that senior-debt holders will tend to have lower monitoring costs, an observation that carries over to supervisors who are paid to monitor.
of directors are not as aggressive in removing poorly performing managers. These weaknesses leave intervention by regulators as the primary force in disciplining management. (Prowse, 1997, p. 525)

This evidence suggests that, whatever the informational benefits of examination, one effect of regulation on banks is to reduce the effectiveness of other corporate governance mechanisms. However, we cannot say anything on the basis of this sparse evidence as to whether regulatory discipline has been effective in replacing the market’s usual disciplinary mechanisms.

The Players: Incentives, Goals, and Conflicts

I have suggested that market discipline is, in large part, the solution to the principal-agent problem that is inherent in the separation of management of the modern corporation from the providers of capital (equity and debt) on which the corporation depends.19 This problem definition leads to identification of three players who needed to be considered and whose roles and incentives need to be understood: managers, equity holders, and bondholders (or more generally uninsured suppliers of credit, including uninsured depositors).

Firms (banks) are not players per se. While they may have legal identities under the law, firms are incapable of making decisions or having incentives.20 While it is common to talk of firms doing such and such, it is important for this discussion to recognize that the actions that firms take are decided by their managers (excepting when compelled to act by courts or regulators).

To this set of players I add two others. When discussing contemporary market discipline of banks one cannot ignore regulators. The functioning of market discipline in unregulated corporations, the basis for most of our understanding of the subject, cannot be translated to regulated banks without understanding how regulators distort the incentives and mechanisms involved. Lastly, securities (derivatives) market participants provide a powerful influence on the actions of large financial institutions involved in those markets, and so constitute a potential source of financial market discipline.

Excluded from the list of players to be considered are: insured depositors who may have little or no incentive to exert market discipline; borrowers, who may have incentives to monitor their creditors to ensure against loss of the lending relation;21 and insurers, who tend to discipline through ex post litigation rather than ex ante monitoring, though this ex post litigation may still provide ex ante discipline. These exclusions are arbitrary and others may wish to introduce these players into an expanded analysis.

Bondholders (uninsured creditors and depositors) are the easiest agents to analyze. The bondholders’ contract with the firm is predicated on transparent and predictable information

19 The bulk of the corporate finance literature on principal-agent problems centers on conflicts between managers and equity holders. Another literature in banking focuses on conflicts between equity holder/ managers and bond holders, assuming away the manager v. equity holder conflicts. The salient issue is the separation of control and risk bearing, and since interests of equity holders and bondholders differ, this paper will consider all three parties separately.

20 The anthropomorphizing of firms may be a convenient device when analyzing equity holder/bondholder conflicts, though it presumes that managers are perfectly aligned with equity holders.

21 There is little evidence that borrowers run from weak lenders, perhaps because weak firms tend to offer inducements—lower credit standards, under-priced credit—to attract business.
about the risks they are taking, rather than the level of risk per se. Bondholders lend for a fixed term at a fixed rate or at a rate tied to short term market interest rates. Critically, their maximum return is fixed—they have no “upside potential.” Bondholders bear the credit risk associated with the risk taking of the firms they lend to. However, this does not mean that bondholders avoid risk taking. Creditors happily lend to risky firms; approximately 15 percent of new bond issues are rated below investment grade (Bliss, 2001) and bond issuers tend to be even higher quality than bank borrowers. What creditors need is for the risks they are taking to be transparent so that they can correctly price the risk (through the coupon rate). Since the coupon is usually fixed with respect to changes in credit risk, subsequent changes in perceived credit risk (newly revealed information or actual changes in risk) can impact the value of the bondholder’s claim. Because bondholders’ principal is returned when their claim matures, unless the firm become insolvent, they can reassess the risk profile of the creditor and either adjust the coupon on new lending or decline to lend in the future if they are too much in doubt as to the condition of the borrower.

**Equity holders** have a more complex attitude towards firm risk. Equity holders have both upside potential, if the firm prospers, and downside potential, if the firm fails. A simple model of equity holders’ incentives based on Black-Scholes (1972) analyzes equity as a call option on the value of a levered firm. In this single-period analysis, bondholders are captives (they do not price risk), and equity holders will seek to maximize the value of their option by inducing managers to increase firm risk. This analysis, however, ignores some salient features of the equity holder’s decision problem. Equity holders have a perpetual claim on the net cash flows of the firm, and present value of future dividends is lost when the firm fails. Furthermore, bondholders price risk, so increased risk (should) result in increased interest expense and reduced net profits (for a given expected return on assets). Equity holders may thus be expected to consider both expected profits and risk simultaneously, factoring in the bondholders’ responses, rather than just focusing on asset risk as in the simple Black-Scholes model. Merton (1978) suggests that as the firm approaches insolvency the equity holders become increasingly risk-averse as the likelihood of loss of their future dividend stream increases. However, equity holders of a firm that is economically insolvent or likely to become so, but not yet formally in bankruptcy, have little to lose and may prefer the firm’s manager take on excessive risk in the hopes of a reversal of fortunes before the otherwise inevitable detection of the insolvency.

**Managers** are at the heart of the principal-agent problem, and face conflicting interests. On the one hand managers are agents for the owners, the equity holders, and are supposed to act in their interest.22 On the other hand, managers may act in their own interests rather than that of their principals. This is because they are in a position to profit personally from their actions—through perquisite consumption, self-dealing, outright expropriation, or simply shirking—and it is impossible for equity holders to perfectly monitor the managers actions and to contract so as to entirely prevent such malfeasance.

**Derivatives market participants** are in unique position. Their profits derive from the profitability of the positions they take and the spreads they earn from dealing. Derivatives market participants are exposed to the credit risk of their counter-parties, though except in the case of credit

---

22 This is the Anglo-American perspective. In some other countries managers are required to act in the interests of a broader set of “stakeholders,” including employees, the local community, environmental interests, and so forth.
derivatives, that is not their raison d’être.\textsuperscript{23} The institutional structure of the derivatives market leads markets participants to manage counter-party credit risk so as to control and minimize this component, rather than consciously accept and price credit risk as bond holders do.\textsuperscript{24} This is made possible by legally protected collateral and netting arrangements that apply to derivatives “master agreements” and a few other financial contracts, such as payments systems and clearing houses, but do not apply to most financial contracts.\textsuperscript{25} Derivatives market participants can and do simply decline to deal with counter-parties who are considered to be not creditworthy and unable to post sufficient collateral. Furthermore, derivatives contracts contain close-out rights that enable counter-parties to terminate existing contracts if the firm becomes insolvent and fails to meet certain conditions (e.g. maintain a given minimum rating on its debt). Bergman et al (2003) argue that while this alters the derivatives market participants’ incentives to monitor, it does not eliminate them. Furthermore, derivatives markets participants, particularly large dealer firms, are considered to be among the most sophisticated monitors both in terms of the skills they possess and the resources they can devote to monitoring.

Regulators have the most complex incentives of any of the players. As agents for the public good, bank regulators have a general goal of ensuring the soundness of the financial system, the avoidance of panics, and limiting systemic risk. Thus, unlike other players, regulators may be expected to take into account the external consequences of bank (and not non-bank financial institution) failures. Systemic risk considerations appear in banking legislation (to permit exceptions to normal bank closure rules), and the Federal Reserve has intervened on an ad hoc basis when it thought that market stability was threatened (the 1987 stock market crash, Long Term Capital Management, the millennium date change). However, regulatory monitoring for the most part focuses on the safety and soundness of individual banks.

Monitoring consists of standardized information collection and verification (call reports for banks and Y-9 reports for bank holding companies), this information being made publicly available relatively quickly. This data collection is supplemented by on-site examinations, the reports of which are not made public. Examiners influence bank (and bank holding) company managers through a variety of mechanisms—required reclassification of loans, memoranda of understanding, capital directives, etc—some of which are public, and some of which are not. Criticism of regulatory forbearance in the late 1980s and early 1990s led Congress to pass PCA legislation\textsuperscript{26} which limited, in theory, supervisors’ discretion in dealing with problem banks.\textsuperscript{27}

\textsuperscript{23} Bond holders take on credit risk in return for an agreed promised return and a priority of their claim vis-à-vis equity holders and other subordinated claimants (sub-debt, preferred stock) to the firm’s cash flows when solvent and assets under insolvency

\textsuperscript{24} This distinction is one of degrees. Bondholders sometimes manage credit risk through the use of bond covenants, though these have become less common, and through collateralized lending (e.g. mortgage bonds, repurchase agreements). Poor credit risks may be excluded from certain credit markets entirely.

\textsuperscript{25} Enforceable netting results in the combination of multiple contracts into a single legal obligation for the net value. This usually requires that the individual transactions take place under a governing master agreement. Credit exposures under such contracts are thus limited to net of the position values across all the included transactions. Where netting is not permitted multiple contracts between a solvent and an insolvent counter party are treated separately in insolvency. See Bergman et al (2003) for a detailed discussion of netting rules and their economic implications.

\textsuperscript{26} 12 USC 1831o(e)(2)(E).
Nonetheless, since PCA triggers are defined in terms of bank book capital and considerable uncertainty remains as to how and when to revalue problem assets (and liabilities), considerable discretion remains. The exercise of this discretion in the execution of their duties brings regulators (examiners, supervisors) incentives into play.

Like managers, regulators have incentives inherent in the function they are performing on behalf of others and as well as personal incentives. The “others” for whom the regulators are working are complex. There is the public, who relies on regulators to keep the financial system safe. There are the tax payers who rely on the regulators to ensure that the deposit insurance system is self-financing and does not result in further costs to the tax-payer as happened during the savings and loan crisis. There is the deposit insurance system itself, the soundness of which requires proper management of bank failures so as to minimize losses to the insurance fund.

Regulators also face their own personal incentives. At the most basic level is that of self-preservation. In the U.S., regulatory authorities compete for business. Since there are multiple regulators, the type of charter determines which regulator supervises a given bank. But the choice of charter lies with the bank. The number of banks being supervised determines the number of examiners and supervisors employed. This calculus is exacerbated at those regulator agencies that are funded through examination fees. This market for regulators creates the potential that regulators may at the margin act in their own interest rather than risk driving away clients. Regulators are also subject to political pressures in the exercise of their duties. In the past, this descended to political interference in specific bank closure decisions (most notably during the savings and loan crisis). PCA is designed to discourage this by requiring the forbearance be formalized at the highest (regulatory) levels and in a public manner. Nonetheless, more subtle political influence may remain.

Larger policy decisions which impact the functioning of the regulatory system, such as bank fees and deposit insurance limit, are still determined through the political process. Lastly, there is the possibility of “regulatory capture” arising from the close working relation between the regulators and the regulated, and the remoteness of those in whose interest the regulation is being carried out. This potential is of course inherent in many regulatory agencies. Movement of staff from the regulatory agency to the regulated industry may contribute to regulatory capture.

---

27 Examination refers to the on-site information gathering, supervision to the decision making. These functions usually are collocated in supervisory agencies, with field examiners collecting the information, but supervisory management making the final decisions.

28 In the U.S. the deposit insurance fund is funded by fees assessed on troubled banks and when the fund falls below prescribed limits by fees assessed on all depository institutions. Losses incurred by the FDIC in resolving banks are charged to the fund. Thus, at least in principal, the FDIC is the agent of all the depository institutions in its management of the fund. It remains to be seen whether in fact massive losses to the fund would be made good by the member banks as required by law, with possible severe repercussions for bank lending, or whether the tax-payer would be called on to recapitalize the fund. The recent possibility that the fund might slip slightly below its minimum level requiring top-up fees from all depository institutions, has already exposed the political sensitivity of the issue.

29 12 USC 1823(c)(4).

30 There is little direct evidence of this effect (see Rosen, 2003), and banks already in trouble may have difficulty changing charters. However, the lack of uniformity of examination fees across regulators is controversial, as are changes in client base that might impact staffing—witness the institutional resistance to merging the OCC and OTS.

31 The reluctance of the OTS to take early vigorous action against Superior Savings in 2000 has been attributed by some commentators to the political clout of the Pritzker family which co-owned the institution.
Relations Among Players

Ceteris paribus, equity holders and bondholders of solvent firms share an aversion to lower expected and realized rates of return. Neither benefits from malfeasance or mismanagement by managers. This may seem trivial, but it is often overlooked that bondholders and equity holders have common as well as potentially divergent, interests. Most failures are due to poor management or poor investments rather than to ex ante rational risk-taking followed by a bad outcome. Thus, equity holders’ and bondholders’ interests are aligned with respect to firm profitability. With respect to risk, over a wide range bondholders simply prefer that risk be predictable, while equity holders’ attitude towards risk may vary with the solvency of the firm.

Proponents of mandatory sub-debt note that sub-debt holders, like regulators (the insurance fund), do not benefit from the upside potential that may attend increased risk-taking (while equity holders and manager do). Mandatory sub-debt proponents conclude that sub-debt and regulatory incentives are therefore aligned and the market discipline by sub-debt holders will be directed towards the same goals that regulators have. This may be true for solvent institutions; both players wish the firm to remain solvent. But in other important ways the goals and incentives differ. As noted earlier, bondholders price risk until it becomes too great then they withhold investment. For various reasons regulators price risk only crudely and only “withhold” (deposit insurance) in extreme cases when the bank is closed. Most banks currently pay nothing for the deposit insurance guarantees they enjoy, and the banks that are classified as weak and pay fees do not pay fees that are economically related to the risks they impose on the fund. Thus, bondholders and regulators differ in their attitude towards risk taking; the former being compensated, the latter not.

When a bank approaches insolvency the interests of bondholders and regulators diverge further. When a bank approaches insolvency the subordinated debt holders become the de facto residual claimants and may begin to act (in so far as they can) like equity holders. This is particularly true if the firm is so insolvent that their claim has little current value. Sub-debt holders may then favor “going for broke” rather than immediate liquidation, while more senior claimants (including the FDIC) may be better off liquidating while the assets still cover a good portion of their claim.

In insolvency, the regulators (FDIC) and subordinated debt holders can become adversaries. There have been several instances where subordinated debt holders or the bankruptcy trustees have sued regulators over the manner in which failed banks were resolved. The FDIC as both receiver (or conservator) and major creditor has a natural conflict of interest. Least cost resolution mandates least cost to the deposit insurance fund, not to the subordinated creditors. Furthermore, subordinated creditors have little standing to be heard when a failed bank is being resolved. This may help to explain why most subordinated debt is issued at the holding company rather than the bank level. Creditors enjoy much more clearly defined

32 For insolvent firms, further losses cannot change the position of equity holders who are already wiped out. The same logic applies successively to other claimants in reverse order of priority as the losses wipe out successive creditor classes.
33 MCorp, BNEC, and NextBank are examples.
34 Under depositor preference, the FDIC shares on a pro rata basis with uninsured depositors any losses resulting from insufficient recoveries from liquidation of assets. Thus, there is no conflict of interest between the FDIC and uninsured depositors. The conflict is limited to other non-depositor creditors.
protections under the bankruptcy code used to resolve holding companies, than under banking law used to resolve banks.

While all players, except perhaps managers prefer greater transparency when a bank is solvent, when a bank becomes troubled the managers and regulators generally prefer opacity. Bank ratings which signal deteriorating bank quality are non-public and may not be even voluntarily disclosed. While some regulatory actions taken against troubled banks are made public, it is often the case that regulatory concerns are not made public. This usually happens while supervisors are working with managers to attempt to resolve the problem.

The justification for not always making regulatory concerns public is that such information might cause the public to panic and withdraw funds, making a workout infeasible. This concern for regulatory control of the situation when a bank is in trouble, highlights an important point: Regulators want ex ante discipline to minimize the incidence of troubled banks, but they do not want ex post discipline that reduces their options when dealing with a troubled bank.35

**Conclusion**

Market discipline is a complex phenomenon. It has its roots in the fundamental problem of the corporate structure—the separation of ownership of capital (both equity and debt) and control, which lies with managers. Markets, together with governments and courts, have evolved a number of mechanisms by which markets are able to discipline managers, imperfectly to be sure, but sufficiently for the corporate form of business organization to be remarkably successful.

Regulatory discipline of banks was introduced because it was perceived that market discipline was not sufficiently able to deal with these particularly important institutions. Regulatory discipline contains elements specifically designed to replace market discipline—bank supervision, restrictions on certain activities, regulatory approval of mergers, regulatory insolvency procedures. This undermines market discipline by encouraging free-riding and by weakening some of the mechanisms that function in unregulated markets (for instance, hostile takeovers). Market discipline of banks is further weakened by deposit insurance, weakening incentives of a large class of creditors to monitor, and by perceptions of *de facto* too-big-to-fail treatment of large institutions. The current calls for an increased role of market discipline in bank regulation do not seek to roll back these distortions. Rather they seek to strengthen market discipline within the existing framework of regulatory discipline.

This paper takes a step back from specific proposals to take an overview of market discipline. When one considers the incentives and goals of the major participants in the process, it becomes apparent that bringing increased market discipline to bear in bank regulation is not as simple as some proposals may presume. Small amounts of subordinated debt may prove weak inducements to managers to alter their behavior, and sub-debt signals may not be enough to overcome incentive problems faced by regulators. Increased transparency will certainly aid in market monitoring, but will do little in itself to increase market influence.

35 Bliss (2203) has noted that close-out rights under derivatives master agreements may frustrate this desire to control bank resolution in the case of large complex financial organizations. Currently close-out of bank master agreements solely due to appointment of the FDIC as conservator is prohibited and efforts are underway to expand this prohibition to other causes except actual default (see Bergman et al, 2003). However, closeout (winding down positions and demands for increased collateral) cannot be prevent prior to the FDIC taking over the bank, should problems become public before the regulators close the bank.
In the end, the call for increased market discipline must grapple with a fundamental contradiction. Regulators want market discipline, but on their own terms. They want increased ex ante market discipline, but they also want to retain those elements of regulatory discipline that weaken ex post (and to a lesser extent ex ante) market discipline, particularly their control of the process for resolving weak and troubled banks.\textsuperscript{36} Whether the two forms of market discipline can be neatly separated remains to be seen. Getting market discipline “just right” is likely to be a challenge.

\textsuperscript{36} Evanoff (1993) referred to this as “the razor’s edge.”


Greenspan, Alan, 2000, “Question and answer session following the keynote address,” Proceedings of the 36th Annual Conference on Bank Structure and Competition: The


