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DRAFT APRIL 27, 2007

CROSS-MONITORING AND CORPORATE GOVERNANCE

JOANNA M. SHEPHERD,\* FREDERICK TUNG,\*\* AND ALBERT H. YOON\*\*\*

ABSTRACT

We take the view that corporate governance must involve more than corporate law. Despite corporate scholars' nearly exclusive focus on corporate law mechanisms for controlling managerial agency costs, shareholders are not the only constituency concerned with such costs. Given the thick web of firms' contractual commitments, it should not be a surprise that other financial claimants may also attempt to control agency costs in their contracts with the firm. We hypothesize that this cross-monitoring by other claimants has value for shareholders.

We examine bank loans for empirical evidence of the value of cross-monitoring. Our approach builds on prior empirical work on the value of good corporate governance, to which we add data on the presence of bank loans and their interactions with free cash flow, governance indices, and individual corporate governance provisions. To our knowledge, ours is the first study to measure the performance effects of bank debt as a device for reducing managerial agency costs, and the first study on the interaction of ongoing bank monitoring with corporate governance arrangements. We find strong evidence that bank monitoring adds value. In effect, bank monitoring can counteract somewhat the value-decreasing effects of managerial entrenchment. Bank monitoring may substitute for good corporate governance.

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CROSS-MONITORING AND CORPORATE GOVERNANCE  
JOANNA M. SHEPHERD, FREDERICK TUNG, AND ALBERT H. YOON

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## CROSS-MONITORING AND CORPORATE GOVERNANCE

JOANNA M. SHEPHERD,\* FREDERICK TUNG,\*\* AND ALBERT H. YOON\*\*\*

### INTRODUCTION

Corporate law scholars have long assumed that corporate law does and should take the laboring oar for improving firm value and shareholder returns for public companies. On this view, strategies for agency cost reduction focus primarily, if not exclusively, on the internal corporate governance institutions that structure relations between firm managers and shareholders. But shareholders are not the only constituency concerned with managerial agency costs. Given the thick web of firms' contractual commitments, it should not be surprising that other financial claimants may also attempt to control agency costs in their contracts with the firm. We hypothesize that this cross-monitoring by other claimants has value for shareholders. We examine bank loans for empirical evidence of the value of cross-monitoring.

Our paper marries two strands of literature—the empirical corporate governance literature and the corporate finance literature—to investigate the effect of bank monitoring on corporate performance. A number of scholars have begun to test empirically the value-creating effects of various corporate governance features. Gompers, Ishii, and Metrick (GIM) (2003) first proposed a corporate governance index, the G-index, to capture the degree of managerial control versus shareholder rights embedded in firms' corporate governance structures. For this index, GIM identify twenty-four separate corporate governance features of interest that might together or in certain combinations affect firm value and shareholder returns. They score public companies based on the number of

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governance features each firm has in place that increase managerial control and correspondingly reduce shareholder rights, and they perform a number of empirical tests to determine whether governance affects firm value or corporate performance. From the G-index, Bebchuk, Cohen, and Ferrell (BCF) (2005) devised their E-index, identifying six specific corporate governance variables that appear to have the strongest correlation with firm value. Like GIM, BCF use their index to score firms based on the degree of managerial entrenchment. Other empirical studies have devised and tested other corporate governance indices (see Brown and Caylor 2004; Black, Jang, and Kim 2006).

Largely apart from this shareholder-focused corporate governance literature, finance scholars have pursued another line of research exploring financial intermediation and its externalities that might affect other financial claimants (see Datta, Iskandar-Datta, and Patel 1999; Klock, Mansi, and Maxwell 2005). Of special interest to us, several studies have confirmed that the announcement of a bank loan benefits the borrower firm's stockholders. Event studies have consistently found abnormal stock price returns to borrower firms upon the public announcement of bank loans (see James 1987; Slovin, Johnson, and Glascock 1992; Best and Zhang 1993; Billett, Flannery, and Garfinkel 1995; Hadlock and James 2002). Two standard theoretical explanations for this stock price effect have emerged, neither of which excludes the other. First, bank lenders may obtain private information about the firm during the process of negotiating the lending arrangement. Consummation of a loan agreement conveys positive private information to the market concerning the firm's value. The second explanation is that banks perform a monitoring function not otherwise available, and this monitoring improves firm value.

Previous studies of bank loan effects have typically relied on event studies of stock price reactions to bank loan announcements. Despite the findings of these studies and the evolving empirical focus on corporate governance, to date no one has attempted to measure performance effects of bank debt (or other of the firm's contractual arrangements) that might include mechanisms for managerial agency cost reduction. No study has attempted to investigate the interaction of ongoing bank monitoring with corporate governance arrangements. We hypothesize that if bank monitoring explains at least part of the observed positive market reaction to bank loan announcements, then we should also

observe improved corporate performance as a result of bank monitoring.<sup>1</sup> Bank monitoring may enhance firm value. We believe that over a wide range of situations, the interests of lenders and equity holders converge in reducing managerial agency costs. We also expect that bank monitoring may interact with certain corporate governance features. We adopt the basic empirical framework used by GIM and BCF to study the impact of bank monitoring on corporate performance.

Corporate law scholars have generally not looked much beyond corporate law and markets for mechanisms to reduce agency costs. Law scholars have not much discussed the possibility that creditor monitoring might improve public company firm value.<sup>2</sup> Triantis and Daniels (1995) were among the first to suggest that bank monitoring might benefit a firm's claimants generally. They proposed an interactive theory of corporate governance, arguing that stakeholders' exit decisions provide valuable information to one another, thereby enhancing stakeholders' collective ability to discipline management. A decade later, Baird and Rasmussen (2006) have renewed the focus on creditor monitoring and corporate governance, describing creditor control as the "missing lever" in the corporate governance literature. Aside from these thoughtful discussions, however, the potential for creditor governance has been ignored in the corporate law literature. Moreover, these few existing papers focus primarily on the downside—creditors' ability to affect corporate governance once the firm is in distress. Our claim is broader. We believe bank monitoring has more general value for firms even outside the narrow distress context.

The dearth of attention from corporate scholars is somewhat ironic given the ascendancy of the contractualist view of the corporation and the thick web of contractual

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<sup>1</sup> Several studies suggest that non-bank private debt may also bring bank-like benefits to equity holders. Preece and Mullineaux (1994) and Billet, Flannery, and Garfinkel (1995) show a positive stock price reaction to announcements of non-bank private debt placements, with no statistical difference between announcements of bank debt versus non-bank private debt. Our data identify only bank debt, however. Other forms of private debt—loans made by non-bank entities like insurance companies and commercial finance companies, for example—are not included.

<sup>2</sup> Law scholars have extensively analyzed the role of banks in the governance of small firms (Scott 1986).

commitments that bind the public company. Stockholders are not the only claimants on the firm that might be concerned about agency costs. Finance theorists noted long ago the various agency costs that different financial claims may create. It should not be surprising, therefore, that financial claimants may attempt to control agency costs in their contracts with firms. And while finance theorists often emphasize the conflicting interests among different types of financial claims,<sup>3</sup> surely debt and equity must share some interest in reducing managerial slack. Cross-monitoring must have some value.

In a word, corporate governance may involve more than corporate law. We investigate bank debt to see whether this might be true. Following GIM and BCF, we use industry-adjusted Tobin's Q as our measure of firm value. We find strong evidence that bank monitoring adds value, especially where agency costs are high. In effect, bank monitoring may substitute for good corporate governance.

In general, controlling for governance indices and for potential simultaneity, we find a positive and significant relation between firm value and the presence of a bank loan. In addition, using measures of free cash flow to differentiate companies with high agency costs, we find that bank monitoring interacts with free cash flow to enhance firm value, and that this effect is greater for firms with substantial free cash flow. Finally, we offer evidence that bank monitoring may counteract somewhat the value-decreasing effect of managerial entrenchment. We test interactions among our loan indicator, free cash flow, and measures of governance quality, namely (i) the G-index; (ii) the E-index; and (iii) individual E-index entrenchment provisions. We show first, that for a given quality of corporate governance, free cash flow in the presence of bank monitoring improves firm value. Second, we differentiate among E-index provisions, showing that bank monitoring may matter most when strong entrenchment would otherwise encourage managers to squander free cash—i.e., when agency costs are high.

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<sup>3</sup> For the seminal work in this regard, see Jensen and Meckling (1976), modeling the agency cost of debt as increasing in the percentage of outside financing comprised of debt versus equity.

Part I of this Article reviews the relevant corporate governance and corporate finance literature. Part II elaborates our monitoring hypothesis and discusses potential challenges to it. Part III describes the data and outlines our methodology. Part IV discusses our findings. Part V concludes.

I. THE STATE OF THE ART:  
CORPORATE GOVERNANCE DOES NOT MEET CORPORATE FINANCE

This Part briefly reviews the separate literatures on corporate governance and corporate finance, primarily the empirical literature. As described below, these two strands of research have developed largely in isolation from one another.

A. *Corporate Governance through Corporate Law*

For decades, corporate scholars in the dominant shareholder-centric tradition argued over optimal corporate governance provisions for public companies. Especially with the takeover boom in the 1980s, scholars wrestled with fundamental theoretical questions concerning the internal governance arrangements that might best realize value for shareholders. That theoretical debate has continued to the present.

Corporate law scholars often note the absence of strong internal monitoring of corporate managers. Some find this lamentable; others find it comforting. Scholars in the former camp call for more independent directors or more stringent definitions of director independence or stronger shareholder rights (Bebchuk 2005; Bebchuk 2006) or even paternalistic federal screening and monitoring of corporate managers (Fanto 2006). Scholars in the latter camp note the unavoidable trade off between internal monitoring and effective decision making.<sup>4</sup> They point out the numerous external disciplining mechanisms that force managers to be true to investor interests. Product markets and markets for corporate control and managerial talent all combine to reduce managerial agency costs.

Complementing the theory, scholars have recently attempted to measure the value of corporate law and various corporate governance features, generally relying on stock market-based metrics. Daines and Subramanian have each attempted to measure the value

of Delaware corporate law, using Tobin's Q as their metric (Daines 2001; Subramanian 2004). Others have investigated the effects of specific corporate governance provisions on stock prices (Lambert and Larker 1985; Ryngaert 1988).

Then GIM (2003) devised their G-index, rating companies based on the degree of management entrenchment as indicated by twenty-four separate corporate governance features tracked by the Investor Responsibility Research Center (IRRC). The G-index tracks, among other things, governance provisions allowing managers to delay hostile bidders, provisions on shareholder voting, director-officer protections, and other takeover defenses. GIM find a significant inverse correlation between firm performance and management entrenchment, using Tobin's Q and stock returns as their dependent variables. Other corporate governance studies relying on the G-index followed (Cremers and Nair 2005; Klock, Mansi, and Maxwell 2005). BCF (2005) refined the GIM approach. Instead of canvassing the entire range of IRRC corporate governance items, BCF focus on six they claim to be the most significant in terms of management entrenchment. These six—staggered boards, limits to bylaw amendments, limits to charter amendments, supermajority voting for mergers, golden parachutes, and poison pills—form their E-index.<sup>5</sup> Like GIM, BCF find a significant inverse correlation between their E-index and performance. Other indices have also emerged. Brown and Caylor (2004) developed their fifty-one factor Gov-Score index, which purports to improve on the G-index in explaining firm performance. Black, Jang, and Kim (2006) similarly create a corporate governance index for Korean companies, again showing a strong association between corporate governance and firm value.

Most recently, Core, Guay and Rusticus (CGR) (2006) and Bhagat and Bolton (2006) present surprising findings suggesting some skepticism as to the value of good governance. CGR find that in the 1990s, stock returns of companies with strong shareholder rights did not outperform those with weak shareholder rights. Bhagat and

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<sup>4</sup> Bainbridge (2002) has posed the dilemma as “accountability versus authority.”

<sup>5</sup> Each firm's E-index for a given year is simply the number of E-index entrenchment mechanisms the firm has in place in that year.

Bolton find that good governance—as measured by the G-index, the E-index, stock ownership of board members, and the separation of CEO and chair—is significantly and positively correlated with operating performance—according to accounting measures—but is not correlated with future stock performance, contrary to GIM and BCF. In addition, Bhagat and Bolton find a *negative* correlation between board independence and operating performance.

*B. Corporate Finance and Bank Monitoring*

Implicit in the empirical corporate governance scholarship is the assumption that the legal rules and contracts structuring relations among firm managers and shareholders supply the primary governance mechanisms affecting managerial performance, stock returns, and firm value. The corporate finance literature, on the other hand, has focused on financial intermediation and the benefits of cross-monitoring. The development of this literature has been largely independent from the corporate governance literature.<sup>6</sup>

The monitoring role of banks has been a common focus in the literature. The theoretical case for banks' special monitoring ability has been modeled extensively (Campbell and Kracaw 1980; Diamond 1984; Ramakrishnan and Thakor 1984; Fama 1985). Empirical testing of this proposition has generally taken the form of event studies showing positive stock market reactions to bank loan announcements (James 1987; Billett, Flannery, and Garfinkel 1995; Slovin, Johnson, and Glascock 1992; Best and Zhang 1993). These studies confirm that banks' extensions of credit are generally good news for stockholders of the borrower firm.

Two theoretical accounts have been offered to explain this good news. The positive stock price reaction may reflect the value of future bank monitoring during the life of the loan. Or instead, the bank's initial lending decision may itself create a positive market reaction by resolving information asymmetry for the market. The bank obtains private information about the firm during its diligence process when deciding to lend. Its lending decision may therefore convey positive private information concerning the firm's

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<sup>6</sup> One exception is Klock, Mansi, and Maxwell 2005.

creditworthiness or the value of its projects (Myers and Majluf 1984; Mikkelsen and Partch 1986; James 1987).<sup>7</sup> These explanations are not mutually exclusive, and studies tend to confirm that both information asymmetry and monitoring theories may help explain the market's positive reaction. We discuss empirical validation of the monitoring theory more fully below.

As for information asymmetry, the findings of Best and Zhang (1993) support this notion that an extension of bank credit conveys positive private information about the firm. Using financial analysts' percentage earnings forecast errors as a proxy for information asymmetry, they show that firms with high forecast errors enjoy significant positive stock price reactions to bank loan announcements, while firms with low forecast errors do not. Along similar lines, Hadlock and James (2002) investigate public companies' marginal financing decisions. They confirm the positive abnormal stock returns that accompany bank loan announcements, which are both statistically significant and also significantly different from the negative abnormal returns accompanying announcements of public issues of common stock and straight debt. In addition, they find that firms choosing bank debt have higher stock return volatility and higher analyst forecast errors than firms issuing public securities, which is consistent with the notion that information asymmetry and adverse selection costs drive firms to choose bank debt.

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<sup>7</sup> Lummer and McConnell (1989) distinguish between new bank loans and loan renewals. They find excess stock returns only around the announcement of loan *renewals*, but not new loans, which suggests that banks provide a credible signal of firm value only as a result of a continuing lending relationship with a borrower firm. This result also tends to contradict any monitoring hypothesis, since the market would appear not to attribute positive value to any prospective bank monitoring of new loans. However, subsequent research has not supported Lummer and McConnell's claimed distinction between new loans and renewals. Controlling for differences in other borrower and lender characteristics, such as precision of analyst earnings forecasts and lender credit quality, both Best & Zhang (1993) and Billett, Flannery, & Garfinkel (1995) find no statistically significant difference in stock price reaction to announcements of new loans versus renewals.

We take the lessons from the corporate finance literature on bank monitoring and connect them with the empirical corporate governance literature to show the beneficial effects of bank monitoring on firm value.

## II. OUR HYPOTHESES

Despite the evolving empirical focus on corporate governance, to date no one has attempted to measure performance effects of bank debt, which typically include agency cost reduction devices. No study has attempted to investigate the interaction of ongoing bank monitoring with corporate governance. We hypothesize that bank monitoring may enhance firm value. We believe that over a wide range of situations, the interests of lenders and equity holders converge in reducing managerial agency costs. We therefore hypothesize a general salutary effect of bank monitoring on firm value. Moreover, we expect bank monitoring to matter most when agency costs are high. We proxy high agency costs with measures of free cash flow and managerial entrenchment. This Part elaborates our bank monitoring hypotheses and discusses potential challenges to it.

### A. *Bank Monitoring and Agency Costs*

In this section, we first describe banks' monitoring advantage and its implementation. We then explain our use of free cash flow and management entrenchment measures to identify when bank monitoring may be most beneficial.

#### 1. *Bank Monitoring*

Banks enjoy important institutional advantages as monitors. Banks tend to specialize in lending to particular industries or regions, giving them exceptional background knowledge with which to assess performance of individual borrowers. Banks also typically lend on a short-term or medium-term basis in order to match their assets with their mostly short-term deposit liabilities. This short time horizon forces borrowers periodically to return to the bank or other capital providers for renewed financing. Renewal with the lending bank offers the bank a new opportunity to garner information about the borrower and to assess the borrower's creditworthiness (Fama 1985). More generally, regardless of whether the borrower firm ultimately renews with its bank lender or turns to new financing sources, the continuing specter of an impending assessment by the capital markets—with the required disclosure by the borrower and diligence by

prospective capital providers—may tend to keep borrower management in line during the life of the bank loan.

How does bank monitoring operate to control agency costs? The standard credit agreement imposes numerous specific restrictions and obligations on the borrower firm regarding operational matters and its financial condition.<sup>8</sup> The bank also demands a regular flow of information concerning the borrower's financial and operating performance in the form of periodic and special reporting requirements, as detailed below. Finally, the bank often enjoys access to the borrower's officers, directors, employees, and outside accountants to discuss the borrower's affairs, a privilege not available to the typical shareholder. Moreover, because the bank bears a duty of confidentiality with respect to borrower information, the bank generally enjoys better access to information than is publicly available (Benston and Smith 1976).

As far as operational constraints, negative covenants prohibit many types of transactions without the bank's consent. For example, the firm's use of loan proceeds is restricted. Its latitude to incur new debt, make investments or distributions, engage in transactions with affiliates, sell substantial assets, give liens on its assets, merge, or change the nature of its business, may all be explicitly restricted in the loan agreement. Nini, Smith, and Sufi (2007) show that limits on capital expenditures contained in bank credit agreements reduce firm investment, and they offer preliminary evidence that these restrictions are efficient. They find that both firm value and operating performance increase in the year after a firm becomes subject to a newly imposed capital expenditure restriction, suggesting that such restrictions reduce inefficient excess investment by managers.

Financial covenants also constrain the firm. It must, for example, preserve certain levels of net worth, tangible assets, total capital relative to debt, and cash flow relative to

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<sup>8</sup> See, e.g., Form 8-K filed by Staples Inc. (Dec. 20, 2004) (describing 2004 Revolving Credit Agreement with Bank of America); Form 8-K filed by Stride Rite Corp. (Sep. 22, 2005) (describing revolving credit agreement with Bank of America).

debt service obligations.<sup>9</sup> Myriad technical default provisions in the contract enable the bank to tighten the reins if the firm falters.

To facilitate monitoring of these myriad obligations and restrictions, the bank requires the borrower to provide a steady stream of information in the form of periodic financial and operating reports. With its periodic reports, the firm must certify its continuing compliance with each specific condition and restriction contained in the credit agreement. For example, in addition to producing quarterly financial statements, the firm may be required specifically to certify its net worth, tangible assets, cash flow, and other financial information in order to confirm its covenant compliance. Besides these regular reports, the borrower obligates itself to provide notice to the bank of any number of unfortunate incidents that might adversely affect the borrower's creditworthiness—material litigation, a default or potential default, receipt of a government notice of a material regulatory violation, for example. And as earlier mentioned, the bank typically enjoys access to the borrower's management and outside accountants in order to discuss the borrower's operational and financial condition.

Finally, in addition to contractual constraints and ongoing reporting, the bank often also has a representative on the borrower's board of directors (Krozner and Strahan 2001), which offers one more avenue for active monitoring.

## 2. *Free Cash Flow*

Free cash flow has been identified as an especially pernicious temptation for managers, who may “use it to bankroll forms of managerial slack.” (Triantis and Daniels 1995; Jensen 1986). We expect that *ceteris paribus*, firms with high free cash flow will benefit most from bank monitoring because of their higher potential agency conflicts. Bank loan arrangements address this free cash flow problem in several ways. First, mandatory regular interest and principal payments on the loan reduce the amount of free

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<sup>9</sup> Bond indentures contain similar provisions. *See, e.g.*, U.S. Bank National Ass'n v. U.S. Timberlands Klamath Falls, L.L.C., 864 A.2d 930 (Del. Ch. 2004). The court's detailed technical discussion of note indenture provisions in that case illustrates the thoroughness and complexity of creditor protections in standard credit arrangements.

cash. Second, bank loans often contain an excess cash covenant, which explicitly limits the borrower firm's cash on hand by requiring that any excess be used to pay down the bank debt. Third, the lender typically requires the borrower firm to maintain its deposit accounts with the lender. This enables the lender to monitor continuously the firm's cash levels and uses of cash. Finally, the bank may take security interests in the firm's asset, which further constrains managers' access to free cash. Because the security arrangement ordinarily prohibits sale or further hypothecation of the underlying collateral, managers' disposal of those assets to generate cash is not an option.

These constraints on free cash, along with the web of reporting requirements, covenant obligations and other restrictions, and explicit bank oversight serve to constrain overinvestment—viewed by some as the most serious agency problem for investors (Shleifer and Vishny 1997)—and otherwise control managerial slack.

### *3. Management Entrenchment*

Entrenchment insulates managers from discipline by shareholders and by the market for corporate control, thereby encouraging managerial slack. Corporate governance mechanisms that tend to insulate managers from discipline are numerous, as evidenced by the various governance indices scholars have devised to measure governance quality. Among the most potent entrenching devices is the staggered board (Bebchuk, Coates, and Subramanian 2002; Bebchuk and Cohen 2005). A staggered board is a board whose directors' multi-year terms are staggered. For example, only one-third of a firm's board seats may be up for election in any given year. This device prevents a hostile acquirer—even one who succeeds in acquiring a majority of the firm's stock or obtaining a majority of the firm's voting power by proxy—from replacing a majority of the board in any one annual election. Instead, the acquirer must wait through at least two annual elections.<sup>10</sup> This delay in seizing control of the firm discourages proxy fights and other hostile

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<sup>10</sup> A staggered board is most effective when the firm's governance arrangements do not permit shareholders to (a) effect amendments that unstagger the board; (b) increase the number of board seats and fill them; or (c) remove directors without cause.

takovers. With less to fear from the market for corporate control, managers may be less diligent in pursuing shareholders' interests.

As with free cash flow, we expect bank monitoring to be most beneficial when agency costs are high. Bank monitoring may matter most where managerial entrenchment is most severe.

*B. Potential Challenges to the Monitoring Explanation*

In this section, we address two potential conceptual challenges to our monitoring explanation. First, as earlier noted, in addition to the monitoring explanation, resolution of information asymmetry is also a plausible explanation for the positive stock market reaction to bank loan announcements. So we review the empirical and theoretical literature supporting the monitoring theory here. The two theories are not mutually exclusive, and we seek here only to show that bank monitoring offers at least a partial explanation for the increases in firm value we later observe. Second, we consider the effects of credit derivatives and other risk reducing devices available to banks that may diminish their incentives to monitor.

*1. Moral Hazard or Adverse Selection?: Monitoring versus Information Asymmetry*

Because we use a market-based metric for firm value as our dependent variable—industry-adjusted Tobin's Q—a preliminary issue arises in trying to interpret observed increases in Tobin's Q associated with the presence of bank loans. A bank loan announcement may resolve information asymmetry for stock markets. It may tell the market that the borrower is "bankable"—that it is creditworthy or may have good projects. Positive stock market reactions to bank loan announcements may also reflect the value to the firm of bank monitoring. While banks monitor to reduce moral hazard, the firm's equity holders may also benefit from the bank's ability to deter overinvestment by the firm's managers.

Because an increase in Q associated with a bank loan is consistent with either explanation, several of the models in our empirical section look at subsamples of firm-years in an attempt to isolate the monitoring effect. We also examine subsamples of loans based on their stated purposes, hypothesizing that certain types of loans carry little or no

benefit to equity markets in terms of resolving information asymmetry. Here we review in some detail the extant literature on the value of bank monitoring.

James (1987) offers perhaps the first evidence on the value of bank monitoring. He studies stock price reactions to public announcements of various types of debt financing. For bank loan announcements, James finds positive and significant stock price reactions. Distinguishing bank loans by stated purpose, he finds no significant difference in stock price response to announcements of (a) bank loans used to refinance debt (either existing bank loans or other debt offerings) and (b) bank loans used for capital expenditure. He concludes that loan announcement abnormal stock returns cannot be explained solely by an information asymmetry theory. As interesting, he finds a statistically significant negative stock price reaction for announcements of private and straight public debt offerings used to refinance bank loans. This result is consistent with our monitoring story. It does not support an information asymmetry theory.

Datta, Iskandar-Datta, and Patel (1999) find evidence that bank monitoring benefits bondholders. In their study, the presence of a pre-existing bank loan reduced at-issue yield spreads for borrower firms' first public debt offerings by an average of 68 basis points, which was both statistically and economically significant. As the authors note, this likely reflects the value of bank monitoring, which reduces moral hazard in a way that bondholders by themselves cannot.<sup>11</sup> By contrast, at the time of the bond issue, the already-existing bank loan offers no new information to the market, so it would be difficult to explain the reduced at-issue yield spreads as a product of reduced information asymmetry from the presence of bank debt. Moreover, the length of the bank/firm relationship is also statistically significant and negatively related to at-issue yield spreads, which is again consistent with the monitoring hypothesis. Datta, et al. explain this result as

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<sup>11</sup> Booth (1992) has found that the presence of rated public debt reduces bank loan spreads, suggesting that cross-monitoring benefits run in the other direction as well. However, the general consensus in the literature is that bank monitoring is superior (Amihud, Garbade, and Kahan 1999). Important for our purposes as well are the findings Mikkelsen and Partch (1986) and James (1987) that stock market reaction to announcements of public

consistent with Diamond's (1991) reputation-building hypothesis: firms that borrow and repay bank debt establish a good credit history, and this reputation has value in public debt markets, reducing the costs of public debt. However, another plausible explanation may involve the *lender's* reputation. A lengthy bank/firm relationship may signal the bank's familiarity with the borrower's business, thereby improving the bank's ability to monitor.<sup>12</sup>

Altman, Gande, & Saunders (2004) use a different event study methodology to detect the effect of bank monitoring. They examine loan and bond defaults, comparing trading price reactions around the default date. They find a smaller price reaction for loans than bonds, suggesting that more precise information is embedded in loan prices because of banks' superior ongoing monitoring.

Krishnaswami, Spindt, and Subramaniam (1999) study firms' mix of public versus private debt. They find that firms with greater growth prospects—and therefore greater debt-related moral hazard problems—rely more heavily on private debt than public debt because of the monitoring benefits of private debt. Greater growth prospects beget higher moral hazard because of the greater potential for asset substitution and underinvestment. Actively monitored private debt is therefore cheaper for such firms than public debt.

These studies support our monitoring hypothesis. Our results below confirm this view.

## 2. *Risk Reduction and Banks' Reduced Incentives to Monitor*

Another potential challenge to our monitoring hypothesis involves the plethora of risk reduction devices now available to bank lenders. Banks and other financial claimants have increasingly more and finer opportunities to transfer risk to third parties. Active

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debt offerings is negative or at best nonpositive. So any monitoring benefit of public debt appears not to accrue to equity holders.

<sup>12</sup> Moreover, regarding abnormal borrower stock returns upon bank loan announcements, Billett, Flannery, & Garfinkel (1995) have shown that the *lender's* public debt rating is positively correlated with higher abnormal borrower stock returns, supporting the general proposition that lender quality may matter to equity holders.

secondary loan markets and the ready availability of credit derivatives<sup>13</sup> enable banks and other financial institutions to lay off risk and rebalance their portfolios in response to changed circumstances. A bank's reduced exposure to a particular borrower correspondingly may reduce the bank's incentive to monitor that borrower carefully (Gande and Saunders 2006; Partnoy and Skeel 2006).

While use of these risk spreading devices has become more and more common among banks and other private lenders, there remain good reasons to expect that banks will continue to monitor their borrowers. First of all, the lead bank in a syndicate—typically the holder of the largest portion of the syndicated loan and the principal monitor on behalf of the bank group—rarely sells its loan. Instead, it typically retains its original loan in order to maintain its valuable relationships with the borrower firm and the other banks in the syndicate. And it continues to monitor. Gande and Saunders (2006) show empirically the importance of the lead bank's monitoring role in the face of secondary loan trading. They show a positive and significant relation between the size of the lead bank's stake in the syndicated loan and cumulative abnormal stock returns upon the loan's announcement.<sup>14</sup>

Even with devices available to lay off risk, banks' profit making generally depends on their taking positions in their borrower firms. A bank is not merely a loan broker. It gets paid to take risk. Though it may have new tools available to enable it to lend at lower risk, it still has incentive to monitor given its exposure. Moreover, diversification does not eliminate lending risk entirely. Loan purchasers and sellers of credit derivatives will have

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<sup>13</sup> The most popular credit derivative for bank lenders is the credit default swap. It effectively offers the lender default insurance on specific borrowers. As with conventional insurance, the insured (here, the lender) pays a premium to the issuer of the swap agreement, which obligates itself to repay the insured debt (or some portion) to the insured should the borrower default.

<sup>14</sup> Relying on abnormal stock returns event studies, Gande and Saunders (2006) do not attempt to disaggregate the bank's role in resolving information asymmetry from its ongoing monitoring role. However, their results are consistent with the theory that the lead bank's stake in the syndicated loan is positively associated with its monitoring incentives.

some stake in the continuing monitoring of borrowers, the efficacy of which will no doubt affect the pricing in these risk spreading transactions.

More traditional ex-ante risk reduction devices may also reduce bank monitoring incentives. A secured lender would generally have lower monitoring incentives than an unsecured lender to the same firm. We might also expect to see a secured lender doing less pre-loan diligence than an unsecured lender, so the information content of the secured lender's decision to lend may also convey less valuable information to the market than an unsecured loan. Similarly, loan size or the agent bank's stake in a loan may matter. Pre-loan diligence or monitoring for a small exposure is likely to be a less pressing matter for the lender than the same activities for a large exposure. In theory, then, we would expect to see higher  $Q$  for large unsecured loans than for small secured loans. We do not incorporate secured status or loan size in our empirical analysis because, even assuming our theoretical predictions hold, the results would not enable us to distinguish a monitoring effect from an information asymmetry effect.<sup>15</sup>

The next Part discusses our data and methodology.

### III. DATA AND METHODOLOGY

#### A. Data

Our universe of companies comes from the Investor Responsibility Research Center (IRRC) database, which has published seven volumes detailing firms' corporate governance provisions between 1990 and 2006. IRRC coverage includes all firms in the Standard & Poor's (S&P) 500, all firms named in annual lists of the largest corporations by *Fortune*, *Forbes*, and *Business Week*, and other firms the IRRC has considered important. In any publication year, the universe of IRRC firms covers over 90% of total U.S. stock market capitalization. Like GIM and BCF, we include all IRRC firms in our database through 2004, except for those with dual-class common stock. Because IRRC volumes are

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<sup>15</sup> As for loan sales, while they may reduce the lender's incentive to monitor, the effect of loan sales on Tobin's  $Q$  may be more complicated. Gande and Saunders (2006) find that the inception of loan trading has a positive effect on the borrower's stock price, suggesting

not published every year, we follow the convention adopted by GIM in treating firms' governance provisions as unchanged for the period from the last published volume to the next published volume.

We took firm financial information from Compustat. Company stock data came from CRSP monthly files. For loan information, we relied on the DealScan database from Loan Pricing Corporation, a comprehensive commercial loan database covering large and middle market commercial loans. DealScan contains detailed terms and conditions for over 147,000 loan and bond transactions dating back to 1982.

### *B. Methodology*

To study the relationship between bank monitoring and firm value, we use Tobin's Q as the measure of firm value. In our definition of Tobin's Q, we follow Kaplan and Zingales (1997), GIM (2003), and BCF (2004). According to this specification, Q is the ratio of the market value of assets to the book value of assets, where the market value of assets is equal to the book value of assets plus the market value of common stock minus the sum of book value of common stock and balance sheet deferred taxes. The dependent variable in our estimations is industry-adjusted Tobin's Q—each firm's Q minus the median Q in the firm's industry in the observation year. We define each firm's industry by the firm's 2-digit primary SIC code.

Our proxy for bank monitoring is an indicator variable that identifies years that firms had bank loans for all 12 months. As control variables, we included standard financial controls that previous research has identified as related to Tobin's Q. Following GIM (2003), we include the assets of the firm and the age of the firm measured in months. Following BCF (2004), we include return on assets, capital expenditures on assets, research and development expenditures, and leverage. We also include year dummies and firm dummies in the fixed effects regressions.

In most specifications, we rely on GIM's G-index as a measure of managerial entrenchment. As an alternative in some specifications, we include BCF's E-index and its

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that the information provided by secondary market trading *complements*—and not merely

components as measures of managerial entrenchment. We use these as either controls or as interaction variables. In some estimations, we also include a measure of free cash flow as a proxy for managerial agency costs. Shleifer and Vishny (1997) identify the tendency of managers to overinvest or misuse discretionary funds as the greatest agency conflict between managers and shareholders. Jensen (1986) asserts that free cash flow is the best measure of these discretionary funds and thus the best proxy for agency conflicts. Following Lehn and Poulson (1989) and Chi and Lee (2005), our measure of free cash flow is calculated as operating income minus interest expense, taxes, preferred dividends, and common dividends,<sup>16</sup> scaled by the book value of the firm's assets.

Table 1 provides descriptive statistics of variables included in the estimations. We present the descriptive statistics for our entire sample of firms. We also divide our sample into two subsamples—firms that have a bank loan at some point during our sample period and firms that do not—and present descriptive statistics for these subsamples as well.

#### IV. BANK MONITORING AND FIRM VALUE

To explore the relationship between bank monitoring and firm value, we perform several estimations to determine whether Tobin's Q increases when firms have bank loans. The results are shown in Tables 2 through 7. For each specification, we present the results of estimations both with and without the standard financial controls. All estimations include year dummy variables.

##### A. *Bank Loans and Firm Value*

###### 1. *Regression Analysis*

Table 2 presents the results of pooled OLS regressions (col. A & B) and regressions with firm fixed effects (col. C & D). In the pooled OLS regressions, the loan indicator variable has a statistically significant negative relationship with Tobin's Q, indicating that, in a standard cross-sectional relationship, firms with loans have *lower* Tobin's Q than firms without loans.

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substitutes for—the information traditionally garnered through bank monitoring.

<sup>16</sup> This cash flow computation is given by COMPUSTAT item #13 - #15 - (#16 - change in #35) - #19 - #21.

However, when we perform the same estimation controlling for unobserved firm heterogeneity in columns C and D, the loan indicator variable has a statistically significant positive relationship with Tobin's Q.<sup>17</sup> This result indicates that within each firm, the presence of a bank loan is associated with higher Tobin's Q. The substantial difference in the R-squared statistics between the pooled OLS regressions and the fixed effect regressions confirms the importance of firm-specific characteristics in explaining the changes in Tobin's Q.

Here and in the regressions that follow, our findings likely understate the monitoring benefits of bank debt because we assume each bank loan and its associated monitoring continue for the entire term given in the loan contract. Limitations in the data preclude us from identifying loans repaid before stated maturity or pinpointing when such early retirements occur. Therefore, we unavoidably count some number of firm-year observations as bank-monitored when in fact they are not.

## 2. *Robustness Checks*

In Table 3, we present variations of the fixed-effect estimations from Table 2 to test the robustness of those results. To address concerns about serial correlation in difference-in-difference studies (Bertrand, Duflo, and Mullainathan 2004), we first present the results with t-statistics computed from robust standard errors, which allows for heteroskedasticity (col. A & B). We then present the results with t-statistics computed from standard errors clustered by industry (col. C & D) and clustered by firm (col. E & F). Finally, we show the results of fixed-effect estimations that include industry-specific year effects to control for confounding variables that may be correlated with both obtaining a loan and firm

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<sup>17</sup> For each of the estimations in Tables 2-7, we also performed estimations without control variables on the sample of firms in the estimations with full controls (i.e., so that the samples match). We have no reason to think there is any selection bias as between the firms for which data are available for the full set of controls and those for which data are not available. Most of the results are similar in sign, significance, and magnitude when we run the without-controls regressions on the smaller sample, but occasionally a previously significant coefficient became insignificant. For brevity's sake, we do not report the results.

performance, such as interest rates or industry risk (col. G & H). The loan indicator remains statistically significant in all of these estimations.

*B. Exploring Simultaneity, Monitoring, and Alternative Theories*

The results from our previous regressions indicate a positive correlation between the presence of a bank loan and firm value. However, this does not prove our case for the importance of bank monitoring. First of all, bank loans might not necessarily cause firm value to increase. Causation might go in the other direction: perhaps firms with higher Tobin's Q are simply more likely to seek and obtain bank loans than firms with lower Tobin's Q.<sup>18</sup> Or perhaps some omitted third variable is responsible for both firms' obtaining of bank loans and high Tobin's Q, so that a positive relationship between firm value and bank loans could exist even if bank loans did not cause firm value to increase. Second, even if the presence of a bank loan causes an increase in firm value, bank monitoring may not be the only plausible explanation. The bank's willingness to lend may simply convey positive private information to stock markets about the borrower's creditworthiness or the strength of its projects. An increase in Tobin's Q may result simply from the resolution of information asymmetry for the markets, independent of any subsequent monitoring by the lender.

We show ultimately that simultaneity is an unlikely explanation for our observed increases in firm value in the presence of bank loans. In addition, our results below indicate that at least in part, bank monitoring explains observed increases in firm value.

*1. Simultaneity*

Our regressions in Tables 2 and 3 tend to suggest that causation runs in the direction we think. Pooled OLS regressions for our entire sample (tbl. 2, col. A & B) show

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<sup>18</sup> Krishnaswami, Spindt, and Subramaniam (1999) find, for example, a significant positive relation between a firm's market-to-book ratio and the proportion of its debt that is private debt. Their measure of market-to-book ratio may be highly correlated with Tobin's Q, which would suggest that firms with bank loans may simply have higher adjusted Q even if bank monitoring had no effect.

that overall, firms with bank loans have *lower* Tobin's Q than firms without. So it does not appear that firms start with high Tobin's Q and then get bank loans.

In Table 4 we explore this issue further. We attempt to determine whether, as between firms with and without bank loans, systematic differences exist that may be responsible for the positive relationship between loans and firm value. We run regressions with firm fixed effects for (a) only the firms in our sample that have a loan at some point during our sample period (the "Loan Firms") (col. A & B); (b) only the Loan Firms and only comparing the period before the loan with the period during the loan (col. C & D); (c) only the Loan Firms and only comparing the loan period with the period following the loan's retirement (col. E & F). These three specifications test whether a selection effect is driving our results. By limiting the analysis only to Loan Firms, we control for other fundamental differences between Loan Firms and other firms that may be causing a higher Tobin's Q. Moreover, if we are able to confirm that Tobin's Q both increases when firms get loans and decreases when firms retire loans, we minimize the possibility that an omitted third variable is responsible both for firms' obtaining loans and for increases in Tobin's Q. It is unlikely that this omitted third variable would suddenly appear when a loan was obtained—causing a timely increase in Tobin's Q—and then disappear when a loan was retired, causing a timely decrease.

We also run firm fixed effects regressions for the entire sample of firms, controlling for Tobin's Q in the year before each given firm obtains a bank loan (col. G & H).<sup>19</sup> This control variable will capture non-loan factors that may have increased firm value before the loan period and that would therefore produce a spurious positive correlation between a bank loan and Tobin's Q.

For most estimations, and for all of the estimations using the full set of controls, the loan's effect on Tobin's Q is positive and significant, providing strong evidence of a

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<sup>19</sup> According to our coding convention, a firm's loan indicator variable is set to 1 only in years when the firm had a bank loan for all twelve months. Therefore, our control here operates as to the year that is *two* years prior to the year that our loan indicator is first triggered.

positive relation between bank monitoring and Tobin's Q. It is therefore unlikely that simultaneity is responsible for the positive relationship between bank loans and firm value.

## 2. *Monitoring versus Information Asymmetry Theories*

The results in columns E-F and I-J tend to confirm our bank monitoring theory as well, as we explain below.

The results in columns C and D, comparing the period before the loan with the period during the loan, are consistent with either a monitoring theory *or* an information asymmetry theory. An increase in a firm's Tobin's Q during the loan period as compared to the preceding period may be explained by the market's initial revaluation of the firm in light of the new information conveyed by the bank's lending decision. Or the value added by bank monitoring over the term of the loan could explain the increase in Q.

However, the results in columns E and F comparing the loan period with the period after the loan's retirement seem consistent only with the monitoring theory. The drop in Q with the loan's retirement can be explained by the absence of the bank monitor, but it is not likely a result of any new information revealed by the loan's retirement—regarding, for example, the firm's growth prospects or the promise of its projects. To the extent that positive information about the firm's projects is conveyed to the market at the inception of a bank loan, we have no reason to expect that these good projects and their value-enhancing effects would cease simultaneously with the maturity of the loan.<sup>20</sup>

Finally, in columns I and J, we run estimations seeking to isolate the potential monitoring effects of bank loans on firm value. In order to separate a monitoring effect from an information asymmetry effect—the alternative theoretical explanation for observed increases in firm value—we measure the effects of only those loans *least* likely to

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<sup>20</sup> The suggestion has been made that a loan's retirement without renewal may signal the bank's assessment that the firm lacks good projects. However, it is far more likely that the firm merely chose alternative financing, probably in the form of public debt, which is cheaper than private debt above a certain issue size (Krishnaswami, Spindt, and Subramaniam 1999). As Diamond (1991) theorizes and Datta, Iskandar-Datta, and Patel (1999) support empirically, firms may borrow in private debt markets until they establish a good credit history, at which point they turn to cheaper public debt.

offer new information to the public markets about the firm's growth prospects or the quality of its projects. Increases in Tobin's Q associated with these "weak-information" loans would offer further evidence supporting a monitoring theory. To identify these loans, we look to the loan's primary purpose as indicated in the DealScan database. We include only loans for working capital, debt repayment, or commercial paper backup purposes in our set of weak-information loans.<sup>21</sup> Working capital loans are typically used for the short term financing of ordinary course purchases of inventory or other ordinary course operations. Debt repayment loans simply refinance existing debt. A commercial paper backup loan is merely a credit enhancement device for companies that issue commercial paper.<sup>22</sup> These types of loans seem to convey no strong positive information to public markets about the borrower firm's projects.

We compare the effects of these weak-information loans to firm-years in which there is no loan. For our models in columns I and J, our sample includes only firm-years where either (a) the firm has no loan; or (b) the firm's only loan(s) are weak-information loans. We ignore all other firm-years—i.e., firm-years in which a firm has a loan other than a weak-information loan. Our fixed-effect estimations show positive and significant coefficients on the loan indicator, demonstrating that weak-information loans are associated with increases in Tobin's Q. This result offers further support for our hypothesis that bank loans enhance firm value because of the monitoring that banks perform.<sup>23</sup>

Overall, the results in Table 4 suggest that it is unlikely that our results are explained by reverse causality or selection bias where only high-valued firms get loans. It

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<sup>21</sup> Other purposes identified with significant numbers of loans in the DealScan database include general corporate, acquisition, capital expenditure, LBO, project finance, real estate, recapitalization, takeover, trade finance, and other.

<sup>22</sup> The loan typically involves a short-term revolving credit or letter of credit that the borrower may draw upon should it find itself unable to roll over or otherwise refinance its commercial paper coming due.

<sup>23</sup> We would have liked to compare the effects of weak-information loans with strong-information loans. However, among the categories of what we consider to be strong-

is also unlikely that an omitted third variable is responsible both for firms' obtaining loans and for increases in Tobin's Q. Moreover, the results indicate that the loan indicator is not just a proxy for the existence of good projects, but that bank monitoring is at least partly responsible for the positive correlation between loans and firm value. In a word, bank monitoring enhances firm value.

C. *Interactions with Free Cash Flow and Managerial Entrenchment*

We have shown generally that bank monitoring improves firm value. Here we investigate the value-enhancing prospects for bank monitoring in specific contexts suggesting severe agency costs. Bank monitoring may be especially important in these contexts. We first test the value of bank monitoring when firms have high free cash flow. We then investigate bank monitoring in the presence of both high free cash flow and management entrenchment.

1. *Interactions with Free Cash Flow*

First, we explore the relationship between bank loans, free cash flow, and firm value. Free cash flow may increase the agency conflict between managers and shareholders because managers may be tempted to spend free cash for their own benefit—on perks or empire building, for example—rather than distribute it to shareholders (Jensen (1986)). The presence of a bank loan, however, may reduce these agency costs by monitoring managers' use of discretionary funds. In Table 5, controlling for entrenchment with the G-index, we use interaction variables to determine whether the value of bank monitoring is stronger in firms with higher free cash flow, which are subject to greater potential agency costs.

Again, for our measure of free cash flow, we use operating income minus interest expense, taxes, preferred dividends, and common dividends, scaled by the book value of the firm's assets. For estimations without interactions (col. A & B), the results indicate that, controlling for entrenchment, the loan indicator has a positive relationship with

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information loans—for example, capital expenditures, acquisitions, real estate, project finance—the number of loans is insufficient to offer a meaningful comparison.

Tobin's Q, while free cash flow is not statistically significant. When we include the interactions between the free cash flow and the loan indicator (col. C & D), the negative coefficient on the independent free cash flow variable and the positive coefficient on the interaction together suggest that (i) when bank monitoring exists to control agency costs of free cash flow, free cash flow may improve firm value; but (ii) in the absence of bank monitoring, the agency costs associated with free cash flow may reduce firm value. Finally, the last two columns (col. E & F) indicate that the positive effect of bank monitoring and free cash flow on firm value is even greater for firms with substantial cash flow, or those in the top one-third of our sample in terms of free cash flow. Overall, our results strongly suggest that bank monitoring interacts with free cash flow to enhance firm value. This is consistent with our hypothesis that the value-enhancing effect of bank monitoring may matter most where agency costs are high.

## 2. *Interactions with Free Cash Flow and Managerial Entrenchment*

Here, we explore the relationships among bank loans, free cash flow, management entrenchment, and firm value. GIM (2003) and BCF (2005) have shown a negative correlation between managerial entrenchment and firm value. We hypothesize that bank monitoring may mitigate the value-decreasing effects of management entrenchment. Banks' continuing oversight of firms' compliance with financial covenants and operating and investment restrictions may constrain managers despite the slack that entrenchment affords and the temptation that free cash flow presents. The results from Table 5 above suggest that bank monitoring improves managers' use of discretionary funds to increase firm value. In Tables 6 and 7, we test for similar value-enhancing effects of bank loans, now in the context of specific entrenchment arrangements. We test for the effects of free cash flow on firm value for a given level of entrenchment, and then test to see whether the presence of a loan affects this interaction of free cash flow and management entrenchment. We use a series of interactions between bank loans, free cash flow, and measures of management entrenchment. In Table 6, for our measures of entrenchment we use our two governance indices—the G-index and E-index. In Table 7, we use the six individual entrenchment provisions comprising the E-index.

Our results in Table 6 support the findings of Table 5. We find that for a given level of entrenchment, free cash flow in the presence of bank monitoring improves firm value. In columns A and B of Table 6, we see positive and significant coefficients on the interaction of free cash flow and the G-index, indicating that for a given governance quality, firm value increases with free cash flow.<sup>24</sup> When we interact the loan indicator with free cash flow and the G-index, we similarly find a positive and significant relation to firm value. This suggests that for a given governance quality (a given level of entrenchment), free cash flow in the presence of bank monitoring may improve firm value. We obtain similar results in columns C and D, where we use the E-index as our entrenchment measure, though in the model with full controls, the coefficient is insignificant.

For estimations reported in Table 7, we use similar interactions, except that instead of a governance index, we interact using the six individual entrenchment provisions from the E-index. Our results are largely consistent with those in Table 6. As to interactions between free cash flow and individual entrenchment provisions, we find that firm value increases with free cash flow, given the presence of any of the following: a poison pill, a supermajority requirement for mergers, a staggered board, limits to bylaw amendments,

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<sup>24</sup> A recent empirical study by Chi and Lee (2005) finds evidence of a *negative* relationship between firm value and the interaction between free cash flow and managerial entrenchment. Our specification differs somewhat from theirs. In all of our estimations reported in Tables 6 and 7, we consistently find a positive and significant relationship between firm value and the interaction of free cash flow with our entrenchment measures.

However, when we run separate regressions for Loan Firms and non-Loan Firms, we find a positive interaction between free cash flow and managerial entrenchment for only the non-Loan Firms. For Loan Firms, we find a statistically significant *negative* coefficient on the interaction between free cash flow and managerial entrenchment. As the non-Loan Firms in our sample have higher mean firm value—as measured by industry-adjusted Tobin's Q—than the Loan Firms, these results are consistent with the idea that free cash flow improves firm value for high-Q firms because those firms have good projects in which to invest their cash (Lang, Stulz, and Walkling 1991). In contrast, for the Loan Firms—with lower mean Q—free cash flow may represent the potential for managerial abuse of discretionary funds. Consistent with this, when we split the sample of firms in half based on whether they have above- or below-median Tobin's Q, we find that

and golden parachutes. Coefficients are positive and significant in each model, with and without controls. Only limits on charter amendments have no statistically significant interactive effect with free cash flow. When we include the loan indicator in the interaction, we find positive and statistically significant interactions in the presence of staggered boards, poison pills (in the specification without the full set of controls), and golden parachutes (in the specification without the full set of controls).<sup>25</sup> These results suggest that with any of these three entrenching provisions, free cash flow in the presence of bank monitoring improves firm value.

3. *Strong Entrenchment: When Bank Monitoring May Matter Most*

Why might bank monitoring have this value-enhancing effect with free cash flow in the presence of these three entrenchment provisions, but not with the other entrenchment provisions that also merit inclusion in the E-index? Again, it may be that bank monitoring matters most in situations with high agency costs. These three provisions—staggered boards, poison pills, and golden parachutes—have direct relevance for managerial slack and entrenchment, while the others arguably do not.

Our estimations involving the staggered board offer our strongest results for the value of bank monitoring. Consistent with our high agency cost theory, the corporate governance literature recognizes the special potency of the staggered board as an entrenching device. (Bebchuk, Coates, and Subramanian 2002; Bebchuk and Cohen 2005). As earlier mentioned, an effective staggered board prevents the timely ouster of a majority of the firm's board of directors, requiring even a majority of shareholders to wait through at least two annual elections to accomplish the task.<sup>26</sup> This delay in gaining

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only the high-value firms show a positive interaction between free cash flow and managerial entrenchment.

<sup>25</sup> These results are consistent whether or not we include controls for other E-index provisions besides the specific provision of interest in each model. Estimations with such controls are not reported.

<sup>26</sup> As earlier noted, a staggered board is most effective when the firm's governance arrangements do not permit shareholders to (a) effect amendments that unstage the board; (b) increase the number of board seats and fill them; or (c) remove directors without

control of the firm strongly deters a proxy fight or other hostile takeover. Moreover, Bebchuk and Cohen (2005) offer empirical evidence suggesting that a staggered board reduces firm value. Similarly, the poison pill has been recognized as another potent entrenchment tool, especially when used in combination with a staggered board (Bebchuk, Coates, and Subramanian 2002; Bebchuk and Cohen 2005). A poison pill effectively precludes a hostile acquirer from purchasing a block of the target's stock above some percentage threshold.<sup>27</sup> It does this by diluting the value of the acquirer's stock in the target firm once the percentage threshold is reached.<sup>28</sup> The standard maneuver to defeat a pill is to obtain control of the board in order to redeem the pill. But an effective staggered board prevents this approach. So together the pill and the staggered board offer very strong entrenchment.

The golden parachute operates a bit differently from these other two devices in increasing agency costs. A golden parachute promises incumbent managers a handsome payout upon a change of control of the firm. The parachute in effect offers a soft landing for ousted executives. Unlike other "entrenching" provisions, the parachute generates agency costs for the opposite reason. Rather than insulating management from the takeover market and protecting managers' jobs, the golden parachute eases their transition

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cause. Our data do not distinguish among levels of effectiveness of staggered boards. This only biases our sample against us, however.

<sup>27</sup> Some have cautioned not to overrate the presence of a pill, since a firm without a pill can always adopt one without shareholder approval, even in the face of a hostile bid. So even a firm without a pill is protected by a "shadow pill" (Coates 2000). On the other hand, whether a pill is in place or not may have a signaling effect to potential acquirers. A pill in place may signal the board's determination to fight any hostile bid, while the absence of a pill—or the removal of an existing pill—may signal management's "softness" to a potential acquirer (Bebchuk, Cohen, and Ferrell 2005).

<sup>28</sup> The dilution is effected by issuing rights to all stockholders to purchase securities—typically of the target but sometimes of the acquirer—at steep discounts once the acquirer's stock holdings in the target exceed the specified percentage threshold. The rights may be exercised by all stockholders except the unwanted acquirer.

to unemployment. By reducing the sting of takeover market discipline, the parachute may encourage managerial slack.<sup>29</sup>

By comparison, for the other three provisions of the E-index—supermajority voting for mergers, limits to by-law amendments, and limits to charter amendments—the joint interactions with free cash flow and the loan indicator in Table 7 produced no significant results. This lack of results might be explained by the fact that these three provisions are in some sense second-order entrenchment devices that do not by themselves directly protect managers from hostile takeovers. Limits to by-law and charter amendments do not directly enable managerial slack. Instead, they prevent shareholder modification of other provisions—namely, staggered boards and poison pills—that do directly entrench managers by shielding them from capital market discipline. Similarly, a supermajority voting requirement for mergers seems of secondary importance for entrenchment purposes because shareholders would only get to vote on a merger proposal after its approval by the board. Therefore, a supermajority requirement would matter in a hostile takeover context only if management lost control of the board—i.e., if the staggered board were ineffective at preventing a loss of control. Supermajority requirements, then, offer only a “second line of defense.” (Bebchuk, Cohen, and Ferrell 2005).

Free cash flow with strong entrenchment may present a situation where bank monitoring matters most. Bank oversight of managers’ use of discretionary funds may add the most value when agency costs are highest—when strong entrenchment would otherwise encourage managers to squander free cash.

## V. CONCLUSION

Our study is the first to integrate into the empirical corporate governance literature a careful consideration of the effects of bank monitoring on agency cost reduction. Using Tobin’s Q as our metric for firm value, as is standard in the corporate governance literature, we find strong evidence that bank monitoring adds value. Controlling for the G-index and for potential simultaneity, we find a positive and significant relation between

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<sup>29</sup> Of course, this may benefit shareholders to the extent it renders management more amenable to a takeover (Kahan and Rock (2002)).

firm value and the presence of a bank loan. In addition, using measures of free cash flow to differentiate companies with high agency costs, we find that bank monitoring interacts with free cash flow to enhance firm value. Finally, we investigate interactions among our loan indicator, free cash flow, and various measures of governance quality. We show first that, for a given quality of corporate governance, free cash flow in the presence of bank monitoring improves firm value. Second, we differentiate among E-index provisions, showing that bank monitoring may matter most when strong entrenchment would otherwise encourage managers to squander free cash—i.e., when agency costs are high. In effect, bank monitoring can counteract somewhat the value-decreasing effect of managerial entrenchment. Bank monitoring may substitute for good corporate governance.

This finding has several important implications. First, corporate governance thinking must incorporate the effects of bank governance—and perhaps governance provisions embedded in other types of contractual commitments as well. For example, empirical studies of corporate governance may need to control for bank monitoring in order to isolate the effects of traditional governance arrangements. Studies typically control for firm characteristics affecting measures of firm value but have generally ignored the possibility that bank monitoring may also matter. Governance scholars have noted the perils of studying particular governance devices in isolation from one another (Bebchuk and Cohen 2005; Bebchuk, Cohen, and Ferrell 2005). In the same way, investigating traditional governance devices in isolation from bank governance may generate biased results. Second, courts should tread lightly in promulgating legal doctrines tending to impede banks from enforcing contractual governance provisions (Baird and Rasmussen 2006). Though doctrines like lender liability, equitable subordination, and deepening insolvency tend to impose liability on lenders, if at all, in situations of financial distress, the general discouragement of bank monitoring may have negative effects that carry well beyond the financial distress context.

We have demonstrated that corporate governance may involve more than just corporate law. Contracting parties may share an interest with shareholders in controlling managerial agency costs. We show that bank monitoring may perform such a function

even outside the confines of financial distress. Bank monitoring improves firm value in general.

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TABLES  
Table 1.  
Descriptive Statistics

Variable	Entire Sample			Loan Firms Only			Non-Loan Firms Only		
	# of Obs.	Mean	Standard Deviation	# of Obs.	Mean	Standard Deviation	# of Obs.	Mean	Standard Deviation
Industry-Adjusted Tobin's Q	22487	0.720	3.316	14470	0.546	2.199	8017	1.033	4.688
Loan Indicator	28335	0.373	0.484	17472	0.605	0.489	10863	0.000	0.000
G Index	17889	9.183	2.752	11923	9.349	2.757	5966	8.850	2.712
E Index	17889	2.153	1.307	11923	2.191	1.299	5966	2.079	1.321
Free Cash Flow	23337	0.092	0.183	15430	0.110	0.148	7907	0.057	0.234
Assets (in millions)	27886	6946.195	35947.88	17375	8214.022	43493.35	10511	4850.438	17158.770
Firm Age (in months)	28335	230.026	215.337	17472	254.798	224.330	10863	190.183	193.494
ROA	27866	0.014	0.237	17365	0.037	0.134	10501	-0.024	0.341
CAPEX/Assets	25553	0.062	0.064	16648	0.061	0.061	8905	0.063	0.069
Leverage	22860	0.436	0.249	14761	0.446	0.209	8099	0.417	0.308
R&D per Sales	14328	0.490	7.903	9095	0.101	1.014	5233	1.166	12.981

Table 2.  
Bank Loans and Firm Value

Variable	A	B	C	D
Loan Indicator	-0.065** -2.54	-0.088** 1.96	0.085*** 2.79	0.151*** 2.73
G-index	-0.055*** -12.82	-0.066*** -8.3	-0.039*** -3.8	-0.041** -2.05
Assets		0.000003 1.55		-.00001*** -3.25
Firm Age		-0.001*** -4.95		-0.001 -1.25
ROA		0.681*** 6.51		0.847*** 7.26
CAPEX/Assets		3.858*** 8.13		2.579*** 4.62
Leverage		-0.277*** -2.78		0.926*** 7.37
R&D per Sales		0.031*** 8.81		0.015*** 5.08
Firm fixed effects?	no	no	yes	yes
Number of Observations	13710	6711	13710	6711
R-squared	0.03	0.079	0.628	0.622

This table reports both pooled OLS regressions (first 2 columns) and regressions with firm fixed effects (last 2 columns). The dependent variable in all regressions is industry-adjusted Tobin's Q. Tobin's Q is the ratio of the market value of assets to the book value of assets, where the market value of assets is equal to the book value of assets plus the market value of common stock minus the sum of book value of common stock and balance sheet deferred taxes. We compute the industry-adjusted Tobin's Q by subtracting the median Tobin's Q in the industry from each firm's Tobin's Q, where industry is defined by two-digit SIC code. The loan indicator is equal to 1 for all years that firms had bank loans for all 12 months. The G-index ranges from 0 to 24 to indicate the entrenchment provisions of each firm. ROA is net income/assets. CAPEX/Assets is capital expenditures/assets. R&D per Sales is research and development expenditures/total sales. Leverage is total debt/assets. Although not shown in the tables, year dummies are included in all regressions. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Table 3.  
Robustness Checks

Variable	A	B	C	D	E	F	G	H
Loan Indicator	0.09** 2.49	0.15** 2.41	0.09** 2.00	0.15** 2.25	0.09* 1.74	0.15* 1.67	0.10*** 3.11	0.18*** 3.05
G-index	-0.04*** 3.78	-0.04** -2.11	-0.04*** -2.61	-0.04** -2.00	-0.04** -2.28	-0.04 -1.37	-0.04*** -3.63	-0.05** -2.16
Assets		.00001*** -2.70		0.000001 -1.46		0.00001 -1.42		.00001*** -4.73
Firm Age		0.00 -1.48		0.00 -1.28		0.00 -1.13		0.53 0.32
ROA		0.85*** 3.69		0.85*** 2.67		0.85*** 3.07		0.86*** 7.30
CAPEX/Assets		2.58*** 3.52		2.58*** 2.69		2.58*** 2.79		2.71*** 4.70
Leverage		0.93*** 2.65		0.93** 2.44		0.93** 2.26		1.02*** 7.63
R&D per Sales		0.02* 1.82		0.02 1.41		0.02 1.45		0.02*** 5.03
# of Observations	13694	6708	13694	6708	13694	6708	13694	6708
R-squared	0.628	0.622	0.628	0.622	0.628	0.622	0.652	0.639

*CROSS-MONITORING AND CORPORATE GOVERNANCE*

Notes: This table reports regressions with firm fixed effects where the dependent variable is industry-adjusted Tobin's Q. We describe the calculation of industry-adjusted Tobin's Q, along with the definitions of other control variables, in Table 2. Columns A and B report estimations with t-statistics computed from robust standard errors; columns C and D report estimations with t-statistics computed from standard errors clustered by industry; columns E and F report estimations with t-statistics computed from standard errors clustered by firm; and columns G and H show the results of estimations that include industry-specific year effects. Although not shown in the tables, year and firm dummies are included in all regressions. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Table 4.

Bank Loans and Firm Value: Exploring Potential Simultaneity

Variable	A	B	C	D	E	F	G	H	I	J
Loan Indicator	0.047 1.56	0.125** 2.38	0.036 1.14	0.1* 1.75	0.062 1.61	0.142** 2.12	0.092*** 3.00	0.155*** 2.78	0.188*** 3.82	0.281*** 3.08
Industry-Adj. Tobin's Q in Year before Loan							-0.025* -1.83	-0.01 -0.52		
G-index	-0.025** -2.22	-0.01 -0.46	-0.03*** -2.67	-0.016 -0.77	-0.036** -2.43	-0.04 -1.44	-0.039*** -3.78	-0.041** -2.04	-0.046*** -3.29	-0.06*** -2.19
Assets		-0.0001*** -2.79		-0.0001*** -3.09		-0.0002*** -5.07		-0.0001*** -3.23		-0.0001*** -2.62
Firm Age		-0.001 -0.79		-0.001 -0.74		0.001 0.79		-0.001 -1.25		-0.001 -1.55
ROA		2.62*** 13.05		2.47*** 12.04		2.592*** 10.49		0.848*** 7.27		0.568 4.18***
CAPEX/Assets		1.294** 2.01		0.795 1.25		0.857 1.09		2.584*** 4.63		3.663 5.05
Leverage		-0.316 -1.6		-0.334* -1.69		-0.197 -0.79		0.926*** 7.37		1.008 6.81
R&D per Sales		-0.001 -0.01		-0.009 -0.1		-0.6 -1.34		0.015*** 5.08		0.01*** 3.29
All Firms / Loan Firms only?	Loan Firms	Loan Firms	Loan Firms	Loan Firms	Loan Firms	Loan Firms	All Firms	All Firms	See notes	See notes
Entire period / Before loan / After loan?	Entire	Entire	Before	Before	After	After	Entire	Entire	Entire	Entire
# of Observations	9529	4575	9042	4277	7050	3519	13710	6711	9201	4484
R-squared	0.628	0.638	0.646	0.66	0.659	0.656	0.628	0.622	0.64	0.627

## *CROSS-MONITORING AND CORPORATE GOVERNANCE*

Notes: This table reports regressions with firm fixed effects where the dependent variable is industry-adjusted Tobin's Q. We describe the calculation of industry-adjusted Tobin's Q, along with the definitions of other control variables, in Table 2. Columns A and B report estimations where the sample includes only firms that have loans during our sample period. Columns C and D report estimations on only the Loan Firms and only comparing the period before the loan with the period during the loan. Columns E and F report estimations on only the Loan Firms and only comparing the loan period with the period following the loan's retirement. Columns G and H report estimations on all firms, but controlling for Tobin's Q in the year before firms get bank loans. In columns I and J, our sample includes only firm-years where either (a) the firm has no loan; or (b) the firm's only loan(s) are for working capital, debt repayment, or commercial paper backup purposes, which are generally unrelated to the financing of good projects. The loan indicator is equal to 1 for only the years that a firm had such a bank loan. Although not shown in the tables, year and firm dummies are included in all regressions. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Table 5.  
Bank Loans and Firm Value: Interactions with Free Cash Flow

Variable	A	B	C	D	E	F
Loan Indicator	0.087*** 2.81	0.149*** 2.7	-0.273*** -6.84	-0.23*** -3.24	-0.243*** -6.07	-0.194*** -2.74
Free Cash Flow	-0.122 -1.54	-0.348 -1.55	-0.458*** -5.57	-0.926*** -3.97	-0.443*** -5.4	-0.891*** -3.84
Loan Indicator * Free Cash Flow			3.075*** 14.01	3.398*** 8.4	1.624*** 5.61	1.544*** 3.09
Loan Indicator * Free Cash Flow * Top 1/3					1.884*** 7.65	2.739*** 6.3
G-index	-0.037*** -3.59	-0.037* -1.86	-0.037*** -3.59	-0.036* -1.82	-0.036*** -3.51	-0.034* -1.7
Assets		-.00001*** -3.5		-.00001*** -3.74		-.00001*** -3.83
Firm Age		-.0004 -0.62		-.0003 -0.48		-.0003 -0.54
ROA		1.163*** 6.95		1.18*** 7.1		1.188*** 7.17
CAPEX/Assets		2.957*** 5.16		2.648*** 4.65		2.446*** 4.3
Leverage		0.891*** 5.99		0.697*** 4.67		0.72*** 4.83
R&D per Sales		0.016*** 4.24		0.009*** 2.41		0.01** 2.51
Firm fixed effects?	yes	yes	yes	yes	yes	yes
Number of Observations	12833	6359	12833	6359	12833	6359
R-squared	0.637	0.629	0.643	0.633	0.645	0.636

This table reports regressions with firm fixed effects where the dependent variable is industry-adjusted Tobin's Q. We describe the calculation of industry-adjusted Tobin's Q, along with the definitions of other control variables, in Table 2. We add free cash flow measures to the estimations reported in this table, where our measure of free cash flow is calculated as operating income minus the sum of the following components: a) total income taxes minus the change in deferred taxes from the previous year to the current year, b) gross interest expenses on debt, c) dividend payments on preferred stocks, and d) dividend payments on common stocks. This is divided by the firm's book value of assets. Columns A and B report estimations including the free cash flow measure; columns C and D add an interaction between free cash flow and the loan indicator; columns E and F add an additional interaction term between the loan indicator, free cash flow, and an indicator variable for firms with free cash flow in the top 1/3 of our sample. Although not shown in the tables, year dummies are included in all regressions. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Table 6.

Bank Loans and Firm Value: Interactions with Free Cash Flow and Governance Indices				
Variable	A	B	C	D
Loan Indicator	-0.145*** -3.54	-0.055*** -0.74	0.01 0.28	0.117* 1.75
Free Cash Flow	-2.011*** -6.94	-2.692*** -4.92	-0.726*** -8.1	-1.122*** -4.73
G-index	-0.073*** -6.58	-0.072*** -3.41		
Free Cash Flow * G-index	0.243*** 5.81	0.284*** 3.83		
Free Cash Flow * G-index * Loan Indicator	0.209*** 8.52	0.189*** 4.18		
E-index			-0.166*** -8.48	-0.17*** -4.36
Free Cash Flow * E-index			0.759*** 11.25	0.973*** 8.08
Free Cash Flow * E-index * Loan Indicator			0.286*** 3.38	0.132 0.82
Assets		-0.0001*** -3.75		-0.0001*** -3.83
Firm Age		-0.0003 -0.53		-0.00032 -0.52
ROA		1.182*** 7.1		1.068*** 6.42
CAPEX/Assets		2.694*** 4.72		2.607*** 4.58
Leverage		0.626*** 4.11		0.444*** 2.86
R&D per Sales		0.012*** 3.01		0.015*** 3.82
Firm fixed effects?	yes	yes	yes	yes
Number of Observations	12833	6359	12833	6359
R-squared	0.643	0.633	0.643	0.635

## *CROSS-MONITORING AND CORPORATE GOVERNANCE*

This table reports regressions with firm fixed effects where the dependent variable is industry-adjusted Tobin's Q. We describe the calculations of industry-adjusted Tobin's Q, free cash flow, and the other control variables in Table 2. This table reports estimations that include interactions between free cash flow and two governance indices (the G-index and E-index) and among free cash flow, the governance indices, and the loan indicator. In columns A & B, the governance index is GIM's G-index. In columns C & D, the governance index is BCF's E-index. Although not shown in the tables, year dummies are included in all regressions. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Table 7.  
Bank Loans and Firm Value: Interactions with Free Cash Flow and Entrenchment Provisions

Variable	A	B	C	D	E	F
Loan Indicator	-0.008 -0.23	0.112* 1.74	0.078** 2.44	0.153*** 2.67	0.017 0.48	0.07 1.07
Free Cash Flow	-0.624*** -7.2	-1.044*** -4.45	-0.177** -2.18	-0.432* -1.91	-0.645*** -7.36	-0.952*** -4.09
Poison Pill	-0.524*** -12.1	-0.546*** -7.0				
Free Cash Flow *	2.16***	2.716***				
Poison Pill	10.61	7.94				
Free Cash Flow *	1.258***	0.49				
Poison Pill * Loan Indicator	4.98	1.07				
Supermajority for merger			-0.121 -1.49	-0.228 -1.44		
Free Cash Flow *			1.133***	2.235***		
Supermajority			2.87	2.66		
Free Cash Flow *			0.402	-0.124		
Supermajority * Loan Indicator			0.87	-0.14		
Staggered Board					-0.34*** -4.91	-0.168 -1.11
Free Cash Flow *					2.29***	2.61***
Staggered Board					11.07	7.27
Free Cash Flow *					0.911***	1.055**
Staggered Board * Loan Indicator					3.57	2.18
Firm fixed effects?	yes	yes	yes	yes	yes	yes
Full set of Controls	No	Yes	No	Yes	No	Yes
Number of Observations	12833	6359	12833	6359	12833	6359
R-squared	0.644	0.635	0.637	0.629	0.643	0.634

This table reports regressions with firm fixed effects where the dependent variable is industry-adjusted Tobin's Q. We describe the calculations of industry-adjusted Tobin's Q, free cash flow, and the other control variables in Table 2. This table reports estimations that include interactions between free cash flow and the three entrenchment provisions and among free cash flow, the entrenchment provisions, and the loan indicator. Although not shown in the tables, year dummies are included in all regressions. The full set of controls found in Tables 2 – 6 are included in the estimations reported in columns B, D, and F, but omitted for brevity. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Table 7. (continued)

## Bank Loans and Firm Value: Interactions with Free Cash Flow and Entrenchment Provisions

Variable	A	B	C	D	E	F
Loan Indicator	0.089*** 2.81	0.153*** 2.72	0.087*** 2.79	0.151*** 2.7	0.051 1.48	0.137** 2.21
Free Cash Flow	-0.223*** -2.72	-0.422* -1.88	-0.127 -1.59	-0.342 -1.52	-0.472*** -5.51	-0.836*** -3.52
Limits to Amend Bylaws	-0.336*** -4.37	-0.442*** -2.98				
Free Cash Flow * Limits to Amend Bylaws	1.514*** 4.69	2.278*** 4.25				
Free Cash Flow * Limits to Amend Bylaws * Loan Indicator	-0.239 -0.59	-0.32 -0.36				
Limits to Amend Charter			-0.145 -0.91	0.011 0.03		
Free Cash Flow * Limits to Amend Charter			0.88 0.9	0.709 0.34		
Free Cash Flow * Limits to Amend Charter * Loan Indicator			-0.053 -0.05	-0.594 -0.21		
Golden Parachute					-0.236*** -6.04	-0.192*** -2.63
Free Cash Flow * Golden Parachute					1.701*** 8.46	2.089*** 5.32
Free Cash Flow * Golden Parachute * Loan Indicator					0.498** 1.99	0.194 0.39
Firm fixed effects?	yes	yes	yes	yes	yes	yes
Full set of Controls	No	Yes	No	Yes	No	Yes
Number of Observations	12833	6359	12833	6359	12833	6359
R-squared	0.637	0.63	0.636	0.628	0.64	0.631

This table reports regressions with firm fixed effects where the dependent variable is industry-adjusted Tobin's Q. We describe the calculations of industry-adjusted Tobin's Q, free cash flow, and the other control variables in Table 2. This table reports estimations that include interactions between free cash flow and the three entrenchment provisions and between free cash flow, the entrenchment provisions, and the loan indicator. Although not shown in the tables, year dummies are included in all regressions. The full set of controls found in Tables 2 – 6 are included in the estimations reported in columns B, D, and F, but omitted for brevity. T-statistics appear below the coefficient estimates. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.