

## **Board Quality and the Cost and Covenant Terms of Bank Loans**

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## **Board Quality and the Cost and Covenant Terms of Bank Loans**

### **Abstract**

We provide evidence that board quality affects the loan terms that borrowers obtain from their banks. Specifically, we show that firms with higher quality boards borrow at lower interest rates. This relation exists even after controlling for ownership structure, CEO compensation policy, and shareholder protection as well as the size and financial characteristics of the borrower. We also show that board quality and other governance characteristics influence loan covenant requirements, but the relations differ by covenant type. Firms with high quality boards are less likely to have loans with financial ratio restrictions or collateral requirements, though these covenants are more likely when CEO compensation is high. Financial ratio requirements are more likely when inside ownership is high, and a collateral requirement is more likely when the firm has a higher percentage of institutional owners. Loan Sweep requirements do not appear to be affected by board quality, but they are more likely when the firm has a greater probability of being taken over (fewer anti-takeover provisions).

# **Board Quality and the Cost and Covenant Terms of Bank Debt**

## **I. Introduction**

The potential for conflict between shareholders and bondholders has long been recognized (Jensen and Meckling (1976)). Governance characteristics that strengthen the position of shareholders relative to creditors may result in firms accepting high-risk projects (or engaging in mergers) that may benefit shareholders but expropriate wealth from bondholders. Reflecting this conflict, creditors of firms with stronger pro-shareholder governance may insist on higher loan rates and more restrictive covenants. In contrast, some governance characteristics may improve firm efficiency in such a way that both creditors and shareholders benefit, thereby reducing the cost of loans and/or their covenant requirements. We propose that a high quality board of directors is one such mutually beneficial governance characteristic, and a high quality board may be beneficial to both shareholders and lenders if the board provides superior monitoring of management and/or if the boards' characteristics allow it to negotiate better loan terms. We explore the empirical relation between board quality and the cost and covenant terms of bank loans.

Prior research on the importance of the board focuses primarily on the influence of the size and independence of the board (for example see, Yermack (1996), Hermalin and Weisbach (2003), and Coles, Daniel and Naveen (2008)). Very few studies examine characteristics of the board of directors beyond board size and degree of independence though Erhardt, Werbel, and Shrader (2003), Carter, Simkins, and Simpson (2003), and Jurkus, Park, and Woodard (2008) report that the number of female board members is positively related to financial indicators of firm performance. Ryan and Wiggins (2004) show that director equity-based compensation is tied to the power of independent directors versus the CEO. Additionally, Brick, Palmon, and

Wald (2006) examine director compensation and share ownership and find evidence that excess compensation of directors (and CEOs) is associated with poor firm performance.

We hypothesize, and our results generally support, that high quality boards are those that are larger, are more independent, have directors with greater experience (experienced), have directors that participate as board members in other firms (busier), are more diverse, are better compensated, and have greater share ownership.<sup>1</sup> Indeed, our empirical analysis shows that six of these seven measures of board quality impact the cost and/or covenant requirements of bank loans. That is, we find that board quality affects borrowers' lending packages.

Prior studies (e.g., Bhojraj and Sengupta (2003) Anderson, Mansi, and Reeb (2004), Klock, Mansi, and Reeb (2005) and Chava, Livdan, and Purnanandam (2007) and Cremers, Nair, and Wei (2007)) relate the cost of borrowing-usually the cost of bonds- to a variety of borrower characteristics (typically individual or small subsets of governance characteristics). Consistent with these studies, we find that both increased board size and independence result in lower cost bank loans. However, we also find that greater board experience decreases bank loan costs, and that these board quality measures are important determinants of loan costs even after controlling for CEO compensation and ownership, institutional ownership, shareholder protection, and many financial and loan characteristics known to impact loan prices.

Covenant characteristics have generally been ignored in prior governance research, yet covenants can have very important effects on firm behavior. For example, Chava and Roberts (2007) show that lender banks interfere with management following covenant violations and that this leads to a sharp contraction of capital expenditures for covenant-violating borrowers. We

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<sup>1</sup>Fich and Shivdasani (2006) find that firm value is negatively impacted by the experience of board members, including the number of other boards upon which they sit. Our measure of board experience and busyness differ (due to The Corporate Library's available data) from theirs. Additionally, we consider the impact of these measures on creditors, therefore, our predictions differ from those found by Fich and Shivdasani (2006).

find that board quality and other governance characteristics influence not only the cost of the loan, but also bank loan covenant requirements. We do not find that board or other governance characteristics affect the number of covenants, but rather we find that they affect the type of loan covenants. Specifically, borrowers with larger, more independent, busier (those with members who also serve on four or more other boards), more diverse, and better paid boards and with lower CEO ownership are less likely to have financial ratio covenant limitations. Firms with more experienced and more diverse boards and with lower institutional ownership and takeover probability are less likely to have collateral requirements on their loans. Board quality does not appear to influence whether firms have sweep requirements on their loans, but those with greater shareholder protection (higher probability of takeover) are more likely to have sweep requirements.

The importance of understanding the relationship between board quality and the cost and covenant terms of bank loans is enhanced by the quantitative significance of bank loans in corporate capital structures. Indeed, Bradley and Roberts (2004) report that private debt, including bank loans, ranges from two to three times the amount of new issuances of public debt. Additionally, bank loan covenants are flexible at loan origination and are often renegotiated during the time period of the loan, while public debt is seldom renegotiated. Bank loan terms are also likely to be influenced by the length and strength of the relationship between the borrower and its bank, a characteristic that is absent from bond debt. The bank lender usually maintains a monitoring role during the life of the loan that is more active than for bond debt even if, as is often the case, the bank loan is syndicated.

Our paper proceeds as follows. Section II provides a discussion of our sample and of the process by which the data were obtained. This is followed by an analysis of the financial, loan,

board quality, and other governance characteristics of the sample. Section III provides analyses of the effects of board quality on the loan price and then on the association between board quality and loan covenants. This is followed by the conclusions in Section IV.

## II. Data

### A. Data sources and sample selection criteria

Our governance data are taken from The Corporate Library database that provides a large set of governance characteristics for S&P 1500 firms. Variables related to the board of directors, to ownership structure, and to compensation are extracted for the years 2002 through 2004. In order to minimize any potential simultaneity biases, we measure the board quality measures (and other governance mechanisms) that were in place in a given year and then assess the association between the board quality and credit terms one year later. Thus, our loan data are for the years 2003 through 2005. Loan information comes from the Loan Pricing Corporation Deal Scan database that provides information on loans made by a large number of commercial banks to their business borrowers. Data include the interest rate charged, the fee structure of the loan, specific covenant data, the size and maturity of the loan, and loan covenant information, as well as other dimensions of the loan. Our sample comes from the intersection of the Corporate Directory and the Deal Scan databases. We further require that the borrowers have financial data available from COMPUSTAT for each of the relevant years (one year prior to the loans). We supplement the executive compensation data when needed using EXECUCOMP. We exclude loans for which the cost of borrowing is missing, and we exclude financial firms and regulated utilities. These criteria result in a sample of 1859 loans representing 1311 firm-years of data.

## B. Financial Characteristics

Table 1 provides the basic financial characteristics of our sample firms (represented once per year regardless of the number of loans).<sup>2</sup> Using the criteria listed above naturally results in a sample of relatively large firms.<sup>3</sup> In fact our sample firms tend to be larger than those in the Compustat universe (excluding financials, utilities, and firms in our sample), where the mean value of total assets is \$146.88 million. Sales to total assets, long-term debt, market to book ratio, tangible to total assets, quick ratio, and the standard deviation of stock returns are all comparable to the Compustat universe, but ROA and times interest earned for our sample are substantially higher and total liabilities to total assets is lower than they are for other Compustat firms. Not surprisingly, comparing our sample to the Compustat universe shows that our firms have greater financial viability and are less risky, which is consistent with our firms being (on average) larger.

[Table 1 about here]

## C. Loan characteristics

Table 2 provides the characteristics of the loans in our sample all of which are taken or created from data from Loan Data Corporation. In Panel A we provide cost and covenant information. The loan cost, referred to as the all-in-spread drawn (hereafter AISD), usually consists of a floating interest rate (points above the LIBOR rate quoted in basis points) and includes the relevant fees associated with the credit facility. For our sample, the median AISD

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<sup>2</sup> Allowing repeat loans per firm in the analysis biases our results against finding significant relations between the cost of the loan and the governance variables because each set of loan terms is unique to the loan in question even within a given year, but the governance variables do not change per firm within a single year.

<sup>3</sup> The data reported in the tables and used for the analysis were winsorized (top and bottom 1%) for variables that were subject to potentially extreme values such as market value of equity, total assets, and others.

is 100 basis points (mean of 123 basis points), which is similar to the spread reported by Anderson, Mansi, and Reeb (2006) for corporate bonds.

Following Bradley and Roberts (2004) and Demiroglu and James (2007), we focus on five covenant types to create two types of variables for analysis. First, we create a covenant index composed of five covenant characteristics: whether the loan is secured, whether the covenant requirements include more than two restrictions on the value of financial ratios, and whether the loan covenants include asset, debt, and equity sweeps. The index has a maximum value of five (one point for each of the previously listed covenant restriction) and a minimum value of zero. Second, we place the five covenant characteristics into three covenant categories. For each category the loan is given a value of 1 if the covenant requirement exists for that loan, and a value of zero otherwise. The three covenant categories are as follows: 1) financial ratio covenants (more than two financial ratio restrictions), 2) sweeps (debt, equity, or asset) covenants, and 3) collateral requirement covenants.<sup>4</sup> In Table 2 Panel A, roughly 25% of our sample have financial ratio (>2) covenants, many have sweep covenants (28% asset, 23% debt, and 48% equity), and almost one-half have collateral requirements.

[Table 2 about here]

In Panel B of Table 2 we show that our median loan maturity is 60 months, and the median loan amount is \$300 million. We use three measures of the relationship between the

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<sup>4</sup> As discussed by Drucker and Puri (2007) data from Loan Pricing Corporation Deal Scan database may show that a loan does not have a particular covenant (i.e., the field for that particular covenant shows “no”) when in fact the data for all covenants for that particular loan are missing. To protect against this possibility (as do Drucker and Puri (2007)) our summary statistics and any analysis involving covenant data require that the loan have at least one non-missing covenant.

borrower and the lender based on data for the prior 15 years from the date of the loan. Table 2 shows that the median number of years (first measure) of the relationship between the borrower and the lender is 5, the median number of loans (second measure) extended to the borrower is 4, and that almost 93% have a previously established relationship with their lenders (based on a dummy variable (third measure) equal to 1 if the firm has a prior lending relationship with the current lending bank).

#### D. Board quality characteristics

The mean and median values of the board quality measures (from The Corporate Library) are presented in Table 3. We consider board quality to include board size, board independence, the percentage of board members with more than 15 years of service, the percentage of board members who also serve on four or more other boards, the percentage of female board members as a proxy for board diversity, director pay, and director ownership. Our sample boards are smaller (mean of 9) than those reported by Anderson, Mansi, and Reeb (2004) (mean of 12), but ours have a greater proportion of independent directors (75%) than theirs (58.33%).<sup>5</sup> These differences may reflect the more recent time period for our study and the trend in recent years toward more independent boards. Many of our sample board members (median of 10.0%) have served on the board for over 15 years, and 7.7% (median) serve on more than four additional boards of directors. Also, our boards have about 1 female on their (average 9 member) boards of directors.<sup>6</sup> An average of over thirteen percent of board members own none of their firms'

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<sup>5</sup> While independent directors dominate the boards we find (but do not report in table form) that there is substantial variation among the different firms (the standard deviation is 15%) with the lowest independent director representation being 16%, and the highest being 94%.

<sup>6</sup> Two of our measures of board quality are: 1) the percentage of the board with more than 15 years experience and 2) the percentage of the board with more than four other board appointments. Given that "long" tenure and "many"

shares, but 53.31%, of our sample firms have at least one director without an ownership interest in the firm.

[Table 3 about here]

#### E. Other governance characteristics

Because studies of single or small subsets of governance mechanisms have shown that mechanisms in addition to board independence are related to borrowing costs, we control for ownership structure, CEO compensation, and shareholder protection in addition to board quality. Ownership structure measures include the percentage ownership of officers and directors, of CEOs, and of institutions. CEO ownership is a relatively low (less than 1% mean), though it is higher than that reported by Klock, Mansi, and Maxwell (2005). However, officers and directors as a group own about 15% (mean) of our firms' stocks.<sup>7</sup> Institutional investors hold 70% (mean) of our firms' shares, that is higher than the 55% institutional holdings reported by Klock, Mansi, and Maxwell (2005).

In Table 3 we show the means and medians of CEO compensation. The average CEO earned \$1.5 million (median) per year in salary, bonus, and other compensation. The compensation structure for the CEOs in our sample is heavily weighted toward performance-based compensation, comprising over 58% (median) of CEO total compensation.

Our shareholder protection variables include the Gompers, Ishii, and Metrick (GIM) index, the Bebchuk, Cohen, and Ferrell (BCF) index, and a staggered board indicator variable. Higher values of the GIM and BCF indexes indicate that shareholder rights are restricted and

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other board appointments are arbitrarily defined, our choices of 15 years and more than four other boards are driven entirely these by data provided by The Corporate Library.

<sup>7</sup> Neither Anderson, Mansi, and Reeb (2004) nor Klock, Mansi, and Maxwell (2005) report ownership of officers and directors

management is entrenched. In short, higher values of these indexes suggest more rights for management and fewer rights for shareholders. Our value for the GIM index is identical to that reported by Chava, Livdan, and Purnanandam (2007) in their study of the influence of shareholder rights restrictions on the cost of bank loans.

### III. Multivariate Analysis and Results

The focus of our analysis is on the association between board quality and the cost and covenant characteristics of bank loans. We adapt models used in prior studies (Berger and Udell (1995), Strahan (1999), Booth and Booth (2004)) designed to explain the influences of borrower financial characteristics on both the price and non-price terms of bank loans. These studies relate the loan terms for bank borrowing to borrower financial characteristics such as borrower size, profitability, liquidity indicators, risk, and capital structure variables. Our analysis employs many of the same financial risk measures used in prior studies but adds to the empirical analysis the board quality and other governance variables that we discuss earlier in the paper. Our purpose in these tests is twofold: First, we document for the first time the relations between board quality and the cost of bank debt. Second, we provide new evidence regarding whether board quality (or other governance mechanisms) influence covenant requirements.

We present our results as follows. First, in Table 4 we present our ordinary least squares regression results for the loan cost models that control for industry and year. Table 5 provides the results of first differences regression models. These models are used in an attempt to clarify the causality issues that are unlikely to exist (due to sample design), but that could impact the interpretation of results surrounding the relations between loan cost and board quality and/or our other governance variables. Also in this table we report the results of the second stage of a two

stage least squares model used to help overcome the possibility that board quality (and other governance characteristics) and loan costs are endogenously determined. In Table 6 we report the results of second stage least squares models that attempt to control for the simultaneous determination of loan costs and covenant requirements (using the covenant index). We report in tables 7-9 the results of logit models that relate each of three covenant types to board quality and other characteristics of the loans and the borrowers.

#### A. Multivariate relations for the cost of borrowing

##### 1. Board quality

Table 4 reports the results of ordinary least squares models relating the log of the cost of borrowing (LAISD or log of all-in-spread drawn) to board quality and control variables. These results include Fama-French industry dummies and year dummies. Model 1 gives the results using all of our variables. Model 2 eliminates all insignificant control variables, while model 3 further eliminates all insignificant board quality and other governance control variables.

Our results indicate that firms that have larger boards are, able to borrow at lower rates. This relation exists even after adjusting for firm size and for the financial characteristics of the firm, and it suggests that bank lenders view larger boards positively in terms of their appraisal of the credit risk of the borrower. Perhaps larger boards incorporate more combined expertise across members. These results are contrary to those reported by Yermack (1996) who finds a negative relationship between board size and Tobin's  $q$ . They are, however, consistent with Coles, Daniel, and Naveen (2008) who report a positive relation between board size and Tobin's  $q$  for firms that are large, diversified, and highly leveraged.

We also observe a negative and statistically significant relation between the proportion of

outside directors and loan costs. These results are consistent both with Anderson, Mansi, and Reeb (2004) and with Bhojraj and Sengupta (2003) who study the influence of board independence on bond borrowing costs.

We also find that firms with more directors who have served for more than 15 years (those with greater experience) borrow more cheaply than those with fewer experienced board members. This evidence in addition to the negative relation between board size and borrowing costs implies that bank lenders are comforted by larger, more independent, and more experienced boards. Firms with directors who have served on the board for many years may develop personal relationships with bank loan officers. These personal relationships may become a part of the “soft” information that banks use to evaluate credit requests. This factor may be important in bank credit relationships though we would not expect it to be important in obtaining funds from the public, debt market.

We do not find a statistically significant relation between the number of other boards that our directors serve on, board diversity, board compensation, or board ownership and the cost of bank borrowings. These results are in contrast with those of some prior studies. For example, Fich and Srivdasani (2004) report that firms have less positive financial characteristics when the majority of their directors serve on three or more boards. Specifically, they find that their firms have lower market-to-book ratios and lower operating profitability. Erhardt, Werbel, and Shrader (2003) report that board diversity, including the number of female board members, is positively related to financial indicators of firm performance. Carter, Simkins, and Simpson (2003) find that more diverse boards (those with higher percentages of female and/or minority members) are related to higher firm values. Ryan and Wiggins (2004) show that director compensation and equity ownership is tied to the power of independent directors versus the

CEO. They show that independent directors have more equity-based compensation in firms with a large proportion of independent directors. While we do not find that the service of our board members on other boards, the diversity of the board, board compensation or ownership are important, we are focusing on their importance in influencing the cost of borrowing rather than the value of equity or firm performance. Additionally, these board quality measures may be influential in determining which loan covenants are required by bank lenders.

## 2. Other governance and control variables

Most previous research has focused on the relation between institutional ownership and the cost of equity rather than the cost of debt. Institutions are sophisticated investors and often have large enough holdings in the stock of individual firms to mitigate the diffusion of ownership that has long been associated with lack of incentives to properly monitor and discipline the firm (Grossman and Hart (1980), and Shleifer and Vishny (1986)). Agrawal and Mandelker (1992) and Borokhovich, Brunarski, and Parrino (2004) provide empirical evidence supporting the hypothesis that under certain circumstances institutional monitoring may have a positive effect on firm value. Smith (1996) suggests that a powerful activist institutional shareholder can directly influence managerial decision-making, while Bushee (2000) finds that institutions can influence managerial decision-making when the investment horizon is short and institutions engage in momentum trading. Hartzell and Starks (2003) suggest that the concentration of institutional ownership affects the extent to which institutional investors monitor internal firm operations while Bhojraj and Sengupta (2003) find that more concentrated ownership is associated with higher bond yields and lower bond ratings. Finally, Cremers, Nair, and Wei (2007) find that institutional shareholdings, as a proxy for shareholder control, increase

bond yields if the firm is exposed to takeovers, but not firms in which the bonds have event risk protection.

Consistent with the findings for bonds of Bhorjraj and Sengupta (2003) and Cremers, Nair, and Wei (2007) we show in Table 4 a significant, positive relation between institutional ownership and the cost of bank debt. However, we find this relation generally rather than just for firms exposed to takeovers.<sup>8</sup> Our results are consistent with the possibility that bank lenders view higher levels of institutional ownership negatively, either due to the fact that institutional owners are too active in pressing managements to increase risk in order to generate higher shareholder returns or are too passive to provide complementary monitoring and discipline.<sup>9</sup> In contrast, we do not find the inside ownership impacts the cost of bank loans.

It is unclear how CEO compensation may affect the cost of bank debt. Higher cash compensation for the CEO may imply that the manager is of higher quality, or it may imply that the CEO simply works at a larger firm or is entrenched. A greater percentage of options-based pay may better align managers' interests with those of shareholders. However, such an alignment of interests may be detrimental to debt holders if greater alignment means that managers may be more inclined to take greater risks (consistent with maximizing shareholder wealth) and thereby expropriate wealth from creditors. On the other hand, if more stock-based pay (or cash compensation) motivates managers to increase effort, or gives managers more incentives not to invest in value destroying pet projects without increasing average project risk, then lenders may view stock based compensation positively. Our empirical evidence in Table 4

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<sup>8</sup>Cremers, Nair, and Wei (2007) examine large blockholdings, but the results reported in Table 4 include all institutional holders.

<sup>9</sup> We use other specifications of institutional ownership such as 5% or large block institutional ownership, the total percentage of small (less than 5% institutional ownership) institutional holdings, and a dummy variable equal to one for firms with 5% block institutional ownership and zero otherwise. We find for each of these variables either a positive and significant relation or a statistically insignificant relation with all-in-spread-drawn.

indicates the lack of a relationship between the loan cost and CEO compensation.

Shareholder protection is commonly measured using the Gompers, Ishii, and Metrick (2003) index where the sum of up to 24 shareholder protection provisions is used to calculate the GIM index. Recently, Bebchuk, Cohen, and Ferrell (2004) find that of the 24 provisions there are six that are most important in describing shareholder protection. We include the BCF-index in our models and find that the index is significantly and negatively related to the cost of borrowing. Thus, borrowers with greater shareholder protection (lower probability of a takeover) pay less for their bank loans, *ceteris paribus*. Our results are consistent with those of Chava, Livdan, and Purnanandam (2007) who find that fewer takeover defenses are associated with higher bank borrowing costs.<sup>10</sup>

Several borrower financial characteristics also impact the cost of borrowing. Consistent with prior literature, we find that firms that are larger, have less leverage, and have lower risk (measured by the standard deviation of their stock prices) borrow at lower cost. Firms that have higher profitability as measured by ROA also pay less for their bank loans. Additionally, borrowers pay more for term loans, reflecting the sharply upward sloping yield curve during our sample years.

Prior studies show that bank credit terms are influenced by the nature of the relationship between the borrower and the lender. For example, Boot and Thakor (1994) develop a model that predicts that longer bank-borrower relationships will result in lower loan rates and less collateral requirements. In contrast, Greenbaum, Kanatas, and Venezia (1989) predict that longer bank-borrower relationships will lead to higher borrowing rates. Empirical evidence on the effects of bank-borrower relationships is extensive. For example, Petersen and Rajan (1994) find

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<sup>10</sup> The results are robust to using the GIM index or an indicator variable with a value of one if the firm has a staggered board (zero otherwise) in place of the BCF index.

that stronger bank-borrower relationships have only minor effects on the cost of credit but do increase the availability of funds. In contrast, Berger and Udell (1995) find that longer bank-borrower relationships result in both lower borrower costs and reduced collateral requirements.

While the exact effects of the bank-borrower relationship on the terms of bank credit is in dispute, both theory and empirical evidence indicate that the bank-borrower relationship may have an important influence. In contrast, we find no evidence in Table 4 that the extent of the borrower-bank relationship affects the cost of the loan (though as discussed later it does seem to affect whether certain covenant requirements are part of the loan). This may reflect the large sizes of the firms in our sample, which are, on average, much larger than the borrowing firms used in most of the bank relationship studies. Bank/borrower relationships would be expected to be less significant for larger firms that have more alternative sources of credit, both at other banks and from the capital market. The lack of any strong relationship may also reflect the fact that most of the loans in our sample are syndicated.

Taken together, our results to this point support the notion that firms with favorable board and financial characteristics are those with the best bank loan rates. That is, our findings are consistent with banks viewing favorably high board quality because it provides monitoring that is complementary to their own monitoring efforts. In contrast, banks require greater loan price compensation for firms that have pressures for returns from their institutional investors and also for firms that are more likely to be takeover candidates.

Although not the main focus of our paper, we realize that, as with any governance study, there may be some concern regarding potential simultaneity and/or endogeneity issues. In particular, there may be feedback between the loan costs and board quality (e.g., perhaps firms with better loan rates simply attract a certain type of board of directors). We attempt to minimize

the potential bias due to feedback in two ways. First, as discussed earlier, our data for the loan rate is measured in the year following the data year for the board characteristics. Therefore, the potential for loan costs to affect these characteristics is likely to be minor. However, given that board characteristics may change relatively slowly over time, residual feedback problems may remain. To assess the importance of this potential bias, we regress the changes in the loan rates on the changes in board quality and other independent variables, and we report these results in Table 5.

A concern may also exist that board quality and our other governance variables and financial characteristics are endogenously determined. To address this potential, an instrumental variable for each of the board quality characteristics would need to be identified. Such instruments would need to be related to a single board quality characteristic and not the others board quality characteristics or to the other governance or firm characteristics. This clearly is impossible with seven different board quality characteristics. Therefore, we first combine all of our board quality characteristics into a single board quality index and we use an instrument for that index in a two-stage least squares model.

The overall board quality index is created by assigning point values to the board quality measures contained in the previously presented models. A value of one is assigned to the variable within the index if we believe that the characteristic is viewed favorably by creditors, and is zero otherwise. We sum these points to obtain the index value with a maximum of 7 and a minimum of zero. Second, we search for a variable that is correlated with the board quality index, but not with the other variables in the model. Given the difficulty in identifying such an instrument we use an instrument that is statistically adequate (in terms of its correlations). The only variable we identified that could reasonably be used is the firm's times interest earned ratio.

Fortunately, the times interest earned ratio does appear to be a good instrument. Therefore, we instrument for the board quality index using the times interest earned in the first stage of the two-stage least squares model.<sup>11</sup>

The results reported in Table 5 for our first differences models using the cost of the loan as the dependent variable are similar to those reported in Table 4 for the levels (rather than changes) models. Specifically, board quality comprised of board size, the importance of outside directors, the length of tenure of outside directors are statistically significant and negatively related to loan cost. Additionally, the change in the BCF index is negatively and significantly related to loan cost, and the change in institutional ownership remains significant and positively related to the loan cost.

Model 3 in Table 5 reports the second stage of our two-stage least squares model where we replace the numerous board quality characteristics with our board quality index. A Wu-Hausman test rejects the null hypothesis that our governance index is exogenously determined; therefore a two-stage least squares approach is needed. Model 3 reveals that the board quality index is significantly, negatively related to loan cost. This new approach to managing the problem of endogeneity implies (consistent with our Table 4 results) that firms with high quality boards borrow at lower rates.<sup>12</sup>

## B. Multivariate relations for the covenant restrictions

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<sup>11</sup> It may be argued that all of the governance characteristics under consideration (not just the board quality measures) and the financial characteristics of the firms may be endogenously determined. Therefore, we also perform the analysis by creating an overall governance index that includes the board quality index and one point each for institutional ownership, inside ownership, CEO incentive compensation plus the BCF index. This comprehensive governance index has a maximum value of 16, and a minimum value of zero.

<sup>12</sup>The results using the overall governance index do not differ qualitatively from the results using the board quality index in all likelihood because the board quality index drives the overall governance index results. Specifically, we find that the overall governance index is significantly, negatively related to loan cost.

We next explore the effects of board quality and other governance characteristics on the covenant terms of the bank credit relationship. Because no other researchers have examined these relations we will focus on not only board quality, but also on how other governance characteristics of the firm impact covenant requirements. Our expectation is that borrowers with high board quality and other favorable (but not pro-shareholder) governance attributes will be able to obtain loans with less onerous covenant restrictions. Although the link between governance characteristics and covenant requirements has not been evaluated in the prior literature, covenant restrictions may prove to be as important as or more important than the cost of the loan to the borrower. Chava and Roberts (2007) find that several aspects of firm life may be disrupted (e.g., reductions in capital spending) by covenant violations, potentially leading to reductions in borrowers' stock prices. Therefore if high board quality and certain governance characteristics reduce the possibility of having more restrictive or more often violated covenants (particularly if the same characteristics lead to decreased loan cost), ultimately the firm's cost of capital could be positively affected by a high quality board and other desirable governance characteristics.

In Table 6 we provide the results of the second stage of a two-stage least squares regression model where we attempt to control for the simultaneous determination of the loan cost and the loan covenants using the covenant index. We estimate our basic models from Table 4 using a two-stage least squares approach where we include the covenant index in the loan cost model and then instrument for it, and where we include the loan cost in the covenant index model and then instrument for it as well. The results of the second stage of each of these two-stage least squares models are presented in Table 6.<sup>13</sup> For models 1 and 2 Wu-Hausman tests

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<sup>13</sup> Finding instruments that are related to loan covenants but not to loan cost, and then those that are related to loan cost but not to covenants proved very difficult. Therefore, we relied only on statistical rather than on economically

reveal that the covenant index and loan costs are not endogenously determined, but again we report these results for completeness. Consistent with the results reported in Tables 4 and 5 we find that borrowers with larger boards, more outside directors, and directors with longer tenure are able to borrow at lower rates (those with higher board quality). We also find that a larger institutional shareholder presence leads to higher borrowing costs. We do not, however, find that the BCF index is statistically significant. This finding may indicate that board quality is more important than the shareholder protection mechanisms in determining loan costs. This result has important implications because other studies of corporate governance and loan costs and many of the bond studies consider only a GIM index or other shareholder protection measure as their sole governance variables.

For models 3 and 4 (shown in Table 6) Wu-Hausman tests reveal that the null hypothesis of exogenous determination of loan cost is rejected at the 10% level. We find limited evidence that board quality or other corporate governance characteristics affect the number of loan covenants that banks require. Specifically, we show only one board variable (the percentage of members on the board who are also on four or more other boards) to be marginally statistically significant. Additionally, we find that the BCF index is marginally significantly related to the covenant index. Our findings suggest that corporate governance characteristics play an important role in determining the cost of borrowing for firms, but that loan-specific characteristics and the previous borrower/bank relationship are important in determining the number of covenants that banks require.

Each table (7-9) presents the results of logit models in which the existence or non-

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intuitive variables in our choice of instruments. We used the board variable, percentage of directors who failed to regularly attend board meetings, as our instrument for the covenant index, and board independence as the instrument for loan cost within the covenant index models. Each of these instruments was correlated with the instrumented variable, but not with the dependent variable.

existence of a particular loan covenant (as opposed to the number of covenants previously examined) is regressed upon board quality and other governance, borrower financial characteristics, and loan attribute control variables. In each table, the first model includes all variables of interest. The second model eliminates insignificant control variables, and the third model further eliminates insignificant governance variables. Following Bradley and Roberts (2004) and Demiroglu and James (2007) the dependent variables are the existence of more than two financial ratios (Table 7), the existence of asset, debt issue, and/or equity sweeps (Table 8), and the existence of one or more collateral requirements (Table 9). Overall, our results indicate a strong link between board quality and covenant requirements, but this relation is quite covenant-specific.

We recognize that modeling covenant requirements is complex since there are often scores of different types of covenants in bank loans and the potential effects of the covenants depends not only on their existence but also on the exact covenant requirement. For example, a financial ratio requirement is very important if the existing ratio is near the level required by the loan covenant, but may be of minor importance if it is not. While we have selected three sets of covenants that, *a priori*, appear to be very important and that have been used in prior studies, our interpretations of the empirical evidence in tables 7-9 must be qualified by the inherent limitations in our ability to completely measure the covenant dimensions of credit.

Table 7 shows the results of each of three models for the financial ratio restriction covenants. Again, in these models the dependent variable is 1 if more than two ratio restrictions exist and equals zero otherwise. This table shows that borrowers are much less likely to have more than two financial ratios if their board size is larger, the board has more independent directors, the board members serve on many other boards, and if there is diversity on the board.

(the two latter variables are not significantly related to loan cost). In other words, having a high quality board greatly reduces the chance of having financial ratio covenant restrictions.

Ownership and compensation characteristics also seem to be important. In model 3 we show that borrowers are more likely to have more than two financial ratio covenants if they have greater inside ownership and higher CEO cash compensation. Taken together, these results provide strong evidence of a link between board quality and financial ratio covenants. We interpret these results as indicating that the bank lender is less likely to insist on strict covenants for the borrower if it has confidence in the ability and willingness of the borrower to follow policies that do not materially add risk to the bank lender's credit exposure.

Many of the control variables are also significantly related to the existence of more than two financial ratio covenants. Not surprisingly, larger firms, firms with higher market to book ratios, and investment grade firms are less likely to have more than two financial ratio covenants. Loans with longer maturities are more likely to have more financial ratio covenants as are loans extended under a line of credit. In contrast, firms with higher return on assets are more likely to have financial ratio covenants, perhaps because these firms achieve the higher profitability by taking more risk. This view is consistent with the positive relation between the standard deviation variable and financial ratio covenants. These may also be firms that operate in industries that experience more volatility and thus have much more inherent risk. Neither the length of the lending relationship nor the strength of shareholder protection appears to influence the financial ratio covenant.

Table 8 suggests that board quality does not influence the existence of sweeps in the loan agreement. None of the board quality, ownership, or compensation variables is significantly related to the existence of sweeps covenants. However, and of substantial importance, the BCF

shareholder protection variable is statistically significant in all three models. This result suggests that the bank lenders add sweeps provisions to the covenants if it appears that there is some reasonable likelihood that the firm will be taken over. The control variables generally behave as expected. Specifically, sweeps are more likely if the borrower has a high degree of leverage and if the loan is a line of credit. Sweeps are less likely if the lender has a longer relationship with the borrower. We expect that lenders with longer relationships with borrowers would have more confidence in their borrowers and therefore would have less need to impose sweeps covenants in loan contracts.

Our final covenant requirement relates to the existence of collateral. Table 9 shows that loans are less likely to require collateral if the borrower has high board quality. Specifically, if a board is more diverse and more experienced the borrower is less likely to have to put up collateral for the loan. Collateral is more likely for borrowers with large institutional ownership and with high executive compensation. Collateral requirements are less important for firms with weak shareholder control as proxied by the BCF index and by longer lending relationships. The other control variables behave as they do in prior model specifications.

Overall, our results provide important new evidence with respect to the determinants of covenants in bank loan agreements. Firms with higher board quality are viewed positively by creditors and are less likely to have restrictive covenants when they borrow from banks, but the relations are covenant-specific.

#### IV. Conclusions and Implications

Our results from a large sample of bank loans to commercial borrowers suggest that the quality of borrowers' boards of directors is associated with both the price and covenant terms of

their bank loans. We find that borrowers with larger, more independent, and more experienced boards are able to borrow at lower interest rates, and those that also have greater board diversity and better director compensation are less likely to have financial ratio restrictions, even after adjusting for the influences of firm size and the financial characteristics of the borrower. We also find that borrowers with busier board members (those who are members on more than four other boards) and boards that are more diverse are less likely to require collateral. Board quality does not appear to impact whether bank loans contain sweeps provisions, but sweeps are more likely for firms with a greater threat of takeover (greater shareholder protection).

Additionally, we find that firms with larger percentages ownership by institutional investors pay more for their bank loans, and are more likely to be required to collateralize their loans. Firms subject to potential takeovers also pay more for their loans. While the length of the relationship between the borrower and the bank does not appear to influence the cost of the loan it does have an influence on which restrictive covenants are required in the loan contract.

Our results suggest that high board quality, thought to be beneficial for shareholders, is also good for creditors. These results have important implications for individual borrowers as well as for public policy. To the extent that our results may be generalized to firms not represented in the S&P 1500 and to other time periods, borrowers should be able to lower their direct costs of obtaining credit from their banks and also to reduce the covenant requirements in their loans by altering the composition and quality of their board of directors. From a broader, public policy perspective, our results are consistent with recent legislative initiatives and guidelines put in place by the exchanges and other groups that expand the importance of outside directors. For example, the New York Stock Exchange proposed in 2002 (and adopted in 2003) a requirement that all listed firms have a majority of independent directors and that these

independent directors must have no material relationship with the firms. The NASDAQ adopted similar rules. Also, the Business Roundtable in 2002 adopted a set of Principles of Corporate Governance that is very similar to those adopted by the exchanges. While our results suggest that this is clearly an improvement in terms of lowering the cost and decreasing the likelihood of some covenants requirements for bank credit, they also suggest that more explicit and comprehensive suggestions for boards including board member experience and diversity characteristics might lead to even further improvement.

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**Table 1**  
**Borrowing firm financial characteristics**

This table contains data for 1311 firm years of data for firms that obtained 1859 loans from commercial banks from 2003 through 2005. Firm accounting data are obtained from COMPUSTAT for the fiscal year-end prior to the lending agreement. *Market value of equity* is the fiscal year end stock price times the number of shares of common stock. *Leverage ratio* is long-term debt divided by total assets. *Quick ratio* is current assets minus inventory divided by current liabilities. *Times interest earned* is earnings before interest and taxes divided by interest expense. Standard Deviation of Stock Returns is the standard deviation of CRSP daily stock returns for each firm for year the prior to the lending agreement. The Compustat Universe excludes our sample firms.

<u>Firm Financial Characteristics</u>	<u>N</u>	<u>Sample Mean</u>	<u>Sample Median</u>	<u>Compustat Universe</u>
Total Assets (000s)	1310	7,402,760	2,441,670	146,880
Market Value of Equity (000s)	1310	8,314,330	2,489,530	97,000
Sales to Total Assets	1310	1.20	1.03	0.84
Return on Total Assets	1309	14.60%	13.49%	0.60%
Long-Term Debt to Total Assets (%)	1309	21.43%	20.57%	8.06%
Leverage Ratio (%)	1269	32.52%	30.17%	51.35%
Market to Book Ratio	1269	1.72	1.41	1.15
Tangible Assets to Total Assets (%)	1301	42.62%	40.14%	34.23%
Quick Ratio	1250	1.32	1.10	1.41
Times Interest Earned	1262	31.12	9.78	3.53
Standard Deviation of Stock Returns	1309	3.85%	3.30%	3.56%

**Table 2**  
**Bank Loan Characteristics**

This table provides information for loans originated for our sample firms from 2003 through 2005. Loan data are extracted from Dealscan. The all-in-spread drawn is the rate on the loan less the LIBOR rate in basis points. The all-in-spread undrawn is the fee for any portion of the credit facility that is not used during the life of the line of credit. The covenants are given for firms with at least one covenant listed on Dealscan. Covenants include whether there are more than two financial ratio restrictions, the firm must use the proceeds from asset sales, debt issues, and/or equity issues to satisfy this loan obligation, and whether the loan requires security. Loans without at least one non-missing covenant value are excluded from the covenant statistics to avoid including loans with missing data rather than those that genuinely do not have a particular covenant. The average number of ratio restrictions is provided for firms with ratio restrictions. *Investment Grade* is a dummy variable with a value of one if the loan is rated Baa or higher, and zero if it is rated below Baa. We obtain from Dealscan the first year a loan to the firm was made by the lead arranger from this sample (to determine the length of the bank relationship), and we count the number of loans made to the firm by the lead arranger from the first year of their relationship.

*Panel A – Loan Cost and Covenant Characteristics*

	<u>N</u>	<u>Mean</u>	<u>Median</u>
All In Spread Drawn (basis points)	1859	122.94	100.00
Covenants (for firms with at least one covenant)			
Firms >2 ratio restrictions (%)	1520	25.52	n.a.
Firms with asset sales sweep (%)	1520	28.88	n.a.
Firms with debt issue sweep (%)	1520	23.36	n.a.
Firms with equity issue sweep (%)	1520	47.76	n.a.
Firms with secured loans (%)	1520	42.50	n.a.

*Panel B – Loan Risk and Lending Relationship Characteristics*

	<u>N</u>	<u>Mean</u>	<u>Median</u>
Months to Maturity	1859	46.41	60.00
Loan Amount (000,000 dollars)	1859	554	300
Percentage with Syndicated Loans (%)	1859	95.21%	n.a.
Number of Lenders	1859	12.33	10.00
Investment Grade (of loans with ratings)	346	40.93%	n.a.
Loans Without Ratings	1859	81.39%	n.a.
Relationship with Lead Bank (Years)	1309	5.39	5
Number of Loans from Lead Bank	1308	4.46	4
Established Lending Relationship (%)	1309	92.97%	n.a.

**Table 3**  
**Borrowing Firm Board Quality and Other Governance Characteristics**

This table provides governance characteristics for 1311 firm years of data for firms that obtained 1859 loans from commercial banks from 2003 through 2005. Data are extracted from the Corporate Library and Execucomp for the year prior to the lending agreement. Board Quality includes board size, the percentage of directors with no direct ties to the firm such as employees (independent directors), the percentage of board members with more than 15 years of service, the percentage of board members with more than four other board appointments, the percentage of female board members (*Women Directors*), the percentage of directors with ownership positions, and director compensation. We measure ownership concentration as the ownership of all officers and directors, of CEOs, and of institutional investors. CEO compensation variables include non-incentive based compensation (salary and bonus), the value of options granted, total compensation including the value of options granted, and the percentage of total compensation that is not salary and bonus. Measures of shareholder protection include the Gompers, Ishii, and Metrick (2003) Index, the Bebchuk, Cohen, and Ferrell (2004) Index, and whether the firm has a staggered board.

<b><u>Board Quality</u></b>	<b><u>N</u></b>	<b><u>Mean</u></b>	<b><u>Median</u></b>
Board Size (number of directors)	1311	9.67	9.00
Independent Directors (%)	1311	70.85%	75.00%
Directors with tenures > 15 years (%)	1311	13.87%	10.00%
Directors who serve on >4 boards (%)	1311	9.90%	7.69%
Women Directors (%)	1311	11.35%	11.11%
Directors with Zero Ownership (%)	1311	13.68%	8.33%
Directors with Zero Ownership dummy	1311	53.31%	n.a.
Director Base Pay (dollars)	1311	29,978	28,250
<b><u>Other Governance Characteristics</u></b>			
Officer & Director or Inside Ownership (%)	1272	15.17%	7.00%
CEO Ownership (%)	1191	0.51%	0.00%
Institutional Ownership (%)	1276	69.85%	73.53%
CEO Salary, bonus, and other (M dollars)	1226	1,952	1,493
CEO Options Granted Value (M dollars)	1174	2,349	1,205
CEO Total Compensation (dollars)	1187	5,952	3,881
CEO Incentive Pay/Total Compensation (%)	1179	52.74%	58.52%
Gompers, Ishii, Metrick GIM Index	1207	9.67	10.00
Bebchuk, Cohen, and Ferrell BCF Index	1207	2.41	3.00
Staggered Board	1207	.6305	n.a.

**Table 4**  
**Ordinary Least Squares Regressions Results**

This table presents results relating log of all-in-spread drawn to board quality, other governance characteristics, and firm and loan characteristics. Loan data are extracted from Dealscan for firms obtaining loans from 2003-2005 that have governance data available from The Corporate Library and Execucomp for 2002. Board Quality includes board size, the percentage of directors with no direct ties to the firm such as employees (independent directors), the percentage of board members with more than 15 years of service, the percentage of board members with more than four other board appointments, the percentage of female board members (*Women Directors*), the percentage of directors with ownership positions, and director compensation. Other governance control variables include ownership by CEOs and by institutional investors, and CEO total non-option based compensation, the percentage of CEO total compensation that is options based, and the Bebchuk, Cohen, and Ferrell (2004) index as a measure of takeover vulnerability. Accounting variables are obtained from COMPUSTAT for the fiscal year-end for each firm prior to the lending agreement. All models contain year- and industry-dummies.

	<b>All-in-Drawn Spread</b>		
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Intercept	5.8691***	5.8857***	5.8732***
<b><u>Board Quality Variables</u></b>			
Board Size (log)	-0.1518**	-0.1527**	-0.1526***
Independent Directors	-0.0038***	-0.0037***	-0.0037***
Directors with tenures > 15 years	-0.0027***	-0.0028***	-0.0029***
Directors with > 4 other Boards	-0.0015	-0.0015	-0.0014
Women Directors	-0.0010	-0.0011	
Directors with Zero Ownership (%)	0.0092	0.0032	
Director Base Pay (log)	-0.0021	-0.0022	
<b><u>Other Governance Control Variables</u></b>			
Office and Director Ownership	-0.0765	-0.0712	
Institutional Ownership	0.5642***	0.5729***	0.5824***
Total Non-option Pay (log)	0.0376	0.0357	0.0338
Options Granted/Total Compensation	-0.0702	-0.0706	-0.0646
Bebchuk, Cohen, Ferrell Index	-0.0343***	-0.0347***	-0.0360***
<b><u>Control Variables</u></b>			
Market Value of Equity (log)	-0.2993***	-0.3067***	-0.3076***
Leverage Ratio	1.387***	1.3190***	1.3449***
Standard Deviation of Stock Returns	0.1879**	0.1880**	0.1704*
ROA	-1.3973***	-1.4138***	-1.4201***
Market to Book	0.0790***	0.0816***	0.0941***
Investment Grade Dummy (yes=1)	0.0170		
Line of Credit Dummy (LOC=0)	0.3042***	0.3073**	0.2989***
Years Lending Relationship (log)	-0.0024		
Loan Size (log)	-0.0093		
Maturity (log)	0.0845***	0.0838***	0.0863***
N	1467	1471	1508
F-Value	58.53***	61.93***	67.67***
Adjusted R2	0.7274	0.7293	0.7296

Statistical significance is indicated as \*\*\* for 1%, \*\* for 5%, and \* for 10%.

**Table 5**  
**Ordinary Least Squares Regression Results First Differences and Second Stage of**  
**Two-Stage Least Squares Results**

This table presents results relating change in log of all-in-spread drawn and to changes in governance and firm characteristics and loan terms. The table also presents the second stage of a two-stage least squares model where the board quality index is calculated by assigning point values to the individual board quality characteristics in previously presented models, and using an instrumental variables approach to control for the potentially endogenous relations between board quality and loan costs. Loan data are extracted from Dealscan for firms obtaining loans from 2003-2005 that have governance data available from The Corporate Library and Execucomp for 2002. Board quality includes board size, the percentage of directors with no direct ties to the firm such as employees, the percentage of the board with members with more than 4 other board appointments, the percentage of directors with more than 15 years of service, the percentage of female board members, the percentage of board members who do not own any of their firm's shares, and director base pay. Other governance variables include ownership by CEOs and by institutional investors, CEO total non-option based compensation and the percentage of CEO total compensation that is options based, and the Bebchuk, Cohen, and Ferrell (2004) index as a measure of takeover vulnerability. Accounting variables are obtained from COMPUSTAT for the fiscal year-end for each firm prior to the lending agreement. All models have Fama-French 48 industry dummies, and the second stage of the 2SLS models also include year dummies.

	<u>Change</u>	<u>Change</u>	<u>2SLS</u>
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Intercept	-0.1050	-0.0993	6.6562***
<b>Board Quality Index</b>			-0.2999**
<b><u>Board Quality Variables</u></b>			
Board Size (log)	-0.1600	-0.1844**	
Independent Directors	-0.0036**	-0.0045***	
Directors with tenures > 15 years	-0.0022	-0.0031**	
Directors with > 4 other Boards	-0.0025		
Women Directors	0.0016		
Directors with Zero Ownership (%)	0.2105	0.1867	
Director Base Pay (log)	-0.0056		
<b><u>Other Governance Control Variables</u></b>			
Office and Director Ownership	-0.1217		0.0162
Institutional Ownership	0.9822***	0.8162***	0.6639***
Total Non-option Pay (log)	0.0365		
Incentive Pay (%)	0.0231		-0.0579
Bebchuk, Cohen, Ferrell Index	-0.0425**	-0.0443***	-0.0454***
<b><u>Control Variables</u></b>			
Market Value of Equity (log)	-0.2933***	-0.2744***	-0.3111***
Leverage Ratio	1.3237***	1.3763***	1.3421***
Standard Deviation of Stock Returns	0.0638		0.2485**
ROA	-0.8081**	-0.6582**	-1.3909***
Market to Book	0.0430	0.0516*	0.0901***
Investment Grade Dummy (yes=1)	0.0535		0.0290
Line of Credit Dummy (LOC=0)	0.3053***	0.3216**	0.3263***
Years Lending Relationship (log)			-0.0002
Loan Size (log)	-0.0503	-0.0495*	-0.0052

Maturity (log)	0.0700*	0.0886**	0.0858***
N	505	604	1417
F-Value	12.99***	16.71***	35.91***
Adjusted R2	0.6072	0.6018	0.6007

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Statistical significance is indicated as \*\*\* for 1%, \*\* for 5%, and \* for 10%.

**Table 6**  
**Second stage of 2SLS Analysis of the cost (log of all-in-spread drawn) and covenant restrictions (covenant index of bank loans)**

This table presents the second stage results of a 2SLS analysis relating log of all-in-spread drawn and covenant index simultaneously to board quality, other governance characteristics, and firm and loan characteristics. Loan data are extracted from Dealscan for firms obtaining loans from 2003-2005 that have governance data available from The Corporate Library and Execucomp for 2002. Board Quality includes board size, the percentage of directors with no direct ties to the firm such as employees (independent directors), the percentage of board members with more than 15 years of service, the percentage of board members with more than four other board appointments, the percentage of female board members (*Women Directors*), the percentage of directors with ownership positions, and director compensation. Other governance control variables include ownership by CEOs and by institutional investors, and CEO total non-option based compensation, the percentage of CEO total compensation that is options based, and the Bebchuk, Cohen, and Ferrell (2004) index as a measure of takeover vulnerability. Accounting variables are obtained from COMPUSTAT for the fiscal year-end for each firm prior to the lending agreement. All models contain year- and industry-dummies.

	<b>All-in-Drawn-Spread</b>		<b>Covenant Index</b>	
	<b>2SLS</b>		<b>2SLS</b>	
	<b><u>Model 1</u></b>	<b><u>Model 2</u></b>	<b><u>Model 3</u></b>	<b><u>Model 4</u></b>
Intercept	5.5562***	5.5751***	3.6327	5.5814
All-in-Drawn Spread			-0.1374	-0.5184
Covenant Index	0.1107	0.0957		
<b><u>Board Structure</u></b>				
Board Size (log)	-0.1409**	-0.1401*	-0.1196	
Independent	-0.0039***	-0.0039***		
Directors with tenures > 15 years	-0.0027**	-0.0028***	-0.0003	
Directors with > 4 other Boards	-0.0008		-0.0071*	-0.0076*
Women Directors	-0.0001		-0.0081	-0.0103
Directors with Zero Ownership (%)	-0.0146		0.2159	
Director Base Pay (log)	-0.0014		-0.0064	
<b><u>Other Governance Control Variables</u></b>				
Office and Director Ownership	-0.0240		-0.4833	
Institutional Ownership	0.5598***	0.5687***	0.1170	
Total Non-option Pay (log)	0.0291	0.0237	0.1202	0.1250
Options Granted/Total Compensation	-0.0394	-0.0453	-0.2874	-0.2166
Bebchuck, Cohen, Ferrell Index	-0.0236	-0.0249	-0.1015*	-0.1121*
<b><u>Control Variables</u></b>				
Market Value of Equity (log)	-0.2491**	-0.2587***	-0.4849*	-0.6126
Leverage Ratio	1.2694***	1.3143***	0.8093	1.2720
Standard Deviation of Stock Returns	0.1890**	0.1708**	0.0157	
ROA	-1.2752***	-1.2791***	-1.295	-1.5219
Market to Book	0.0637	0.0927**	0.1492	0.1543
Investment Grade Dummy (yes=1)	0.0403		-0.2124	-0.2152
Line of Credit Dummy (LOC=0)	0.2163	0.2192	0.8356***	0.9525**
Years Lending Relationship (log)	0.0057		-0.0734***	-0.0816***
Loan Size (log)	-0.0394	-0.0307	0.2712**	0.2565***
Maturity (log)	0.0723**	0.0753**	0.1212	0.1819

N	1467	1508	1467	1510
F-Value	63.78***	75.12***	18.29***	21.71***
Adjusted R2	0.7679	0.7676	0.4445	0.3812

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Statistical significance is indicated as \*\*\* for 1%, \*\* for 5%, and \* for 10%.

**Table 7**  
**Logit Model Results for Ratio Restriction Covenants**

This table presents results of logit models relating whether firms have two or more ratio covenant restrictions to governance and firm characteristics and loan terms. Loan data are extracted from Dealscan for firms obtaining loans from 2003-2005 that have governance data available from The Corporate Library and Execucomp for 2002. Board Quality includes board size, the percentage of directors with no direct ties to the firm such as employees (independent directors), the percentage of board members with more than 15 years of service, the percentage of board members with more than four other board appointments, the percentage of female board members (*Women Directors*), the percentage of directors with ownership positions, and director compensation. Other governance control variables include ownership by CEOs and by institutional investors, and CEO total non-option based compensation, the percentage of CEO total compensation that is options based, and the Bebchuk, Cohen, and Ferrell (2004) index as a measure of takeover vulnerability. Accounting variables are obtained from COMPUSTAT for the fiscal year-end for each firm prior to the lending agreement. All models contain year- and industry-dummies.

	<b>Ratio Restriction (&gt;2 ratios)</b>		
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Intercept	-1.5749	-2.0916	-2.6665
<b><u>Board Quality Variables</u></b>			
Board Size (log)	-0.9758***	-0.9053**	-0.7791**
Independent Directors	-0.0121**	-0.0125**	-0.0104**
Directors with tenures > 15 years	0.0575*	0.0102*	
Directors with > 4 other Boards	-0.0246***	-0.0236***	-0.0178**
Women Directors	-0.0575***	-0.0570***	-0.0607***
Directors with Zero Ownership (%)	0.2537	0.2369	
Director Base Pay (log)	-0.0259	-0.0210	-0.0001***
<b><u>Other Governance Control Variables</u></b>			
Office and Director Ownership	0.6755	0.6449	1.0795*
Institutional Ownership	0.9595	0.8225	
Total Non-option Pay (log)	0.1368	0.2071	0.2712*
Options Granted/Total Compensation	-0.0403	0.0007	
Bebchuk, Cohen, Ferrell Index	0.0978	0.0895	
<b><u>Control Variables</u></b>			
Market Value of Equity (log)	-0.2951**	-0.2717**	-0.1795*
Leverage Ratio	0.7190		
Standard Deviation of Stock Returns	1.1269**	1.2614**	0.9220**
ROA	5.1936***	5.0993***	4.0675***
Market to Book	-0.3204*	-0.4168**	-0.4927***
Investment Grade Dummy (yes=1)	-0.7157*	-0.7065*	-0.7925*
Line of Credit Dummy (LOC=0)	0.5853***	0.5396**	0.4412**
Years Lending Relationship (log)	0.0028		
Loan Size (log)	0.0929		
Maturity (log)	0.5121***	0.5679***	0.5553***
N	1195	1199	1324

Statistical significance is indicated as \*\*\* for 1%, \*\* for 5%, and \* for 10%.

**Table 8**  
**Logit Model Results for Sweep Covenants**

This table presents results of logit models relating whether loans have sweep covenants to governance and firm characteristics and loan terms. Loan data are extracted from Dealscan for firms obtaining loans from 2003-2005 that have governance data available from The Corporate Library and Execucomp for 2002. Board Quality includes board size, the percentage of directors with no direct ties to the firm such as employees (independent directors), the percentage of board members with more than 15 years of service, the percentage of board members with more than four other board appointments, the percentage of female board members (*Women Directors*), the percentage of directors with ownership positions, and director compensation. Other governance control variables include ownership by CEOs and by institutional investors, and CEO total non-option based compensation, the percentage of CEO total compensation that is options based, and the Bebchuk, Cohen, and Ferrell (2004) index as a measure of takeover vulnerability. Accounting variables are obtained from COMPUSTAT for the fiscal year-end for each firm prior to the lending agreement. All models contain year- and industry-dummies.

	<b>Asset Sales, Debt Issue, or Equity Issue Sweeps</b>		
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Intercept	29.029	28.7210	29.0225
<b><u>Board Quality Variables</u></b>			
Board Size (log)	-0.1232	-0.1480	
Independent Directors	0.0046	0.0048	
Directors with tenures > 15 years	0.0047	0.0047	
Directors with > 4 other Boards	-0.0135	-0.0131	-0.0087
Women Directors	0.0000	0.0016	
Directors with Zero Ownership (%)	0.23396	0.2646	
Director Base Pay (log)	0.0103	0.0098	
<b><u>Other Governance Control Variables</u></b>			
Office and Director Ownership	-1.3301	-1.3901	
Institutional Ownership	0.4021	0.2932	0.6976
Total Non-option Pay (log)	0.0966	0.0768	
Options Granted/Total Compensation	-0.5417	-0.5638	
Bebchuk, Cohen, Ferrell Index	-0.1934*	-0.1873*	-0.2027**
<b><u>Control Variables</u></b>			
Market Value of Equity (log)	-0.8289***	-0.7740***	-0.7256***
Leverage Ratio	2.2543**	2.3245***	1.7360**
Standard Deviation of Stock Returns	-0.8417		
ROA	-1.8663		
Market to Book	0.1370		
Investment Grade Dummy (yes=1)	-0.0481		
Line of Credit Dummy (LOC=0)	1.8449***	1.8623***	1.8450***
Years Lending Relationship (log)	-0.3896***	-0.4058***	-0.3837***
Loan Size (log)	0.4988***	0.4721***	0.3297**
Maturity (log)	-0.6469***	-0.6492***	-0.4238**
N	1195	1197	1347

Statistical significance is indicated as \*\*\* for 1%, \*\* for 5%, and \* for 10%.

**Table 9**  
**Logit Model Results for Collateral Requirements**

This table presents results relating collateral requirements to governance and firm characteristics and loan terms. Loan data are extracted from Dealscan for firms obtaining loans from 2003-2005 that have governance data available from The Corporate Library and Execucomp for 2002. Board Quality includes board size, the percentage of directors with no direct ties to the firm such as employees (independent directors), the percentage of board members with more than 15 years of service, the percentage of board members with more than four other board appointments, the percentage of female board members (*Women Directors*), the percentage of directors with ownership positions, and director compensation. Other governance control variables include ownership by CEOs and by institutional investors, and CEO total non-option based compensation, the percentage of CEO total compensation that is options based, and the Bebchuk, Cohen, and Ferrell (2004) index as a measure of takeover vulnerability. Accounting variables are obtained from COMPUSTAT for the fiscal year-end for each firm prior to the lending agreement. All models contain year- and industry-dummies.

	<b>Security Requirement</b>		
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Intercept	-5.4265**	-4.2573*	-4.7540**
<b><u>Board Quality Variables</u></b>			
Board Size (log)	-0.1587	-0.3314	
Independent Directors	0.0004	0.0011	
Directors with tenures > 15 years	-0.0089	-0.0096*	-0.0102**
Directors with > 4 other Boards	-0.0061	-0.0050	
Women Directors	-0.0482***	-0.0483***	-0.0484***
Directors with Zero Ownership (%)	0.2854	0.3521	
Director Base Pay (log)	-0.0219	0.0229	
<b><u>Ownership</u></b>			
Office and Director Ownership	0.2709	0.3155	
Institutional Ownership	1.1757*	1.0246*	0.7470
Total Non-option Pay (log)	0.5381***	0.5093***	0.5009***
Options Granted/Total Compensation	-0.3254	-0.2928	
Bebchuk, Cohen, Ferrell Index	-0.1377*	-0.1460*	-0.1537**
<b><u>Control Variables</u></b>			
Market Value of Equity (log)	-0.8338***	-0.8453***	-0.8708***
Leverage Ratio	3.1832***	2.6424***	2.2182***
Standard Deviation of Stock Returns	0.4053		
ROA	-6.6103***	-5.3274***	-5.6673***
Market to Book	-0.2729		
Investment Grade Dummy (yes=1)	-0.6686*	-0.6998**	-0.7736**
Line of Credit Dummy (LOC=0)	0.9678***	0.9993***	1.0667***
Years Lending Relationship (log)	-0.0958***	-0.0951***	-0.1033***
Loan Size (log)	-0.0834		
Maturity (log)	0.8603***	0.8318***	0.9181***
N	1195	1195	1282
Statistical significance is indicated as *** for 1%, ** for 5%, and * for 10%			