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The Presence of Commercial Bank Executives on the Boards of Directors of Non-financial Companies:
Effects on Firm Financing Decisions, Investment Decisions and Performance

by

Elif Şişli Ciamarra

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
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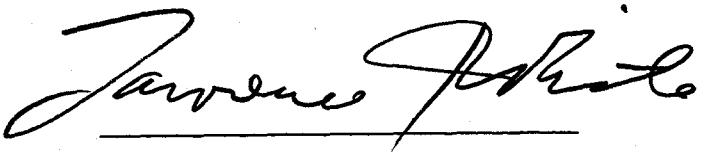

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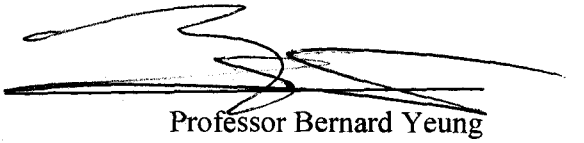

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Dedication

To

my parents, Şükran and İbrahim Şişli, who seeded the love of learning and teaching in me,

my sister, Aslı Şişli, who reminds me that I can and should laugh at hard times,

my husband, Robert Ciamarra for his love and support, and

my daughter, Ada Josephine Ciamarra for hope.

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ABSTRACT

Notwithstanding the tradition of the separation of banking and commerce, bank executives occupy a significant portion of the seats on the boards of directors of non-financial companies in the U.S. In 2002, 27.48 percent of the companies that were in the S&P500 Index had an executive from a commercial bank serving on their boards. Around 60 percent of these directors' banks were, at the same time, extending loans to the companies in which they served as a director. This study addresses the impact of banker-directors on the financial outcomes of the companies utilizing a hand-collected a dataset on the boards of directors of the companies that constitute the S&P 500 Index for the period 2002-2004. In Chapter 2, I study the effect of banker-directors on firm financing decisions and outcomes. I show that the presence of a banker-director on a company's board is associated with an increase in private debt finance, a lower cost of private borrowing, and a decrease in the restrictive covenants included in private debt contracts. In Chapter 3, I study the effects of banker-directors on the acquisition decisions and show that shareholder reaction to acquisitions is positive when there is a bank executive serving on an acquirer's board of directors. Finally, in Chapter 4, I examine whether improved access to finance and better acquisition outcomes are reflected in the firm performance metrics when a banker is present on a board, and establish a positive relationship between firm performance (return on assets, and stock market returns) and banker presence on a board. In contrast to these favorable outcomes, the banker presence on a company's board of directors is associated with lower market-to-book ratios, and this result remains as a puzzle in this research and is left for investigation in future research.

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CHAPTER 1

Introduction

Notwithstanding the tradition of the separation of banking and commerce, bank executives occupy a significant portion of the seats on the boards of directors of non-financial companies in the U.S. To give some numbers, in 2002, 27.48 percent of the companies that were in the S&P500 Index had an executive from a commercial bank serving on their boards (henceforth banker-directors). Around 60 percent of these directors' banks were, at the same time, extending loans to the companies in which they served as a director.

The effect of these banker-directors on firm financial outcomes is not obvious. On the one hand, a banker executive serving on a board of a company would have an incentive and ability to monitor the operations of that company, and consequently enhance the company's access to capital, lower its cost of capital, screen for good investments and as a result contribute to its performance. On the other hand, the recent literature on banking relationships warns about some unfavorable consequences of close firm-bank relationships. There is some evidence that a bank may build an information monopoly about a firm over the course of the relationship, and thus gain a bargaining advantage over its profits and increase its cost of capital. Furthermore, a board seat may intensify the conflicts of interests between the shareholders and the creditors, resulting in sub-optimal investment decisions from the shareholders' perspective. Both information monopolies and sub-optimal investment decisions may lead to deterioration in a company's performance.

This study addresses the impact of banker-directors on the financial outcomes of the companies utilizing a hand-collected a dataset on the boards of directors of the companies that constitute the S&P 500 Index for the period 2002-2004. In Chapter 2, I study the effect of banker-directors on firm financing decisions and outcomes. I show that the presence of a banker-director on a company's board is associated with an increase in private debt finance, a lower cost of private borrowing, and a decrease in the restrictive covenants included in private debt contracts. In Chapter 3, I study the effects of banker-directors on the acquisition decisions and show that shareholder reaction to acquisitions is positive when there is a bank executive serving on an acquirer's board of directors. Finally, in Chapter 4, I examine whether improved access to finance and better acquisition outcomes are reflected in the firm performance metrics when a banker is present on a board, and establish a positive relationship between firm performance (return on assets, and stock market returns) and banker presence on a board. In contrast to these favorable outcomes, the banker presence on a company's board of directors is associated with lower market-to-book ratios, and this result remains as a puzzle in this research and is left for investigation in future research.

CHAPTER 2

The Effects of the Presence of Commercial Bank Executives on Corporate Boards on Firm Financing Outcomes

Summary: This chapter investigates whether bank representation on corporate boards facilitates debt finance and improves the terms of the private debt contracts. The findings show that the presence of an executive from a bank that has an outstanding lending relationship with the company (i) increases the amount of debt in a company's capital structure via an increase in private debt, (ii) decreases the sensitivity of debt finance to the amount of tangible assets that a company holds, (iii) decreases the cost of borrowing, and (iv) reduces the covenants included in debt contracts.

1. Introduction

Motivated by the prevalence of bank representation on corporate boards, this chapter investigates the consequences of such relationships on debt finance, especially when there is an existing lending relationship between the bank and the company. More specifically, it studies the impact of bank monitoring through a presence on the board of directors on the amount of debt in a company's capital structure, as well as on the price and non-price terms of debt contracts, controlling for the endogeneity between the banker presence on boards and the observed capital structures.

I derive my hypotheses about the effects of affiliated banker-directors from the literature on relationship banking, which studies the consequences of the provision of financial services by a bank that invests in obtaining proprietary information about the borrowing companies (Boot, 2000). The relationship banking literature emphasizes that banks act as "delegated monitors" (Diamond, 1984), thereby mitigating asymmetric information problems, since borrowers reveal information to the banks that is not available to the financial markets (Bhattacharya and Chiesa, 1995).[1] This study posits that if a bank holds a seat on the board of directors of a company, there should be an increase in the scope of the

[1] For empirical evidence on the increase in availability of credit during the course of the bank-firm relationship, see Petersen and Rajan (1994) and Berger and Udell (1995); for evidence on the decrease in the cost of funds, see Fama (1985) and Berger and Udell (1995); and for the certification role played by banks, see Slovin et al. (1988).

banking relationship, and the consequences of such relationships would be strengthened. The amount of proprietary information that the bank has about the company would increase, monitoring would become more effective, and the cost of information collection by the bank would decrease. As a result of more effective monitoring, a company may be able to raise more debt finance at more favorable terms.

Using a hand-collected dataset on boards of directors of large U.S. non-financial companies, I present evidence about the effects of the presence of an executive from a bank that has an outstanding lending relationship with the company – an "affiliated" banker-director. I find that the presence of an affiliated banker-director (i) increases the amount of debt in a company's capital structure via an increase in private debt, (ii) decreases the sensitivity of debt finance to the amount of tangible assets that a company holds, (iii) decreases the cost of borrowing, and (iv) reduces the pledge of collateral and financial covenants in debt contracts.

I argue that the observed increase in debt finance is a result of better monitoring of the company by the bank. Consistent with the monitoring hypothesis, I show that the presence of an affiliated banker on a board reduces the sensitivity of the debt ratio of a company to the amount of tangible assets that can be pledged as collateral. I reinforce this finding by studying directly the inclusion

of collateral and financial covenants in individual loan contracts. The findings from loan-level analyses demonstrate explicitly that there is less pledge of collateral and financial covenants in loan contracts when the bank represented on the board of directors of a borrower is among the lead managers in a lending syndicate. In addition, the use of collateral and covenants decreases even further as the tenure of a lender on a board gets longer.

The chapter also shows for the first time in the literature that the presence of an affiliated banker on a company's board of directors reduces the cost of borrowing for that company. The observed decrease in borrowing costs is also in line with the monitoring hypothesis. An improvement in monitoring effectiveness would alleviate the information problems between the borrower and the lender and decrease the cost of information collection, which would in turn be reflected in lower loan prices.

To strengthen the evidence for the monitoring role of affiliated bankers on company boards, I exploit differences in the timing of when a banker obtains a board seat. I show that the positive effects of bankers on debt finance are observed only if the lending relationship between a bank and a company is initiated after the bank executive obtains a seat on the board of directors. For the majority of affiliated banker-directors, the lending relationship between the bank and the company is formed after the bank is granted a board seat. Once a banker joins a

board, the bank begins lending to the company at better terms, as its cost of monitoring decreases. The decrease in information asymmetry results in less use of collateral and covenants, and the decrease in the cost of monitoring translates into lower loan prices. On the contrary, if a bank obtains a board representation after it has already extended loans to a company, we do not see any favorable changes in debt ratios and loan contract terms. This result is in line with Gilson (1990), who shows that creditors join company boards at times of financial distress.

Throughout the chapter, I contrast the results for affiliated banker-directors with the results for unaffiliated banker-directors in order to show that the monitoring role is specific to the affiliated bankers. While both affiliated and unaffiliated bankers would fulfill an expertise function on boards, the monitoring function would be performed primarily by affiliated banker-directors, because they would have the greater incentives to monitor the company to protect the value of their debt claims. Consistent with the prior literature, I find that unaffiliated bankers contribute positively to the amount of debt finance in a company's capital structure. However, the findings that support the monitoring hypothesis only pertain to affiliated banker-directors: Unlike the presence of an affiliated banker, the presence of an unaffiliated banker is not associated with any decrease in dependence on collateral and financial covenants or in a reduced cost of borrowing.

The findings in this study contribute to the extant literature on banker-directors in a number of ways: Most importantly, evidence for affiliated banker-directors performing a monitoring function on boards of directors and reducing information asymmetry problems has not been presented previously. Booth and Deli (1999), Kroszner and Strahan (2001), and Byrd and Mizruchi (2005) demonstrate that unaffiliated banker-directors provide expertise to management, as evidenced by a positive correlation between the presence of these bankers and observed debt ratios. However, these studies do not find any evidence for the roles played by affiliated bankers on corporate boards, possibly because they did not account for the endogeneity between the banker presence and the capital structure. I show that the presence of a banker-director on a company's board of directors and the observed debt ratios are in fact endogenous outcomes; once we control for the differences between companies that select to include a banker on their boards and companies that do not, the impact of an affiliated banker-director on a company's debt ratio is positive.

I also provide evidence that an affiliated banker-director is associated with more favorable price and non-price terms in individual loan contracts. Guner et al. (2006) show that loan size increases significantly when a company includes an affiliated banker on its board,[2] but they do not find any evidence for an effect of

[2] Guner et al. (2006) use absolute dollar values when they analyze the effect of banker-directors on loan sizes. The probability of banker-director presence on a company's board increases with the

bankers on loan prices. The differences in results may be attributed to differences in study samples. Guner et al. examine manufacturing companies that have significant tangible assets and therefore may have less severe impediments to raising debt finance compared to some companies in my study sample from other industries.

An advantage of my research strategy arises from my controls for the endogeneity between a banker's presence on board of directors and the observed capital structure. Previous research on banker-directors suggests that the companies that have bankers on their boards are not a random sample. The probability of having a banker on board is a function of firm size, the extent of information asymmetry between the firm and the financing community, debt levels, and board size (Kroszner and Strahan, 2001). Building an average treatment effects model (Angrist, 2006), I explicitly model a company's decision to include a bank representative on its board of directors, and then estimate the effects of banker-directors on capital structure outcomes conditional on the selection of bankers to the company boards.

This chapter proceeds as follows: Section 2 discusses the hypotheses tested in the paper. Section 3 summarized the literature on banker-directors and debt finance. Section 4 describes the data and presents the summary statistics. Section

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firm's size (Kroszner and Strahan, 2001), so the positive association between loan size and banker-director presence may simply be due to the size effect (see Table 6).

5 explores the link between banker-director presence and debt finance using firm-level data. Section 6 studies the relation between banker-director presence and terms of loan contracts using loan-level data. Section 7 concludes.

2. Hypotheses

Fama and Jensen (1983) summarize the functions of the board of directors as decision management and decision control functions. A bank executive serving on a board of directors would be equipped to fulfill both functions – provide expertise to the management about the debt markets (decision management) and monitor the lending relationships between the bank and the company (decision control). A company that has a notable amount of debt may invite a banker on to its board in order to be able to manage that debt more efficiently. A company that has a lower level of debt than it desires may also find it beneficial to include a banker on its board as a bonding strategy and then try to raise debt with the banker's help. Once a bank executive obtains a seat in the boardroom, the information that the bank has about the company's financial standing would be greater and more accurate, and the monitoring of the lending relationship would be more effective, resulting in an increase in access to debt finance.

Hypothesis 1: (Expertise and Monitoring) The presence of bank executives on boards of directors leads to an increase in debt finance due to the provision of expertise about debt markets and more effective monitoring of the outstanding debt.

Compared to an unaffiliated banker, an affiliated banker-director may provide further benefits in terms of decreasing the price and non-price terms of debt contracts by increasing the scope of the relationship between the bank and the borrowing company. Myers and Majluf (1984), Fama (1985), and Berger and Udell (1995) show that the cost of borrowing decreases as an outcome of a strong relationship between a lender and a borrower. Giving a board membership to a banker would strengthen the relationship between a firm and that bank and may further help the firm obtain cheaper credit with less stringent covenants in the debt contract. Further, board composition may evolve as a means of reducing contracting costs via more effective monitoring. A firm may offer a banker a seat on its board and subject itself to a more stringent bank monitoring in order to reduce the information asymmetry problems, and as a result gain access to cheaper finance. Thus the following two hypotheses:

Hypothesis 2: (Monitoring) The presence of a lender (affiliated banker) on a company's board of directors is associated with a lower sensitivity of debt finance to the amount of tangible assets that the company has, and with a decrease in the inclusion of covenants in loan contracts.

Hypothesis 3: (Monitoring) The presence of a lender on a company's board of directors decreases that company's cost of borrowing.

It is also possible to build alternative hypotheses. As Kroszner and Strahan (2001) suggest, conflicts of interest between shareholders and creditors and the U.S. legal doctrines that generate lender liability for bankers on boards may deter bankers from accepting positions on boards of companies with high information

problems. Instead, bankers would be inclined to join boards of more stable companies. In the absence of information problems, we would not witness a significant relationship between banker-director presence and availability of debt finance.

Also, a strand of the literature on relationship banking emphasizes the costs of strong relationships for the borrowing companies. The main argument is that as the relationship bank becomes more informed about the company compared to the other potential lenders, it might exploit its informational advantage, build bargaining power over the borrowing firm's profits, and demand higher interest rates and fees (Sharpe, 1990; Rajan, 1992). Studies on Japanese banking relationships find some evidence that the cost of capital for firms with close bank ties is higher (Weinstein and Yafeh, 1998). Accordingly, a firm-bank relationship that is strengthened by the banker's directorship may further increase the bargaining advantage of the bank and result in higher borrowing costs.

3. Review of the Literature on Banker Presence on Boards of Directors and Debt Finance

There is a small, but growing literature on the presence of bankers on company boards and their association with the availability of debt finance and cost of debt.

Ramirez (1995) shows that the presence of bankers on corporate boards reduced the sensitivity of investment to cash flow in the pre-Glass-Steagal era, and

provides the first evidence that banker-directors may help raise capital. Booth and Deli (1999) and Kroszner and Strahan (2001) study the firm characteristics that affect the probability of having a banker on the board of directors, and the results from these studies provide some evidence for an association between a banker's presence on a board and the firm's capital structure. Booth and Deli (1999), using a sample of firms that were included in the S&P 500 Index in 1992, show that firms with banker-directors have more debt financing compared to firms without banker-directors, but only if those directors come from banks that have no lending relationship with the company (i.e., unaffiliated banker-directors). They find, however, no significant relation between the presence of an affiliated banker-director and debt ratios. Similarly, Kroszner and Strahan (2001) also find no significant relation between debt ratios and affiliated banker-director presence for a sample of Forbes companies in 1992. Booth and Deli (1999) conclude that bank executives are invited to join the boards to provide expertise, but not to monitor. From a different perspective, Kroszner and Strahan (2001) argue that bank executives refrain from joining boards of companies that borrow from their banks in order to avoid potential conflicts of interests that might arise between banks and shareholders of the company. They suggest that bank executives may assume positions on company boards to gain knowledge about the company's industry, showing that those banks have substantial loans outstanding to other firms in those industries.

The only study that tests the effects of a banker's presence on a firm's capital structure is Byrd and Mizruchi (2005). With a sample of the largest 500 firms in 1980 and in a simultaneous equations framework, they find that the presence of a lender (affiliated banker-director) leads to a decrease in the amount of debt in a company's capital structure. Notwithstanding this finding, Guner et al. (2006) show that a company that includes an affiliated banker on its board is able to raise larger loans.

To summarize, the extant literature remains inconclusive about the relation between the presence of banker-directors and the availability of debt finance and cost of debt. This study adds to the literature by (i) following an econometric methodology that takes into account the endogeneity between the presence of a banker on a board and the observed capital structure; (ii) performing direct tests for the hypothesis that the affiliated bankers perform a monitoring function on boards of directors; and (iii) showing that the presence of the affiliated bankers on corporate boards is associated with a decrease in the utilization of covenants in loan contracts and lower loan prices.

4. Data and Summary Statistics

Data

Companies included in the Standard and Poor's (S&P) Index in 2002 form the sample for this study. Since the main objective is to investigate whether bank executives perform a monitoring duty when they obtain a directorship on the board of a non-financial company, I exclude financial companies from the sample, leaving 403 companies.[3] I follow the board and financial characteristics of these companies between 2002 and 2004. The final sample size is thus 1209 firm-years.

I hand-collect information on individual director characteristics for companies included in the sample, using company annual reports and proxy statements filed with the Securities and Exchange Commission prior to the annual shareholder meetings. Annual reports list the names of members of the board for a given year, and proxy statements contain the biographies of board members.[4] From the director biographies, I identify whether the primary employer of a director is a commercial bank ("banker-directors"). For a financial institution to be categorized as a commercial bank, I require that it is included in the Federal Deposit Insurance Company list of U.S. chartered commercial banks. Proxy

[3] During the sample period, AT&T Wireless was acquired by Cingular, Gillette merged with P&G, and Sears merged with K-Mart. I excluded AT&T Wireless, Gillette, and K-Mart from the sample.
[4] By regulation public companies have to disclose the employment histories of their board members and nominees for the previous five years. In general, companies release the employment histories of their directors for a much longer time, starting from their initial employments.

statements provide detailed information on the employment histories of directors, enabling me to identify the years that the director was employed at the bank. Among other key information I obtain on the structure of boards are the number of board members, the number of insiders,[5] and the tenures of the board members. These are the standard control variables that are included in many empirical studies of boards of directors.

To categorize banker-directors into "affiliated" and "unaffiliated," I need information on creditors of the companies in the sample. I utilize the Reuters/Loan Pricing Corporation (LPC) Dealscan database to obtain information on loans initiated over the last two decades. The database is the most comprehensive and up-to-date source for bank loan market data,[6] and contains detailed information for 139,000 stand-alone and syndicated loans and high-yield bonds dating back to 1988, and selected coverage back to 1981. The database records the name of the borrower; the names of all banks that were included in the lending syndicate at the time of the loan origination; the loan contract date; the amount, maturity, type, and purpose of the loan; and information on the price and non-price terms of the loan contract.

An affiliated banker-director is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole

[5] Company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders

[6] See Carey, Post, and Sharpe (1998) for more detailed description of the Dealscan database.

lender, or as a lead arranger in a syndicate. I require the affiliated banker-director to be employed at one of the lead banks in the syndicate, because the ex-ante due diligence and the ex-post monitoring of a loan is delegated to the lead bank within a syndicate. If there is no lending relationship over the previous five years between a company and a bank where the director is employed, the director is classified as an unaffiliated banker-director. The database updates its records to account for bank mergers, so that banker-directors are matched correctly with banks that their parent firms acquire. I also cross-check the bank merger dates to eliminate any mis-recordings.

I further categorize the affiliated banker-directors depending on when the lending relationship between the bank and the company originated. If the first loan recorded in Dealscan occurs after the banker-director joined the board, I classify her as "banker first gets board membership, then gives a loan." If the initial loan is recorded before the banker joins the board, then the affiliated banker-director is classified as "banker first gives a loan, then gets board membership." This classification based on the timing of events is intended to test the monitoring hypothesis.[7]

I follow two different empirical approaches in the paper. In the first approach, I use firm-level data to analyze the association between the amount of

[7] There might be instances when a banker joins a board during loan negotiation, which may take up to 6 months, leading to misclassification of directors. To minimize this concern, I perform robustness checks excluding the initial year that a banker joins the board of directors.

debt finance -- as summarized by the fraction of debt in a company's capital structure -- and banker-director presence. I supplement the data on boards of directors with data on the capital structure of the companies in my sample, as well as the determinants of capital structure. The core financial variables are calculated from Compustat, CRSP, Dealscan, and SDC.

In the second empirical approach, I employ loan-level data and investigate directly whether the presence of a banker-director has any significant effects on the specific terms of loan contracts. To construct the dataset employed in the loan-level analysis, I rely on the Dealscan database described above and search for loans that were originated between 2002 and 2004 by sample companies. The main variables extracted from Dealscan are the loan origination date, the type of the loan, loan size, loan maturity date, and the price and non-price characteristics of the loan such as the presence of collateral and financial covenants. Because I include firm leverage as an endogenous variable when studying the loan contract terms, I merge the loan-level data with firm-level capital structure data from Compustat.

Summary statistics

Table 1, Panel A summarizes the percentage of companies with at least one bank executive serving on their board of directors, as well as other board characteristics by year. In 2002, 27.23 percent of the companies included in the sample had at least one director who is an employee of a commercial bank; 18.32 percent had at

least one director from an unaffiliated bank; and 11.63 percent had a director from an affiliated bank.[8] For the majority of the affiliated-banker directors (70 percent), the lending relationship was initiated after the banker joined the board; in other words, there was no existing relationship between the bank and the company at the time the banker joined the board. By the end of 2004, the percentage of companies that had a banker-director dropped to 22.03 percent. The percentage of firms with unaffiliated banker-directors dropped to 14.60 percent, and the percentage of firms with affiliated banker-directors dropped to 8.91 percent.

Table 1, Panel B gives the distribution of banker-directors according to the tenures of banker-directors by year. Most of the banker-directors have served on the board of directors for one to five years. From the table, we could also infer the additions of bankers to boards during 2002-2004 (Tenure<1). In 2002, 14 companies hired a new banker-director: nine were from an unaffiliated bank, and five were from an affiliated bank. In 2004, only two companies added a banker on their boards, and both banker-directors remained unaffiliated by the end of 2004.

The decline in the number of banker-directors can be attributed to the changes in the regulatory environment shaping the composition of boards of directors following the corporate scandals of the current decade.[9] The new regulations

[8] The percentages of companies with affiliated and unaffiliated banker-directors do not add up to the percentage with banker-directors, because some companies have both unaffiliated and affiliated banker-directors on their boards.
[9] Sarbanes Oxley Act (2002), NYSE Regulations, NASDAQ Regulations.

dictate the elimination of inside directors from certain board committees and strongly discourage the presence of affiliated directors. A recent example is the departure of Citigroup executive Robert E. Rubin from the board of directors of Ford Motor Corporation. He stated in his resignation letter that "Citigroup's multifaceted relations with Ford could raise a question whether my relationship with Ford and Citigroup creates an appearance of conflict."

Table 2 gives summary statistics for the main financial variables that are used in the paper. The average firm in the sample has assets of $18,021 million and net sales of $13,197 million. The average debt ratio is 0.25 when leverage is calculated using book values of equity and 0.23 when it is calculated using market values. Most of the debt is long-term (90 percent). The average firm has a tangible assets (net value of plant, property, and equipment) to total assets ratio equal to 0.31, and the research and development expenses to net sales ratio equals 0.05. Finally, the market-to-book ratio for the average firm is 1.75.

Table 2 also gives the comparison of means tests for the financial variables by banker presence on the board of directors. The variables that summarize the use of debt finance by a firm are statistically higher for firms with banker-directors. The average firm with a banker on its board has total debt amounting to $9,230 million, while the average firm without a banker on its board has total debt of $4,600 million. The total debt-to-market value ratio for the banker-director sample

is 27 percent, compared to 21 percent for the no banker-director sample. The difference persists if the debt ratio is calculated using total assets (27 percent versus 24 percent). All differences are statistically significant at the 1 percent level.

5. Banker-Directors and Firm Capital Structure

5.1 Presence of a banker on a board of directors and the availability of debt

The first research question in this chapter is whether the presence of a bank executive on a board of directors influences the firm towards more debt finance as the expertise and monitoring hypothesis would predict. The main equation of interest is the leverage equation, and it is specified as

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \varepsilon_{it}, \qquad (1)$$

where Y_i is the debt ratio of firm i, X_i is the set of exogenous variables that influence a firm's decision to issue debt, and D_i is a dummy variable indicating the presence of a bank executive on the company's board.

Rajan and Zingales (1995) narrow the list of conventional determinants to four main variables: Profits, size, tangibility of assets, and the market-to-book ratio. In addition to these variables, I also control for the specificity of assets. Year and industry indicator variables based on 48 Fama-French industries are also included in the leverage specification, and all estimations are clustered at the firm level.

The logarithm of net sales is used as a proxy for company size.[10] It has been argued that debt finance is a more attractive option for larger companies because they have a lower probability of experiencing bankruptcy (Titman and Wessels, 1998), the amount of information that a lender has increases with the firm's size (Fama, 1985), and they have less unobservable credit risk (Carey et al., 1993). On the other hand, Houston and James (1995) report that firms become less dependent on banks for credit as they grow.

The market-to-book ratio is included as a measure of the firm's investment opportunities and the quality of the firm's projects. One explanation for the market-to-book ratio's being a legitimate proxy for a firm's investment opportunities is that the capital markets would value the company more if the company has a stream of higher quality projects, and the market-to-book ratio would increase. Another explanation is offered by Johnson (1997), who argues that such firms with high market-to-book ratios will have lower liquidation values. Yet, an alternative explanation for a negative relationship is market timing. Firms with a high market-to-book ratio may be overvalued and hence issue equity to take advantage of it (Baker and Wurgler, 2001). In summary, the expected sign of the market-to-book ratio in the leverage equation is negative.

[10] Results are robust to using the logarithm of total assets as a proxy for firm size. Total sales is a preferred size measure for leverage equations, because when the debt ratio is calculated using book values, total assets appear in the denominator.

The next control variable is the ratio of tangible assets to total assets, which proxies for the amount of assets that can be used as collateral. Higher collateral values would make debt arrangements more attractive as it would decrease the risk of lending to the firm.

The traditional tradeoff theory of leverage predicts that more profitable firms would finance their investments with more debt since they would have a smaller risk of bankruptcy and would have more taxable income to shield (Fama and French, 2002). However, empirical studies of leverage regularly find that profitability and debt ratios are correlated negatively. To control for company profitability, I use the ratio of earnings before interest, depreciation, and amortization (Ebitda) to total assets.

The last control variable is a measure of asset specificity and is proxied by the ratio of research and development expenses to total sales. The rationale is that greater specificity of assets increases the agency costs of debt (Berger et al., 1997).

5.2 Endogeneity issues and the average treatment effects model

The potential endogeneity between the board structure and financial outcomes is a concern in corporate governance studies (Hermalin and Weisbach, 1998, 2003), as governance is both a cause and an outcome of a firm's contractual relationships. The presence of banker-directors and the corporate capital structure as summarized

by leverage ratios are possibly endogenous outcomes, as well. In the presence of endogeneity, the OLS estimations of equation (1) would be inconsistent, because D_i would be correlated with the error term e_i, resulting in biased estimators for β_2, and also for the other coefficients (Greene, 2003).

The instrumental variables estimation is the most widely used estimation technique for empirical studies affected by the endogeneity problem. However, there is a further issue in the validity of instrumental variables estimation when one of the endogenous regressors is a dummy variable (Angrist, 1995, 2001). To avoid the concerns associated with the dummy endogenous variables, I build a treatment effects model that is developed specifically to analyze the dummy endogenous variables (Heckman, 1976, 1978). Treatment effect models have been utilized extensively in program evaluation, especially in labor economics, health economics, and education economics.[11] The standard problem in treatment evaluation involves the inference of a causal connection between the treatment and outcome. In this paper, the "treatment" is the utilization of a bank executive's service on the board of directors.

Let Y_1 denote the outcome with treatment and Y_0 the outcome without treatment. We are interested in estimating $(Y_1 - Y_0)$: the difference in the outcomes when the treatment was present and not present. In other words, we

[11] Angrist (2006) gives a good review of the average treatment effects methodology.

observe (Y_i, X_i, and D_i) for i=1,2,..., N, and we are interested in quantifying the impact of a hypothetical change in D on Y, holding X constant.

Rosenbaum and Rubin (1984) suggested estimating the average treatment effect (ATE), which is the expected effect of treatment on a randomly chosen agent from the population:

$$ATE = E(Y_1 - Y_0) . \quad (2)$$

ATE has become the most common statistic estimated to evaluate the gains from treatment. It is also possible to condition the ATE on observed covariates. If X is the set of variables that we believe would affect the decision to receive treatment, then ATE conditional on X would be:

$$ATE|\ X = E(Y_1-Y_0|X) . \quad (3)$$

The main difficulty in estimating the ATE|X is that a firm cannot be in both states at a given time, so we observe only Y_0 or Y_1 for a given firm. Pertaining to this study, while the leverage ratio for a company with a banker on its board can be observed, we do not observe how the same company would have shaped its capital structure without the presence of the banker-director, or vice versa. If we let D be an indicator variable, with D=1 if treatment is received and D=0 otherwise, the observed outcome can be summarized by the following equation:

$$Y = (1-D)Y_0 + D\ Y_1 = Y_0 + D(Y_1 - Y_0) . \quad (4)$$

If the treatment were randomized across firms, then one could estimate ATE by testing simply the difference in means. However, the decision to receive treatment is rarely randomized. Thus, the principal econometric problem in the estimation of treatment effects is selection bias, which arises from the fact that treated individuals differ from the non-treated for reasons other than treatment status per se. In the context of this study, previous research on banker-directors suggests that the companies that have a banker on their boards are not a random sample. Booth and Deli (1999), Kroszner and Strahan (2001), and Byrd and Mizruchi (2005) find that the probability of having a banker on a board is a function of the firm's size, the extent of information asymmetry, and previous debt levels, so there is evidence for self-selection into treatment.

When the decision to receive the treatment is not randomized across agents, as in our case, using the differences in means after conditioning on X – as summarized by the OLS coefficient on the banker dummy -- would yield a bias amounting to

$$\text{Bias ATE} = E(Y \mid X, D=1) - E(Y \mid X, D=0) - E(Y_1 - Y_0 \mid X) . \qquad (6)$$

The task is then to use appropriate estimation techniques to remove the bias. I follow the "control function," also known as "endogenous dummy variable" approach developed by Heckman (1976, 1978). Specifically, the model considers the effect of an endogenously chosen binary treatment on a fully observable

continuous variable. It also has the added advantage of allowing for a direct test of endogeneity and selectivity. Under the "endogenous dummy variable" approach, one first models the probability of receiving the treatment (see Greene, 2003, pp. 787-88) together with the structural outcome equation. The full model becomes:

$$Yi = \beta_0 + \beta_1 X_i + \beta_2 D_i + \varepsilon_i \quad (7a)$$

$$D_i^* = \delta Z_i + u_i \quad (7b)$$

$$D_i = 1 \quad \text{If} \quad D_i^* > 0$$

$$D_i = 0 \quad \text{if} \quad D_i^* < 0$$

where D_i is an endogenous dummy variable indicating whether the treatment is received or not. The binary decision to obtain the treatment is modeled as an outcome of an unobserved latent variable, D_i^*. Z_i is a set of characteristics that affect the agent's decision to receive the treatment. The variables in the treatment equation (Z) may overlap with the variables in the structural equation (X), but it is assumed that at least one component of Z is unique and a nontrivial determinant of D. We may refer to this variable as an instrumental variable that is correlated with the endogenous dummy variable D, but uncorrelated with the outcome Y, except through D. Last, the individual error terms, ε_i and u_i, are assumed to have a bivariate normal distribution:

$$\varepsilon_i \sim N(0,\sigma)$$

$$u_i \sim N(0,1)$$

$$corr(\varepsilon_i, u_i)=\rho .$$

The parameters of the model can be estimated by full information maximum likelihood (FIML) method (Maddala, 1983; Greene, 1980; Greene, 1995a), or the two-step procedure developed by Heckman (1976, 1978). I estimate the model with FIML for two reasons. First, the FIML is a more efficient estimation technique compared to the two-stage estimation (Greene, 2003). Second, in my analysis I will have a specification where I introduce an interaction variable between the endogenous dummy variable (banker-director presence) in the model and a control variable (the ratio of tangible assets) in order to test whether banker-directors reduce the sensitivity of debt finance to the amount of assets that can be pledged as collateral. The FIML estimation remains consistent when such interaction terms are included in the model, while the two-step procedure does not.

5.3 Estimating the probability for including a banker in the board of directors

As discussed in the previous section, the first step to implement an average treatment effects model is modeling the probability of treatment (Equation 7b). In this section, I discuss the determinants of a firm's utilization of the services of a bank executive on its board of directors. In selecting the variables, I extensively rely on the findings of Booth and Deli (1999), Kroszner and Strahan (2001), Byrd and Mizruchi (2005), and Rumble and Santos (2006), who have examined the

determinants of banker-director presence on a company's board of directors.[12] I, however, depart from these studies by averaging all explanatory variables over the previous three years instead of using them contemporaneously. The board composition would adjust with a lag to the firm's environment, especially if the board of directors is structured as staggered.[13]

In building the treatment equation, we must first consider the incentives of a firm to utilize the services of a bank executive on its board of directors. A firm with a significant amount of debt in its capital structure may find it worthwhile to use the services of a banker on its board, as the banker would bring in expertise to manage the existing stock of debt. I include the ratio of total debt to total capital in order to account for the amount of debt the company already has. A firm with significant information asymmetry may find it valuable to include a banker on its board and use bank certification in order to reduce the information asymmetry, aiming to facilitate debt finance with lower prices. I use the volatility of stock returns and the ratio of research and development expenses to net sales as proxies for the extent of information asymmetry between a firm and the financing community. A firm with a lower level of tangible assets would have more incentives to invite a bank representative to its board, because additional

[12] I, however, do not report the results from a probability model for banker-director presence due to endogeneity concerns.

[13] A staggered board of directors occurs when a corporation elects only a portion of its directors at a time, with different groups of directors having overlapping multi-year terms, instead of en masse, with all directors having one-year terms. This strategy is usually implemented to thwart hostile takeover attempts.

monitoring by the banker may reduce the need to pledge collateral against borrowing. I use the ratio of plant, property, and equipment to total assets to proxy for the amount of tangible assets. If a firm has direct access to public debt markets, it would be less dependent on bank loans and may not benefit from a banker-director. An indicator variable for the presence of a credit rating is used as a proxy for firm's access to public debt markets. Finally, I control for firm size, board size, industry effects, and year effects.

The specification of the treatment equation would also depend on the incentives of a bank executive to serve on a board of directors of a company. Bank executives do not face any legal restrictions on joining the boards of directors of non-financial firms. However, the potential conflicts of interest between shareholders of the company and the debt-holders and being subject to due diligence doctrine could create a disincentive for the banker to accept an invitation to join the board (Kroszner and Strahan, 2001). The conflicts of interest would be higher for firms that are more financially distressed. I use a modified measure of Altman's Z-score to account for the probability of financial distress.

The presence of a banker on a board is thus the reduced-form result of both the company's desire to have the banker on its board and the willingness of the banker to serve on the board.

5.4. Results from the average treatment effects model

5.4.1 The impact of banker-directors on debt finance

This section presents and discusses the results of the ATE estimation (Equations 7a and 7b). The dependent variable (Y) in the structural equation (Equation 7) is the debt ratio. I calculate the debt ratio based on market values (the ratio of total debt to total debt plus equity) and based on book values (the ratio of total debt to total assets) separately,[14] and perform the estimation based on both measures; however, I report only the results for leverage ratios based on market values. All of the results persist when I use the debt ratio based on book values. The exogenous explanatory variables (X) are as described in section 5.1, and are lagged by one year.

In the treatment equation (Equation 7b), the dependent variable is a dummy variable indicating the presence of at least one banker-director on the board of directors. The predictors for the presence of a banker-director are the variables discussed in section 5.3. All explanatory variables in the treatment equation are averaged over the past three years. Both the structural equation and the treatment equation include industry and year fixed effects and are clustered at the firm level,

[14] Even though leverage ratios based on market values are used more commonly in the corporate finance literature, it has been argued that using book value as opposed to market value of debt helps reduce the potential for reverse causality between capital structure and performance, because book values are less sensitive to the capital markets' assessments about future performance (Campello, 2006).

and the system is estimated jointly with the full information maximum likelihood method.

Panel A of Table 3 presents the estimation results for the leverage equation. Columns (1) to (3) present the results for the OLS estimations, and are provided for comparison to the ATE results. Columns (4), (5), and (6) summarize the ATE results. The tests for independent equations (lack of endogeneity) are rejected for each specification at the 1 percent level and point to a strong endogeneity between the bankers' presence on company boards and debt ratios. The treatment effects model is thus the correct specification.

The control variables – the ratio of tangible assets, the ratio of research and development expenditures, the market-to-book ratio, and the return on assets -- have the predicted signs and are individually and jointly significant. The ratio of tangible assets is positively and significantly related to leverage. The uniqueness of the firm's assets, as approximated by the R&D ratio and the market-to-book ratio, are negatively and significantly correlated with the debt ratio. The coefficient on return-on-assets is also negative and significant. The results on the control variables are in line with findings in the prior empirical research on firm capital structure.

The main variable of interest is the coefficients on the banker-director dummies in the ATE specifications in Panel A.[15] Column (4) presents the results for the model, where the treatment is the presence of a bank executive on a board of directors, regardless of affiliation. The presence of a banker-director has a positive and significant effect on the debt ratio of a company. Columns (5) and (6) differentiate between the banker-directors that do not have a lending relationship with the company (unaffiliated banker-directors), and banker-directors that do have a lending relationship with the company (affiliated banker-directors). The results indicate that both unaffiliated and affiliated banker-directors are associated with higher debt finance. The average treatment effect is in the range of 0.19 to 0.21 and is significant at the one percent level, when a bank executive serves on a company's board of directors.

Booth and Deli (1999), Kroszner and Strahan (2001), and Byrd and Mizruchi (2005) have shown that there is a positive correlation between the presence of an unaffiliated banker-director and debt finance, but they did not find any significant effects of affiliated banker-directors on debt finance. However, these studies did not take into account the differences between the companies that choose to include a banker on their boards and the companies that choose not to. Once I control explicitly for the banker-selection process for joining boards, I am

[15] Panel B presents the corresponding results for the treatment equation, which is jointly estimated with the models in Panel A.

able to show that affiliated bankers increase debt finance when they serve on a company's board of directors. The average treatment effect is 0.19 and is significant at the one percent level; i.e., in the case that a firm and a bank mutually find it beneficial to have the banker on the company's board, the debt ratio of the company increases on average by 0.19 compared to a similar firm with no lender representation on its board. This effect is similar in magnitude to obtaining a loan rating (Sufi, 2006).

The observed increase in the leverage ratios could be a result of issuing more private debt, more public debt, and less equity; paying more dividends; or repurchasing more equity shares. Table 4 tests whether the observed increase in debt ratios in the presence of affiliated banker-directors are attributed to an increase in the private debt issues. Both private and public debt issues contribute to the higher debt ratios (Column 1). Banker-director presence is correlated with private debt issuance (Column 2), but not with public debt issuance. Companies that issue equity and distribute earnings have lower debt ratios (Column 1), but banker-directors have no effect on the amount of equity issues (Column 5) or earnings distributions (Column 6). These findings illustrate that the banker-directors contribute to debt finance via larger private debt issues.

5.4.2. Disentangling the expertise and monitoring effects: Banker-directors and the dependence of debt on the availability of collateralizable assets

From this section onward, the paper aims at disentangling the differences between affiliated and unaffiliated bankers on corporate boards. The previous section illustrated that both types of bankers are associated with higher levels of debt finance. The observed positive relation between debt finance and banker-director presence can be due to an expertise effect: Bankers provide the management with expertise with regards to debt finance. Or it can be due to a monitoring effect: Affiliated banker-directors may be monitoring the lending relationship between a bank and a company, and unaffiliated banker-directors may be monitoring the company on behalf of the banking community.

Booth and Deli (1999) and Kroszner and Strahan (2001) argue that if the main duty of a banker-director were to monitor the debt outstanding, but not to provide expertise, then we would observe a more positive effect of an affiliated banker-director on debt finance compared to an unaffiliated banker-director. In their analyses, they demonstrate that unaffiliated banker-directors are associated with significantly higher debt ratios, while affiliated banker-directors are not associated with any significant changes in debt ratios. They conclude from these findings that the main duty of a banker-director is not to monitor, but to provide expertise to the management with regards to the debt markets. The literature so far is thus silent about what role the affiliated banker-directors play at corporate boards.

In this section, I take a slightly different approach and investigate whether affiliated and unaffiliated banker-directors have differing effects on the relation between the amount of debt finance and the amount of tangible assets that a company owns. The main impediment to raising debt arises from the asymmetric information problems between a borrower and potential lenders. A common solution to information problems would be to pledge more collateral and to agree to other covenants in the debt contract at the time of borrowing. However, there might be instances where a company lacks adequate tangible assets to pledge as collateral against borrowing. In such a situation, the inclusion of a bank executive on the board of directors might help to reduce the information asymmetry between the bank and the company and help raise debt finance.

If banker-directors perform a monitoring function, then we should witness a reduction in the use of other mechanisms that are designed to alleviate the information problems. The pledge of collateral against borrowing is a straightforward mechanism. Accordingly, the models presented in Table 5 test which types of banker-directors reduce the sensitivity of firms' debt levels to the amount of collateralizable assets that they own. The main difference between the models in Table 3 and the models in Table 5 is that the latter includes an interaction term for banker-director dummies, the tenure of the banker-directors on the boards, and the amount of hard assets that can be pledged as collateral (plant,

property, and equipment). This variable is built to capture the effect of a banker-director on the sensitivity of debt finance to collateralizable assets.

The results are presented in Table 5.[16] We witness significant differences among affiliated and unaffiliated banker-directors: The longer a company employs an affiliated banker on its board, the less sensitive is its debt ratio to the amount of tangible assets (PPE/Assets) that can be pledged as collateral (Column 4). On the contrary, the longer an unaffiliated banker serves on a company board, the more sensitive is its debt ratio to the amount of tangible assets it has (Columns 1 and 3).

These two findings together point to significant differences between affiliated and unaffiliated banker-directors. The dependency of a company's debt ratio to the amount of tangible assets it holds diminishes during the tenure of an affiliated banker-director. This finding suggests that affiliated bankers may be helping to alleviate information problems between borrowers and lenders, and in a way acting as a substitute mechanism for collateral against debt finance. On the contrary, the longer an unaffiliated banker is present on a company's board without changing her status to "affiliated," the more sensitive is the company's debt ratio to the amount of tangible assets it owns. These results point to the possibility that

[16] I estimate the model twice: using the 48 Fama-French industries (Columns 1 and 2) and using the 1 digit SIC codes (Columns 3 and 4), because a finer industry classification is highly correlated with the amount of fixed assets a company holds.

affiliated banker-directors may be performing a monitoring role for affiliated banks.[17]

5.4.3 Does the timing of banker "affiliation" matter?

In this section, I differentiate between two types of affiliated bankers on boards, depending on when the lending relationship between the bank and the company was initiated:

(i) The bank obtains a board membership first, and gives a loan to the company afterwards;

(ii) The bank gives a loan to the company first, and obtains a board membership afterwards.

These two different types of affiliated bankers might represent different motives for a company to invite a banker onto its board, still in line with the monitoring hypothesis. A firm, for example, may be in a good financial position, but be unable to signal its health to potential lenders. Such a firm may invite a banker onto its board of directors in order to reduce the information problems. That director's bank, upon observing the financial health of the company, may start lending to the company. This scenario belongs to case (i) described above, and predicts that the banker-director would be associated with an increase in debt finance. Columns 1 and 3 in Table 6 confirm this prediction. When a bank obtains a board seat first and begins lending to the company afterwards, there is an increase in the debt ratio

[17] The results are robust if I use the approximated market values for the PPE following the algorithm suggested by Durnev et al. (2004).

of the company. These types of relationships decrease the sensitivity of debt finance to the amount of tangible assets.

Case (ii) may represent the scenario for a distressed borrower, as illustrated by Gilson (1990). Gilson shows that at times of financial stress, lenders join the board of directors of a company and monitor the existing lending relationship. This also represents a monitoring function of a lender, but the prediction is reversed: We would expect to see a deterioration in debt finance. Columns 2 and 4 in Table 6 confirms this prediction: Such relationship are associated with a significant decrease in debt finance.

6. How Do Affiliated Banker-Directors Help Companies Increase Debt Finance? Evidence from Loan-Level Analysis

This section focuses on how the presence of a banker-director on a board of directors affects the various attributes of the private debt (bank loans) in a firm's capital structure. I concentrate on the bank loans because any effect of a strong bank-firm relationship would mainly manifest itself in the private debt contracts negotiated between the banks and the borrowers. Furthermore, the "renegotiation" aspect of bank loans requires a close monitoring of the borrower by the lending bank.

The monitoring hypothesis predicts that the presence of an affiliated banker-director would be associated with (i) a decrease in the probability of the

inclusion of collateral and financial covenants in individual loan contracts; and (ii) a decrease in loan prices.

6.1 Summary statistics for loan data

The loan information is obtained from the Dealscan Database, which has been described in the Data section. I use information on individual loan agreements that were originated between 2002 and 2004 by the 403 companies that comprise the sample in this study. The basic unit of observation is a loan contract, whose terms are negotiated between the lead lender in the syndicate and the borrower.[18]

There are a total of 1132 loans in the sample. 299 of these loans (26.4 percent) were taken by companies that had commercial bankers serving on their boards of directors at the time of the loan initiation. Panel A of Table 7 compares the means for selected loan contract terms by commercial banker presence on or absence from a company's board of directors. The only significant difference is observed in the loan size. Loans taken by companies with a banker-director averaged $851 million in size, whereas loans taken by companies without a banker-director averaged $737 million in size. However, the difference in loan sizes disappears, when the loan size is scaled by company size. The two groups of companies are identical in terms of other loan contract terms: loan price, the presence of collateral, financial covenants, and maturity.

[18] Loans are also referred to as a "facility," or a "tranche" in the Dealscan database. A firm may have a "deal," which includes multiple loans at the same time. Each loan in a deal is, however, negotiated separately and has varying terms.

In Panel B in Table 7, I classified each loan in the sample according to whether a bank represented on the board was among the lead arrangers in the lending syndicate. 114 of the loans in the sample (10 percent) met this criterion. According to differences in means tests, the terms of the loans that were taken from a bank that has representation on a company's board are significantly different. First, these loans are cheaper: The all drawn-in spread is 62 points, compared to 98 points for loans that were taken from banks with no connection to the borrower through its board of directors. Furthermore, the affiliated loans also require significantly less collateral and fewer financial covenants.

These univariate tests point to significant differences about how affiliated bankers and unaffiliated bankers affect loan contract terms. If a loan is taken from an affiliated bank, it is cheaper and carries fewer covenants. Unaffiliated banker-directors, on the contrary, do not seem to have any influence on loan contracts. The combined results point to the monitoring role played by affiliated bankers once more. The following section will show the effects of affiliated banker-directors in a multivariate framework, taking into account the simultaneity between the main contract features.

6.2 Empirical approach: Interdependencies among the loan contract terms

As Dennis et al. (2000) argue, the terms of a loan contract are determined simultaneously and are related to a common set of exogenous factors such as the

degree of the information asymmetry between a lender and a borrower (Myers, 1977), and the credit quality of the borrower (Smith and Warner, 1979; Diamond 1991). An empirical model of loan contract terms should thus take into account the interdependencies among the contract terms.

A valid econometric approach for studying the simultaneously-determined loan contract terms would be not to include the endogenous contract features as explanatory variables in the reduced form regression equation (see Berger and Udell, 1995; Guedes and Opler, 1996; Qian and Strahan, 2006). When the endogenous variables are not included in the regression equation, the estimates from the OLS would remain unbiased. Another valid estimation method is to estimate a simultaneous equations model, allowing the contract terms to be interdependent (Dennis et al., 2000, Bradley and Roberts, 2004).

In modeling loan contract terms, I follow both empirical approaches. I first estimate reduced form equations for collateral presence and loan prices separately, leaving the loan contract terms out of the list of explanatory variables. I then estimate the loan contract terms jointly with a simultaneous equations model. To specify the simultaneous system, I closely follow Dennis et al. (2000), allowing for bi-directional relationships between loan maturity and collateral presence and modeling loan price as being determined by the loan maturity and collateral

presence. The loan size enters the model as an exogenous variable. The model is then expressed with the following system of equations:

Collateral Presence = f(Banker-Director Presence, Borrower Characteristics, Maturity, Other Loan Characteristics) $+e_1$ (8a)

Loan Maturity = f(Banker-Director Presence, Borrower Characteristics, Collateral Presence, Other Loan Characteristics) + e_2 (8b)

Loan Price = f(Banker-Director Presence, Borrower Characteristics, Collateral Presence, Maturity, Other Loan Characteristics) + e_3 (8c)

All dependent variables in the system are explicitly taken to be endogenous and are treated as correlated with the disturbances in the system's equations. The system is estimated by the three-stage least squares method, which is the most efficient estimation technique for the simultaneous systems (Schmidt, 1976). The method uses an instrumental variable approach to produce consistent estimates and generalized least squares to account for the assumed correlation structure in the disturbances across the equations. In the first stage, the method develops instrumented values for all endogenous variables by computing the predicted values from a regression of each endogenous variable on all exogenous variables in the system.[19] In the second stage, the method obtains a consistent estimate for the covariance matrix of equation disturbances. In the final stage, a GLS estimation is performed using the covariance matrix estimated in the second stage, and the instrumented values from the first stage (see Greene, 2003, pp. 405-407).

[19] Identical to the first stage in the two-stage least squared estimation.

6.3 Banker-directors and the inclusion of collateral and financial covenants in loan contracts

Using the loan-level data and the empirical approaches described above, this section tests Hypothesis 2b: The presence of a lender (affiliated banker) on a company's board of directors is associated with a decrease in the inclusion of covenants in loan contracts. The main test is whether the presence of an affiliated banker-director is associated with a significant decrease in the probability of inclusion of collateral and financial covenants in loan contracts.

Panel A in Table 8 presents the marginal effects estimated from a probit model for the inclusion of collateral in a loan contract, and Column 1 in Table 10 presents the results from the simultaneous estimation of the loan contract terms. In Dealscan, the "secured" variable, which identifies the collateral presence, is missing for a large number of cases. I follow some prior studies to deal with the missing "secured" variable. In Columns 1-3, I assume that the deal is not secured if it is identified as missing, and in Columns 4-6, I estimate the model for a subset of loan contracts where the "secured" variable is not missing (Strahan, 1999; Hubbard et al., 2002). The results from both approaches are similar.

In Columns 1 and 4 of Table 8, the model includes the banker dummies alone. The coefficient on the dummy variable belonging to the affiliated banker-directors is negative and significant, pointing to a decrease in the probability of the inclusion of collateral when there is an affiliated banker on the board. In Columns

2 and 5, the model includes controls for firm characteristics. The observed effect of an affiliated banker-director is still significant and negative after controlling for firm characteristics: The presence of an affiliated banker-director reduces the probability of a pledge of collateral by six to 17 percent. Columns 3 and 6 controls for firm characteristics and loan characteristics. Once I control for loan characteristics, the coefficient on affiliated banker-director dummy becomes insignificant as expected. The loss of significance is due to the simultaneous determination of loan contract terms, which makes the estimated coefficients biased. The statistical significance is regained in Table 10, when the loan contract terms are estimated simultaneously. The presence of an affiliated banker is associated with a seven percent decrease in the probability of collateral pledge.

Panel B, Table 8 repeats the same analysis, when the dependent variable is an indicator variable for inclusion of financial covenants in a loan contract.[20] The results mimic the previous findings. The coefficient on the dummy variable belonging to the affiliated banker-directors is negative and significant, pointing to a 12 percent decrease in the probability of the inclusion of financial covenants when the loan is taken from a bank that has a representation on the borrowing company's board of directors.

[20] Financial covenants are limits placed on the levels of various accounting variables (ratios) that must be maintained while the debt is outstanding. Should the limits be violated, the principal repayment could become due immediately, the borrower could be assessed a pre-determined penalty, or the terms of the loan(s) could be renegotiated.

Parallel to the firm-level analysis, I also test whether the timing of the affiliation matters. I find, in unreported analyses, that only the affiliated banker-directors, who first joined a bank's board of director and initiated lending afterwards, decrease the probability of occurrence of collateral and financial covenants in individual loan contracts.

Unlike the presence of an affiliated banker, the presence of an unaffiliated banker on a company's board does not decrease the likelihood of pledge of collateral or financial covenants at the time of borrowing. The results once more illustrate significant differences between affiliated banker-directors and unaffiliated banker-directors. The presence of an affiliated banker on board may be viewed as a substitute monitoring device.

6.4 Banker-directors and loan prices

A related hypothesis is whether the presence of banker-directors decreases the costs of borrowing (Hypothesis 3). We would expect to see a decrease in loan prices if being present on the board of directors facilitates more efficient monitoring for lenders and thus decreases the cost of monitoring. This section contains the formal test of this prediction.

Table 9 presents the OLS estimation of loan prices, and column 2 in Table 10 presents the simultaneous equations estimation. The dependent variable is "all in drawn spread," which is defined as the total annual spread (fees and interest)

paid over LIBOR for each dollar drawn from the loan. Aside from the banker dummies, the model includes firm characteristics (Column 2) and loan characteristics (Column 3) that might affect the spread. All estimations are clustered at the firm level, and control for industry fixed effects.

The results show that the presence of affiliated directors is associated with a lower cost of borrowing. The presence of an affiliated banker on a board of directors decreases the spread charged by 27 to 113 basis points. On the contrary, the presence of unaffiliated bankers is associated with higher loan prices (132 points).

Finally, unreported results (available upon request) demonstrate that only the affiliated banker-directors, who first joined a bank's board of directors and initiated lending afterwards, decrease the loan prices. These results once more provide evidence in support of the monitoring hypothesis.

7. Robustness Checks

7.1 Initial year on board

The analyses in this paper showed that affiliated banker-directors provide a monitoring function, and help companies raise debt finance at more favorable terms. Unaffiliated bankers, on the other hand, seem to fulfill an expertise function. However, often the unaffiliated bankers gain the affiliated status after they spend some time serving on the company's boards, most often during their

first year of service (see Figure 1). As a consequence during the initial year a banker serves on a board, her affiliation status may not be very clear. Especially, if the banker joins the board during loan negotiation, some affiliated bankers may mistakenly be classified as unaffiliated. To control for the potential misclassification during a banker's first year of tenure on board, I repeated the analyses with excluding the bankers who have spent less than a year on the board of directors. The results remained quantitatively and qualitatively similar.

7.2 Effects of investment bankers

About 9 percent of the companies in the sample utilized the services of an investment banker on their boards (Panel A, Table 1). Investment bankers, like unaffiliated bankers, could provide expertise to the management about financing activities, but unlike commercial bankers their expertise would be valuable for equity finance rather than debt finance. The results from the average treatment effect estimation for investment bankers reveal a negative correlation between investment banker presence on company boards and debt ratios. Loan-level analyses find that investment banker-director presence is not associated with a significant change in loan prices and probability of inclusion of collateral and financial covenants in debt contracts. These results show that the expertise about debt markets and monitoring of debt contracts belong to commercial bankers on boards.

7.3 Other governance mechanisms

The presence of banker-directors on corporate boards may be correlated with other governance mechanisms, such as board size (Yermack, 1996), board independence (Rosenstein and Wyatt, 1990), and the presence of institutional investors (Hartzell and Starks, 2003). After controlling for the selection process of bankers on corporate boards, there is no correlation between these corporate governance measures and capital structure outcomes. Only the size of the board of directors influences capital structure, but its influence is indirect: Bankers are present on larger boards, but once we control for the higher probability of a banker being present on a larger board, the board size and ratio of debt finance are uncorrelated. The board independence and institutional investor presence have, on the other hand, no direct effect on debt finance and no indirect effect via influencing the probability of banker presence on corporate boards.

7.4 Public debt issues and common equity issues

Sections 5 and 6 illustrated that the presence of affiliated bank executives on corporate boards is associated with an increase in leverage ratios and offered a monitoring-based explanation for the positive relationship between an affiliated banker-director's presence and debt finance, presenting evidence from terms of private debt contracts (loans). If the monitoring hypothesis suggested in this paper is correct, we should then see the biggest impact of banker-directors on the amount and terms of private debt (bank loans), because private debt is the most extensively

monitored type of outside finance, and the terms of private debt are often renegotiated. Public debt and equity, on the other hand, is more standardized and relies more on monitoring done by institutional investors, analysts, and credit rating agencies, not by banks that underwrite these issues.

I analyzed the debt issues and equity issues undertaken by my sample firms during 2002-2004 as reported by the Securities Data Corporation (SDC). There were a total of 619 debt issues, and 6 percent of these issues were underwritten by a bank that holds a directorship on the issuer's board. In line with the discussion above, unlike private loans, the public debt yields are not significantly different if the underwriter has access to the issuer's boardroom. There were a total of 77 equity issues. Among these issues, only one was underwritten by a bank that had a representation on the issuer's board of directors,[21] so it was not possible to conduct tests of equity issue terms.

8. Conclusions

This study investigates the effects of banker-directors, especially affiliated banker-directors, on corporate finance. The findings suggest that boards that hire affiliated bankers benefit companies by facilitating access to the debt markets through better monitoring, and these findings contribute to the literature that studies the consequences of bankers' presence on boards.

[21] It might be that the investment bankers, as opposed to commercial bankers, are engaged in securities underwriting. However, there was only one equity issue out of 77 that was underwritten by an investment bank that is represented on the board, so that concern is not valid for this study.

Previous studies did not find any impact of affiliated banker-directors on the amount of debt finance in a company's capital structure, possibly because they did not account for the endogeneity between the banker's presence and the firm's capital structure. I show that the presence of a banker-director on a company's board of directors and the observed debt ratios are in fact endogenous outcomes; and once we control for the differences between the companies that select to include a banker on their boards and the companies that select not to include one, the impact of an affiliated banker-director on a company's debt ratio is positive.

The paper offers an "improved monitoring" explanation for the positive association between a company's debt ratio and the affiliated-banker presence on its board. First, I show that the presence of an affiliated banker-director reduces the sensitivity of the company's debt finance to the amount of tangible assets that a company owns. I strengthen this finding, which is based on firm-level analyses, by studying the characteristics of individual loan contracts. I find that that the presence of an affiliated banker on a board is associated with a lower probability of restrictive covenants and also with a reduction in the cost of borrowing. All of these findings are novel in the literature, and they point to a monitoring function performed by affiliated bankers on corporate boards.

A major policy implication from this research concerns the regulations surrounding the composition of board of directors. Recent regulatory changes

strongly discourage public corporations from using the services of related parties (affiliated directors, gray directors) on their board of directors. However, as this paper illustrates, there may be some affiliated parties that may be contributing positively to firm financial outcomes, and their departures from company boards as a result of regulatory pressures (Table 1, Panel B) may not lead to better outcomes.

Data Appendix

Table A1. Variable Description

Variable	Definition	Source
	A. Board Characteristics	
Board Size	Logarithm of number of directors serving on a board of directors	Annual Reports/ Proxy Statements
Insiders	Number of company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board	Annual Reports/ Proxy Statements
Banker-director	Indicator variable indicating the presence of at least one bank executive on a board of directors	Annual Reports/ Proxy Statements
Unaffiliated banker-director	Dummy variable indicating the presence of an executive of a bank with no outstanding loan relationship with the company during the previous five years	Annual Reports/ Proxy Statements
Affiliated banker-director	Dummy variable indicating the presence of an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate	Annual Reports/ Proxy Statements
Tenure of the banker-director	Number of years since the banker-directors joined the board	Annual Reports
	B. Company Characteristics	
Ttal Assets	Book value of total assets	Compustat
Market Value	Sum of market value of common stock, liquidating value of preferred stock and book value of total debt.	Compustat/ CRSP
Total Debt	Long-term debt plus short-term debt (debt in current liabilities)	Compustat
PPE	Net value of plant, property and equipment	Compustat
R&D	Research and development expenditures	Compustat
ROA	EBITDA/ Total Assets.	Compustat
Market-to-Book Ratio	Sum of book value of debt and market value of equity to total assets	Compustat

Stock Return Volatility	Standard deviation of monthly stock returns over the previous three years	CRSP
Leverage	The ratio of total debt to market value	
Firm Size	Logarithm of net sales	Compustat
Short-term Debt / Debt	Ratio of debt in current liabilities to total debt	Compustat
Commercial Paper Rating Indicator	Dummy variable indicating that the firms has commercial paper rating	Compustat
Financial Distress Proxy	3.3*EBIT/Sales + 1.0*Sales/Total Assets + 1.4*Retained Earnings * Total Assets + 1.2 * Working Capital * Total Assets	Compustat
Cash	Cash and marketable securities	Compustat
Loans / Market Value	Ratio of total loans taken between 2002-2004 to market value	Dealscan/Compustat/ CRSP
Public Debt Issue / Market Value	Ratio of total public debt issues between 2002-2004 to market value	SDC/Compustat
Equity Issue / Market Value	Ratio of total equity issues between 2002-2004 to market value	SDC / Compustat/CRSP
Retained Earnings / Market Value	Ratio of total retained earnings between 2002-2004 to market value	Compustat/CRSP
(Dividends+Repurchases) / Market Value	Ratio of total dividends and repurchases between 2002-2004 to market value	Compustat/CRSP
Earnings Variability	Standard deviation of earnings increase/decrease over the previous five years scaled by average assets over the previous five years	Compustat
	C. Loan Contract Characteristics	
Loan Size	Total facility amount in millions of dollars	Dealscan
Loan Price	All Drawn-in Spread: the total annual spread (fees and interest) paid over LIBOR for each dollar drawn from the loan,	Dealscan
Loan Maturity	Logarithm of maturity of the facility in months	Dealscan
Financial Covenants	Dummy variable equal to one if the loan has financial covenants and otherwise	Dealscan
Collateral	Dummy variable equal to one if the loan is secured	Dealscan

Not Rated	Dummy variable equal to one if the loan is not rated	Dealscan
Rating	Rating is equal to1 if A, 2 if B, 3 if C	Dealscan
Number of Lenders	Total number of lead and participant banks in the lending syndicate that originated the loan	Dealscan
Term Premium	12-month average for the deal year of the yield differential between 10-year and 1-year U.S. T-bonds	Federal Reserve Board
Credit Spread	12-month average for the deal year of the yield differential between AAA and BAA U.S. bonds	
Eurodollar Rate	12-month average for the deal year of 6-month Eurodollar rate	Federal Reserve Board

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Figure 1. Number of Years on Board Until the Banker-Director Becomes Affiliated

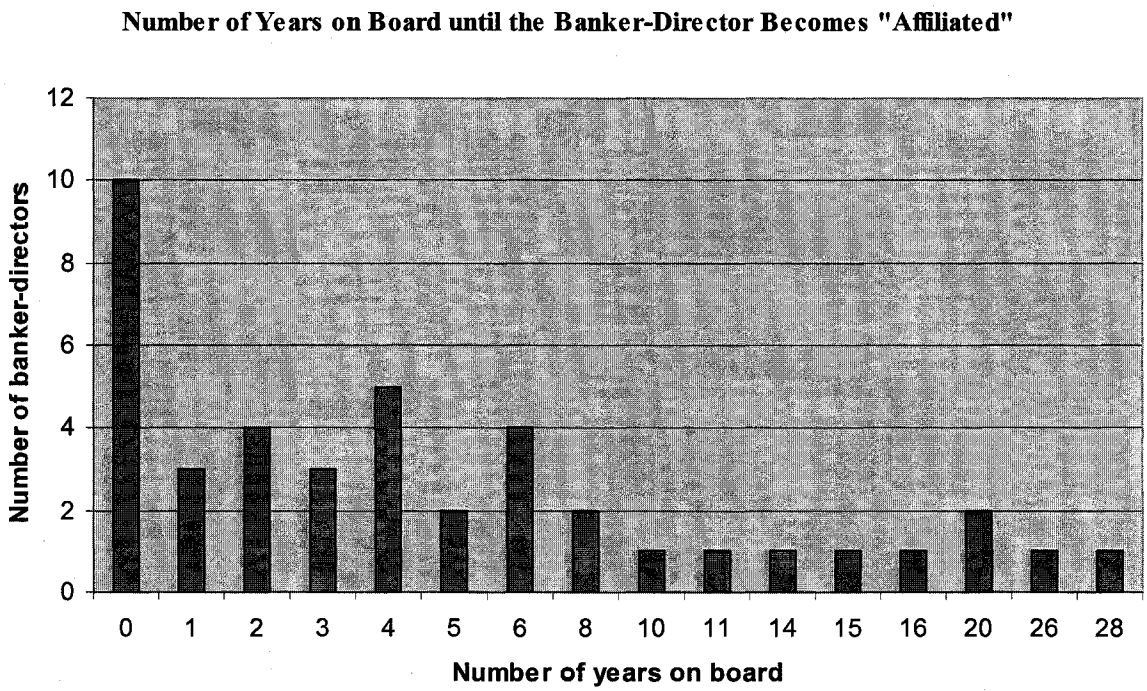

Table 1. Summary Statistics for Board of Directors Characteristics

Panel A. Presence of Banker-Directors on Company Boards

The table presents summary statistics for board of directors characteristics. The sample consists of 404 non-financial companies that were included in the S&P500 Index in 2002. Board size is the number of members on a board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate.

	2002	2003	2004
Average Board Size	10.70	10.42	10.60
Average Number of Insiders	2.04	1.66	1.77
Percentage of Insiders	19.52%	16.18%	17.16%
Percentage of Companies with Directors Employed at Commercial Banks	27.23%	25.50%	22.03%
Percentage of Companies with Unaffiliated Banker-Directors	18.32%	15.84%	14.60%
Percentage of Companies with Affiliated Banker-Directors	11.63%	12.13%	8.91%
Banker first gets board membership, then gives a loan	8.17%	8.17%	6.44%
Banker first gives a loan, then gets board membership	3.71%	4.21%	2.72%
Percentage of Companies with Directors Employed at Investment Banks	9.65%	9.41%	9.41%

Panel B. Summary of Tenure of Banker-Directors

The table lists the distribution of banker-directors according to their tenure (number of years of service on a board of directors) by year.

	2002	2003	2004
	Unaffiliated Banker-Directors		
Tenure < 1 year	9	4	2
2 years < Tenure < 5 years	23	31	20
5 years < Tenure < 10 years	17	16	16
10 years < Tenure < 15 years	9	6	4
15 years < Tenure < 20 years	9	6	4
Tenure > 20	7	6	4
	Affiliated Banker-Directors		
Tenure < 1 year	5	3	0
2 years < Tenure < 5 years	21	21	14
5 years < Tenure < 10 years	11	17	14
10 years < Tenure < 15 years	4	14	3
15 years < Tenure < 20 years	4	8	4
Tenure > 20	2	3	3

Table 2. Summary of Firm Characteristics (2002-2004)

The table presents the means of the main financial variables used in the paper, and differences in means tests by presence of a banker-director on a company's board for the pooled sample. Banker-director refers to a board member whose primary employer is a commercial bank. Total assets are the book value of total assets. Market value is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt. Total debt is long-term debt plus short-term debt (debt in current liabilities). PPE is the net value of plant, property and equipment. R&D is research and development expenditures. Market-to-book ratio is the sum of book value of debt and market value of equity to total assets. Return on assets is EBITDA/ Total Assets. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Data are obtained from the Compustat Annual Industrial Database.

	Total Sample Mean	Standard Deviation	With Banker-director	With no banker-director	p-value for differences in means
Total Assets	18,021	45,781	25,142	15,650	0.002***
Net Sales	13,197	25,445	16,507	12,095	0.009***
Market Value	24,281	49,804	28,009	23,039	0.133
Total Debt	5,757	22,645	9,230	4,600	0.002***
Total Debt / Assets	0.25	0.16	0.27	0.24	0.001***
Total Debt / Market Value	0.23	0.20	0.27	0.21	0.000***
PPE / Assets	0.31	0.21	0.34	0.30	0.004***
R&D / Net Sales	0.05	0.12	0.02	0.06	0.000***
Return on Assets	0.14	0.08	0.14	0.14	0.798
Market-to-Book Ratio	1.75	1.26	1.55	1.81	0.002***
Stock Return Volatility	0.13	0.06	0.11	0.14	0.000***
Board Size	10.60	2.32	11.41	10.29	0.000***
Number of Insiders	1.88	0.99	1.86	1.81	0.429
Number of Insiders / Board Size	0.18	0.09	0.17	0.18	0.429

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 3. Banker-Directors and Debt Finance

Panel A: Leverage Equation

Column (1), (2), and (3) present the results from an OLS estimation of leverage equation (Equation 1 in text). Columns (4), (5), and (6) give the results for the leverage equation (Equation 7 in the text) from average treatment effects estimation. Banker-director is a dummy variable indicating the presence of at least one bank executive on a board of directors. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Firm Size is the natural logarithm of net sales. PPE is the plant, property and equipment. R&D is research and development expenditures. Market-to-Book Ratio is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Return on Assets is EBITDA scaled by total assets. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at firm level. The control variables are lagged by one year. P-values are in parentheses.

	OLS Estimation			**ATE Estimation**		
	(1)	(2)	(3)	(4)	(5)	(6)
Banker Dummies						
Banker-director	-0.006			0.206***		
	(0.671)			(0.000)		
Unaffiliated Banker-Director		-0.004			0.212***	
		(0.804)			(0.000)	
Affiliated Banker-Director			-0.009			0.197***
			(0.630)			(0.000)
Control Variables						
Size	0.017***	0.017***	0.017***	0.016***	0.017***	0.018***
	(0.005)	(0.005)	(0.005)	(0.000)	(0.009)	(0.000)
PPE / Assets	0.108**	0.108**	0.108**	0.079**	0.073	0.072**

	(0.046)	(0.046)	(0.045)	(0.022)	(0.205)	(0.026)
R&D / Assets	-0.135***	-0.134***	-0.133***	-0.084***	-0.088**	-0.115***
	(0.006)	(0.006)	(0.006)	(0.061)	(0.046)	(0.006)
Market-to-Book	-0.037***	-0.037***	-0.037***	-0.028***	-0.029***	-0.034***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Return on Assets	-0.443***	-0.443***	-0.440***	-0.374***	-0.377***	-0.373***
	(0.003)	(0.003)	(0.003)	(0.000)	(0.002)	(0.000)
Constant	0.311***	0.311***	0.311***	0.346***	0.347***	0.359***
	(0.001)	(0.003)	(0.001)	(0.000)	(0.001)	(0.000)
Year Indicator Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	48 Fama-French	48 Fama-French	48 Fama-French	48 Fama-French
Observations	1209	1209	1209	1194	1194	1194
Prob > F , Prob > Chi2	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.5972	0.5971	0.5972	n/a	n/a	n/a
Rho	n/a	n/a	n/a	-0.93	-0.94	-0.93
Sigma	n/a	n/a	n/a	0.15	0.15	0.14
Lambda	n/a	n/a	n/a	-0.14	-0.14	-0.13
Test of Independent Equations: P>chi2	n/a	n/a	n/a	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Panel B: Treatment Equation Predicting the Banker Presence on a Board of Directors

The table presents the estimation results for the treatment equation: Equation (8) in the text. The dependent variable is an indicator variable equal to one if there is a bank executive serving on the board of the company, zero otherwise. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Firm size is the logarithm of net sales. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. Short-term debt is debt in current liabilities. PPE is the plant, property, and equipment. R&D is research and development expenditures. Market-to-Book Ratio is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Cash / Assets is the share of cash and marketable securities in total assets. Financial Distress Proxy is the modified Altman's measure for financial distress. Stock Return Volatility is the standard deviation of monthly stock returns calculated over the previous three years. Board size is the logarithm of number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at firm level. P-values are in parentheses.

Panel B: Treatment Equation Predicting the Banker Presence on a Board of Directors (cont'd)

Treatment Equation	Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
Size	-0.030	-0.069	-0.079
	(0.460)	(0.256)	(0.118)
Leverage (market value)	4.368***	4.485***	4.492***
	(0.000)	(0.000)	(0.000)
Short-term Debt / Debt	0.445*	0.153	0.543
	(0.090)	(0.638)	(0.154)
PPE / Assets	0.003	-0.110	0.466
	(0.993)	(0.817)	(0.192)
R&D / Net Sales	-0.684	-0.430	0.247
	(0.385)	(0.479)	(0.801)
Market-to-book	0.046***	0.047**	0.056***
	(0.002)	(0.022)	(0.006)
Cash / Assets	0.179	0.343	-1.309*
	(0.611)	(0.278)	(0.080)
Commercial Paper Rating Indicator	-0.004	0.148	-0.092
	(0.953)	(0.129)	(0.299)
Financial Distress Proxy	0.017	0.003	0.105
	(0.733)	(0.928)	(0.141)
Stock Return Volatility	-2.344**	-3.113**	-1.797
	(0.016)	(0.027)	(0.200)
Ratio of Insiders on the Board	0.136	0.343	-0.378
	(0.679)	(0.310)	(0.422)
Board Size	0.376**	0.302	0.463**
	(0.014)	(0.116)	(0.020)
Year 2003 Indicator	-0.033	-0.064	0.065
	(0.722)	(0.176)	(0.542)
Year 2004 Indicator	-0.219**	-0.169**	-0.136
	(0.018)	(0.019)	(0.221)
Constant	0.018***	-3.054***	3.299***
	(0.000)	(0.001)	(0.000)

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 4. Banker-Directors and Components of Capital Structure

The table presents the results from average treatment effects estimation for different components of capital structure. Leverage ratio is the ratio of total debt to the market value of the firm. New loans, public debt issues and equity issues are scaled by the market value of the company in the previous year. Banker-director is a dummy variable indicating the presence of at least one bank executive on a board of directors. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Tenure at Board is the number of years that the banker-director has served on the board. Firm Size is the natural logarithm of net sales. PPE is the plant, property, and equipment. R&D is research and development expenditures. Market-to-Book Ratio is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Return on Assets is EBITDA scaled by total assets. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. The control variables are lagged by one year. P-values are in parentheses.

	Leverage Ratio	New Loans	Public Debt Issue	Equity Issue	Retained Earnings	Dividends and Repurchases
Banker Dummies						
Affiliated Banker-Director	0.192***	0.120***	0.004	0.001	0.962***	-0.009
	(0.000)	(0.000)	(0.587)	0.892	(0.000)	0.198
Control Variables						
Loans / Market Value	0.191***					
	(0.000)					
Public Debt Issue / Market Value	0.194**					
	(0.031)					
Equity Issue / Market Value	-0.529**					
	(0.039)					
Retained Earnings / Market Value	-0.008					
	(0.168)					

(Dividends+Repurchases) / Market Value	-0.424***					
	(0.000)					
Size	0.018***	-0.005**	0.002	0.000	0.014	0.000
	(0.000)	(0.031)	(0.147)	(0.312)	(0.520)	(0.662)
PPE / Assets	0.059*	0.008	0.006	0.003	-0.247	-0.015**
	(0.061)	(0.651)	(0.477)	(0.317)	(0.130)	(0.047)
R&D / Assets	-0.117***	-0.032	-0.004	-0.006*	-1.160***	0.008
	(0.005)	(0.169)	(0.711)	(0.086)	(0.000)	(0.419)
Market-to-Book	-0.034***	-0.013***	-0.003***	0.000	-0.039*	-0.004***
	(0.000)	(0.000)	(0.026)	(0.723)	(0.062)	(0.000)
Return on Assets	-0.339***	0.067*	0.019	-0.009	1.658***	0.105***
	(0.000)	(0.099)	(0.379)	(0.195)	(0.000)	(0.000)
Constant	0.348***	0.100	-0.012	0.008	-0.231	0.002
	(0.000)	(0.000)	(0.365)	(0.044)	(0.368)	(0.844)
Year Indicator Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	48 Fama-French	48 Fama-French	48 Fama-French	48 Fama-French
Observations	1194	1194	1194	1194	1194	1194
Prob > F , Prob > Chi2	0.000	0.000	0.000	0.000	0.000	0.000
rho	-0.93	-0.84	-0.01	0.04	-0.99	0.19
sigma	0.14	0.08	0.04	0.01	0.74	0.03
lambda	-0.13	-0.07	0.00	0.00	-0.74	0.01
Test of Independent Equations: P>chi2	0.000	0.000	0.906	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 5. Banker-Directors and the Sensitivity of Debt Finance to the Amount of Tangible Assets

The table presents the results for the leverage equation (Equation 7 in the text) from average treatment effects estimation, with interaction terms for banker-director tenure and the ratio of plant, property, and assets included as additional control variables. Banker-director is a dummy variable indicating the presence of at least one bank executive on a board of directors. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Tenure at Board is the number of years that the banker-director has served on the board. Firm Size is the natural logarithm of net sales. PPE is the plant, property, and equipment. R&D is research and development expenditures. Market-to-Book Ratio is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Return on Assets is EBITDA scaled by total assets. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. The control variables are lagged by one year. P-values are in parentheses.

	(1)	(2)	(3)	(4)
Banker Dummies				
Unaffiliated Banker-Director	0.239***		0.272***	
	(0.000)		(0.000)	
Affiliated Banker-Director		0.343***		0.190***
		(0.000)		(0.000)
Interaction Terms				
Tenure of the Banker on the Board	-0.002*	0.000	-0.003	0.003
	(0.077)	(0.948)	(0.166)	(0.180)
Banker-Director Dummy * (PPE / Assets)	-0.112**	0.035	-0.151*	0.106
	(0.022)	(0.567)	(0.062)	(0.216)
Banker-Director Dummy * (PPE / Assets) * Tenure	0.012***	-0.003	0.015**	-0.012***
	(0.002)	(0.544)	(0.040)	(0.005)

Control Variables				
Firm Size	0.018***	0.017***	0.026***	0.028***
	(0.000)	(0.000)	(0.001)	(0.002)
PPE / Assets	0.076**	0.071**	0.074	0.06
	(0.026)	(0.028)	(0.133)	(0.209)
R&D / Assets	-0.084*	-0.111***	-0.128***	-0.132***
	(0.054)	(0.008)	(0.004)	(0.004)
Market-to-Book Ratio	-0.029***	-0.035***	-0.035***	-0.039***
	(0.000)	(0.000)	(0.000)	(0.000)
Return on Assets	-0.369***	-0.359***	-0.335***	-0.330***
	(0.000)	(0.000)	(0.001)	(0.001)
Constant	0.343***	0.358***	0.101	0.127
	(0.000)	(0.000)	(0.216)	(0.141)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	1-digit SIC	1-digit SIC
Observations	1194	1194	1194	1194
Prob > F , Prob > Chi2	0.000	0.000	0.000	0.000
rho	-0.94	-0.93	0.94	-0.95
sigma	0.15	0.14	0.16	0.16
lambda	-0.14	-0.13	-0.15	0.15
Test of Independent Equations: P>chi2	0.000	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 6. The Effect of Sequence of Events – Does It Matter When the Banker Joins the Board?

The table presents the results for the leverage equation (Equation 7 in the text) from average treatment effects estimation for two different types of affiliated banker-directors. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Columns (3) and (4) include the interaction terms for banker-director tenure and ratio of plant, property and assets included as additional control variables. Tenure at Board is the number of years that the banker-director has served on the board. Firm Size is the natural logarithm of net sales. PPE is the plant, property, and equipment. R&D is research and development expenditures. Market-to-Book Ratio is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Return on Assets is EBITDA scaled by total assets. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. The control variables are lagged by one year. P-values are in parentheses.

	(1)	(2)	(3)	(4)
Banker Dummies				
Banker first gets board membership, then gives a loan	0.204***		0.216***	
	(0.000)		(0.000)	
Banker first gives a loan, then gets board membership		-0.327***		-0.343***
		(0.000)		(0.000)
Interaction Terms				
Tenure of the Banker on the Board	-0.002	0.014**	0.002	0.015
	(0.344)	(0.060)	(0.344)	(0.186)
Banker-Director Dummy * (PPE / Assets)	0.030	0.050	0.097	0.125
	(0.701)	(0.733)	(0.389)	(0.449)
Banker-Director Dummy * (PPE / Assets) * Tenure	-0.001	-0.001	-0.010**	-0.029
	(0.883)	(0.951)	(0.029)	(0.191)
Control Variables				
Firm Size	0.018***	0.020***	0.027***	0.028***
	(0.000)	(0.000)	(0.002)	(0.001)

PPE / Assets	0.077**	0.071***	0.055	0.056
	(0.014)	(0.020)	(0.242)	(0.209)
R&D / Assets	-0.122***	-0.118***	-0.135***	-0.146***
	(0.003)	(0.002)	(0.002)	(0.003)
Market-to-Book Ratio	-0.036***	-0.038***	-0.041***	-0.047***
	(0.000)	(0.000)	(0.000)	(0.000)
Return on Assets	-0.417***	-0.372***	-0.364***	-0.281*
	(0.000)	(0.000)	(0.001)	(0.059)
Constant	0.362***	0.372***	0.150*	0.175**
	(0.000)	(0.000)	(0.076)	(0.028)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	1-digit SIC	1-digit SIC
Observations	1194.000	1194.000	1194.000	1194.000
Prob > F , Prob > Chi2	(0.000)	(0.000)	(0.000)	(0.000)
rho	-0.92	0.87	-0.95	0.86
sigma	0.14	0.13	0.15	0.14
lambda	-0.13	0.11	-0.14	0.12
Test of Independent Equations: P>chi2	(0.000)	(0.000)	(0.000)	(0.000)

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 7. Summary Statistics for Loan Contract Terms and Mean Comparison Tests

The table presents the means for the main contract terms for the loan agreements that form the sample. All Drawn-in Spread is total annual spread (fees and interest) paid over LIBOR for each dollar drawn from the loan. Collateral is an indicator variable for pledge of collateral. Financial Covenants is an indicator variable for the inclusion of a financial covenant in the loan contract. Loan Maturity is maturity of the loan agreement in months.

Panel A. Differences in Means When Loans are Classified According to Banker-Director (Affiliated, or Unaffiliated) Presence

	Total Sample Mean	With Banker-director	With no banker-director	p-value for differences in means
Number of Observations	1,132	833	299	
Loan Size ($ million)	767	851	737	0.085*
Loan Size / Total Assets	0.36	0.07	0.07	0.361
All Drawn-in Spread	98.20	98.07	98.24	0.983
Collateral	0.14	0.13	0.14	0.935
Collateral #	0.30	0.32	0.30	0.635
Loan has Financial Covenants	0.65	0.64	0.66	0.510
Loan Maturity (months)	31.19	31.70	31.00	0.650

Panel B. Differences in Means When Loans are Classified According to Affiliated Banker-Director Presence

	Total Sample Mean	With Affiliated Banker-director	With Affiliated no Banker-director	p-value for differences in means
Number of Observations	1,132	1,017	114	
Loan Size	767	945	747	0.040*
Loan Size / Total Assets	0.07	0.07	0.07	0.821
All Drawn-in Spread	98.20	62.08	102.27	0.001***
Collateral	0.14	0.04	0.15	0.001***
Collateral #	0.21	0.11	0.32	0.008***
Loan has Financial Covenants	0.65	0.54	0.66	0.006***
Loan Maturity in Months	31.19	28.95	31.44	0.269

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.
- the difference in means test is conducted using the sub-sample of non-missing "secured" variable in the Dealscan Database.

Table 8. Probit Estimation Linking the Presence of a Banker-Director to the Presence of Collateral in Loan Contracts

The table presents the results from probit estimations of the inclusion of collateral (i.e., loans being secured against assets) in the loan contracts. Each unit of observation corresponds to a loan agreement. "Affiliated Banker-Director" is an indicator variable equal to one if there was bank representation on the board of directors of the borrower, and the represented bank was among the lead arrangers of the lending syndicate. "Unaffiliated Banker-Director" is an indicator variable equal to one if there were bank representation on the board of directors of the borrower, but the represented bank was not among the lead arrangers of the lending syndicate. Data on firm characteristics are obtained from Compustat Annual Industrial Database. Firm Size is measured as the logarithm of net sales. Total assets are the book value of total assets. Total debt is long-term debt plus short-term debt (debt in current liabilities). PPE is the net value of plant, property, and equipment. R&D is the research and development expenditures. Market-to-book ratio is the sum of book value of debt and market value of equity to total assets. Return on Assets is EBITDA/ Total Assets. Data on loan characteristics are from the Dealscan Database. Loan Price is the All Drawn-in Spread: the total annual spread (fees and interest) paid over LIBOR for each dollar drawn from the loan. Rating is equal to1 if A, 2 if B, 3 if C. No rating indicated that the firm debt is not rated. Loan maturity is the logarithm of maturity of the loan agreement in months. Number of lenders is the total number of lead and participant banks in the lending syndicate that originated the loan. Estimations are clustered at the firm level and include industry and year effects. P-values are in parentheses.

Panel A. Probit Analysis of Collateral Inclusion (Dependent Variable = 1 if Loan in Secured)

	(1)	(2)	(3)	(4)#	(5)#	(6)#
Banker Dummies						
Unaffiliated Banker-Director	0.042	0.016	0.017	0.082	0.021	0.015
	(0.336)	(0.576)	(0.337)	(0.312)	(0.804)	(0.827)
Affiliated Banker-Director	-0.106***	-0.063***	-0.019	-0.230***	-0.170*	-0.010
	(0.001)	(0.012)	(0.392)	(0.004)	(0.068)	(0.925)
Firm Characteristics						
Firm Size		-0.040***	0.000		-0.089**	0.028
		(0.000)	(0.997)		(0.014)	(0.474)
Total Debt / Market Value		0.421***	0.029		1.027***	0.231
		(0.000)	(0.602)		(0.000)	(0.348)
PPE / Assets		-0.021	-0.039		-0.089	-0.118

		(0.745)	(0.338)		(0.659)	(0.466)
R&D Expenditures / Net Sales		0.515**	0.399**		1.557**	1.516**
		(0.041)**	(0.021)***		(0.042)	(0.018)
Market-to-Book Ratio		0.020	0.006		0.040	0.049
		(0.225)	(0.561)		(0.442)	(0.275)
Return on Assets		-0.483**	-0.171		-1.283*	-0.536
		(0.054)	(0.296)		(0.056)	(0.377)
Loan Characteristics						
Loan Size / Total Assets			0.080			0.063
			(0.337)			(0.891)
Loan Price			0.001***			0.002***
			(0.000)			(0.000)
Loan Maturity			0.022***			0.087**
			(0.012)			(0.015)
Not Rated			-0.044**			-0.169
			(0.035)			(0.162)
Rating			-0.058***			-0.207**
			(0.005)			(0.017)
Number of Lenders			-0.001			-0.009***
			(0.487)			(0.002)
Number of observations	1112	1108	1006	500	497	469
Wald chi2	28.88	128.47	157.21	23.08	94.07	144.42
Prob > chi2	0.000	0.000	0.000	0.002	0.000	0.000
Pseudo R2	0.089	0.294	0.503	0.089	0.296	0.536

*,**,*** denote significance at 10 percent, 5 percent and 1 percent respectively.

- the probit estimation is conducted using the sub-sample of non-missing "secured" variable in the Dealscan Database.

Panel B. Probit Analysis of Financial Covenant Inclusion (Dependent Variable = 1 if Loan has Financial Covenants)

	(1)	(2)	(3)
Banker Dummies			
Unaffiliated Banker-Director	0.047	0.039	0.011
	(0.338)	(0.439)	(0.83)
Affiliated Banker-Director	-0.123*	-0.121*	-0.164**
	(0.085)	(0.096)	(0.021)
Firm Characteristics			
Firm Size		-0.055***	-0.063***
		(0.003)	(0.014)
Total Debt / Market Value		0.138	-0.140
		(0.238)	(0.367)
PPE / Total Assets		-0.214*	-0.209
		(0.089)	(0.117)
R&D Expenditures / Net Sales		-0.709*	-0.475
		(0.099)	(0.262)
Market-to-Book Ratio		0.009	0.018
		(0.759)	(0.542)
Return on Assets		-0.271	-0.575
		(0.464)	(0.203)
Loan Characteristics			
Loan Size / Total Assets			0.713
			(0.117)
Loan Price			0.000
			(0.283)
Loan Maturity			0.061***
			(0.002)
Not Rated			-0.499***
			(0.001)
Rating			-0.135***
			(0.014)
Number of Lenders			0.014***
			(0.000)
Number of obs	1131	1127	1023
Wald chi2	13.170	27.590	86.780
Prob > chi2	0.106	0.016	0.000
Pseudo R2	0.019	0.037	0.121

Table 9. OLS Regressions Linking Loan Prices to the Presence of Bankers on Boards

The table presents the results from OLS estimation of spreads over LIBOR. Each unit of observation corresponds to a loan agreement. Dependent variable is the All Drawn-in Spread: the total annual spread (fees and interest) paid over LIBOR for each dollar drawn from the loan. "Affiliated Banker-Director" is an indicator variable equal to one if there was bank representation on the board of directors of the borrower, and the represented bank was among the lead arrangers of the lending syndicate. "Unaffiliated Banker-Director" is an indicator variable equal to one if there were bank representation on the board of directors of the borrower, but the represented bank was not among the lead arrangers of the lending syndicate. Data on firm characteristics are obtained from Compustat Annual Industrial Database. Firm Size is measured as logarithm of net sales. Total assets are the book value of total assets. Total debt is long-term debt plus short-term debt (debt in current liabilities). PPE is the net value of plant, property, and equipment. R&D is the research and development expenditures. Market-to-Book ratio is the sum of book value of debt and market value of equity to total assets. Return on Assets is EBITDA/ Total Assets. Term premium is the 12-month average for the deal year of the yield differential between 10-year and 1-year U.S. T-bonds, and taken from the Federal Reserve Board. Data on loan characteristics are from the Dealscan Database. Rating is equal to1 if A, 2 if B, 3 if C. No rating indicated that the firm debt is not rated. Loan maturity is the logarithm of maturity of the loan agreement in months. Number of lenders is the total number of lead and participant banks in the lending syndicate that originated the loan. Estimations are clustered at the firm level and include industry effects. P-values are in parentheses.

	(1)	(2)	(3)
Banker Dummies			
Unaffiliated Banker-Director	7.025	3.910	3.133
	(0.723)	(0.781)	(0.817)
Affiliated Banker-Director	-42.249***	-27.866**	-21.065*
	(0.003)	(0.023)	(0.073)
Firm Characteristics			
Firm Size		-17.630***	-5.335
		(0.000)	(0.303)
Total Debt / Market Value		352.919***	290.582***
		(0.000)	(0.000)
PPE / Total Assets		-14.362	-14.401
		(0.585)	(0.560)
R&D Expenditures / Net Sales		59.504	31.126
		(0.418)	(0.591)
Market-to-Book Ratio		14.574***	14.581***
		(0.006)	(0.004)
Return on Assets		-148.354*	-87.347

		(0.076)	(0.229)
Market Conditions			
Credit Spread		39.378***	56.840***
		(0.005)	(0.000)
Eurodollar Rate		-4.247	-12.981
		(0.703)	(0.214)
Loan Characteristics			
Loan Size / Total Assets			-6.756
			(0.859)
Loan Maturity			13.181***
			(0.002)
Not Rated			-100.023***
			(0.000)
Rating			-54.433***
			(0.000)
Number of Lenders			-0.825
			(0.253)
Number of obs	1034	1030	1023
F	4.280	11.750	14.740
Prob > F	0.000	0.000	0.000
R2	0.136	0.443	0.503

*,**,*** denote significance at 10 percent, 5 percent and 1 percent respectively.

Table 10. Simultaneous Equations Estimation Linking Collateral Presence, Loan Prices, Maturity and Leverage to the Presence of Bankers on Boards

The table presents the results from three-stage estimation of dependent variables. Each unit of observation corresponds to a loan agreement. Dependent variables are inclusion of collateral, the All Drawn-in Spread: the total annual spread (fees and interest) paid over LIBOR for each dollar drawn from the loan, loan maturity and leverage ratio. "Affiliated Banker-Director" is an indicator variable equal to one if there was bank representation on the board of directors of the borrower, and the represented bank was among the lead arrangers of the lending syndicate. "Unaffiliated Banker-Director" is an indicator variable equal to one if there were bank representation on the board of directors of the borrower, but the represented bank was not among the lead arrangers of the lending syndicate. Data on firm characteristics are obtained from Compustat Annual Industrial Database. Firm Size is measured as logarithm of net sales. Total assets are the book value of total assets. Total debt is long-term debt plus short-term debt (debt in current liabilities). PPE is the net value of plant, property, and equipment. R&D is the research and development expenditures. Market-to-Book ratio is the sum of book value of debt and market value of equity to total assets. Return on Assets is EBITDA/ Total Assets. Earnings variability is the standard deviation of earnings increase/decrease over the previous five years scaled by average assets over the previous five years. Term premium is the 12-month average for the deal year of the yield differential between 10-year and 1-year U.S. T-bonds, and taken from the Federal Reserve Board. Data on loan characteristics are from the Dealscan Database. Rating is equal to1 if A, 2 if B, 3 if C. No rating indicated that the firm debt is not rated. Loan maturity is the logarithm of maturity of the loan agreement in months. Number of lenders is the total number of lead and participant banks in the lending syndicate that originated the loan. Estimations are clustered at the firm level and include industry effects. P-values are in parentheses.

	Collateral Presence	Loan Prices	Maturity	Leverage
Banker Dummies				
Unaffiliated Banker-Director	0.059**	132.863***	0.184**	
	(0..021)	(0.008)	(0.023)	
Affiliated Banker-Director	-0.079**	-113.470**	-0.249**	
	(0.013)	(0.016)	(0.013)	
Firm Characteristics				
Firm Size	-0.042***	-138.324***	-0.095***	0.005
	(0.000)	(0.000)	(0.008)	(0.283)
Total Debt / Market Value	1.454	0.001***	0.322	
	(0.000)	(0.003)	(0.501)	
PPE / Total Assets	-0.068			0.107***
	(0.176)			(0.000)
R&D Expenditures / Net				-0.212**

Sales				
				(0.035)
Market-to-Book Ratio	0.091***	56.623**	-0.022	-0.065
	(0.000)	(0.021)	(0.640)	(0.000)
Return on Assets				0.518
				(0.000)
Earnings Variability	0.000	-0.340	0.000	
	(0.616)	(0.358)	(0.587)	
Asset Maturity			0.002	
			(0.502)	
Market Conditions				
Credit Spread		-1397.952		
		(0.009)		
Eurodollar Rate		355.951***		
		(0.007)		
Loan Characteristics				
Collateral		334.350**	-2.083***	
		(0.022)	(0.000)	
Maturity	-0.151***	-1566.454***		
	(0.000)	(0.000)		
Not Rated	-0.164***	-556.729***	-0.867***	
	(0.000)	(0.001)	(0.001)	
Rating	-0.129***	-398.420***	-0.575***	
	(0.000)	(0.000)	(0.000)	
Number of Lenders	0.001	11.558***	0.007**	
	(0.427)	(0.003)	(0.047)	
Loan Amount / Assets	0.060	659.028***	0.779**	
	(0.671)	(0.003)	(0.046)	
Constant	0.572**	7366.503***	5.075***	0.360***
	(0.022)	(0.001)	(0.000)	(0.000)
Number of obs	1017	1017	1017	1017
F	386.980	158.800	76.540	1,200.780
Prob > F	0.000	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

CHAPTER 3

Impact of Banker-Directors on Investment Decisions:

Evidence from Acquisitions

Summary: This chapter investigates whether the conflicts of interest between shareholders and creditors lead to value-destroying acquisition activities in the presence of a commercial bank executive on the board of directors of a non-financial corporation. With a sample of 847 acquisition decisions undertaken by the 403 corporations that were included in the S&P 500 Index between 2002 and 2004, the analyses of the chapter do not find any evidence for value-destroying acquisition decisions when a creditor is represented on the board of directors: (i) Presence of a commercial bank executive on a board does not lead to excessive acquisition activity; (ii) The acquirers that utilize the services of a commercial banker on their boards diversify more, but this diversification effect belongs only to the unaffiliated bankers; (iii) Affiliated bankers (creditors) are not associated with acquisitions that diversify the company's operations, and (iv) The analyses of shareholder wealth effects of acquisition announcements reveals that a banker's presence on a board does indeed improve the shareholder value. Commercial bankers, when serving on boards of directors, seem to act in a prudent manner and protect shareholder interests when deciding on acquisitions, and shareholders value the presence of a representative from the creditor community. The added value of the commercial bankers is possibly due to the monitoring role that they perform when they serve on boards of directors in order to protect the value of their claims with the company.

1. Introduction

This chapter investigates the effects of a commercial bank executive serving on the board of directors of a non-financial corporation on a class of major investment decisions: acquisitions by that corporation. The board of directors is a key institution to mitigate the agency problems among the management, the shareholders, and the creditors surrounding major investment decisions.

When the CEO brings an investment proposal to the attention of the board, the board has a fiduciary duty to decide in favor of the investments that would enhance shareholder value. However, if a representative from the creditor community is present on the board of directors of the company, the board may have an inclination to protect the interests of the creditors, which may diverge from the interests of the shareholders (Jensen and Meckling, 1976). On the other hand, as experts in information gathering and processing, banks would be able to mitigate information problems by screening out bad investment proposals and selecting value-enhancing investment projects (Diamond, 1991). Thus, services provided by bank executives on boards should help companies to engage in good investment decisions and enhance shareholder wealth.

The main research question in this chapter is whether the presence of a commercial bank executive on the board of the acquiring company hurts the

shareholders of that company. This is an unexplored question in the literature.[1] I study the 847 acquisitions announced and completed between 2002 and 2004 by the 403 non-financial companies that were included in the S&P 500 Index in 2002. Among these acquisitions, 190 (22.43 percent) were undertaken by companies that utilized the services of a commercial bank executive serving on their board of directors, and of these 190 transactions 83 (9.80 percent of the total) involved a creditor to the company serving on the board of directors of an acquirer (Table 1).

It has been argued in the literature that the presence of shareholder-creditor conflicts may lead to excessive acquisition decisions. Accordingly, I first examine whether the presence of a commercial banker on the board of directors of a company is associated with a change in the intensity of the acquisition activities by that company. The findings suggest that the commercial banker presence on a board in fact is associated with a lower probability that a company would engage in an acquisition, and also with less frequency of acquisitions.

Even though creditor representation on a board does not lead to an intensified acquisition activity, once an acquisition decision is made, it may be of a value-destroying type for the shareholders of the acquirer. In order to alleviate this concern, I analyze whether a banker's presence on a board is correlated with more diversifying acquisitions. The analysis of the diversification decisions is

[1] Guner, Malmendier, and Tate (2006) investigate the presence of investment bank executives on acquirer boards, and find that their presence are associated with a decrease in shareholder wealth following acquisition announcements.

appropriate for the purposes of this study for two reasons. First, Morck, Shleifer, and Vishny (1990) show that the returns to bidding shareholders are lower in the case of diversifying acquisitions. Second, creditors would favor diversifying acquisitions, which would reduce the overall risk of the company (see Bharadwaj and Shivdasani, 2001). The types of acquisitions that would be most detrimental to shareholder value and beneficial to the creditor community would thus be the acquisitions that diversify a company's operations. Galai and Masulis (1976) show that in a non-synergistic merger, the increase in bondholder wealth comes from a decrease in stockholder wealth.

I define an acquisition to be "diversifying" if the two-digit SIC code for a target company is different from that of an acquiring company. Of the 847 acquisitions that form the sample, 45.3 percent are diversifying. As predicted, when a company utilizes the services of a commercial banker on its board, it undertakes acquisitions that diversify its operations with a higher probability. However, this result is associated with the unaffiliated banker-directors only – i.e., the directors who are the executives of non-creditor banks. The affiliated banker-directors, however, are not associated with more diversification activity. These results indicate that a creditor, once she accepts a directorship on a board, acts prudently in the interest of shareholders.

Last, I analyze the direct effects of creditor representation on boards of directors on shareholder value within an event study methodology. I calculate the abnormal stock market returns around the acquisition announcement dates and test whether the presence of bankers on boards of directors of the acquiring companies has any detrimental effects on the shareholder value. The results indicate that the presence of a commercial banker on the board of an acquirer is associated with a statistically significant 0.03 percentage increase in the abnormal returns on the day of the acquisition announcement. Given that the mean abnormal return for the announcement day is –0.11 percent for the full sample of acquisitions, the commercial bank presence on boards is associated with relatively favorable shareholder reaction to an acquisition decision. The effects of unaffiliated banker-directors and affiliated banker-directors on shareholder value are similar; both types of bankers have a positive effect on shareholder value.

The chapter proceeds as follows: Section 2 motivates the study. Section 3 presents the data and the summary statistics. Section 4 studies the acquisition activity and types of acquisitions. Section 5 analyzes the shareholder wealth effects of acquisition decisions in the presence of a banker on an acquirer's board of directors. Section 6 concludes.

2. Motivation

Banks play a key role in providing advisory services during acquisitions. As advisors, they use their information gathering capabilities to calculate the reservation price for the target firms, to evaluate the potential gains from synergies between operations of acquirers and targets, and to analyze the risks associated with the merger transactions. It is often discussed that as experts in information gathering and processing, banks would be able to mitigate information problems by screening out bad investment proposals and selecting value-enhancing investment projects (Boyd and Prescott, 1989; Diamond, 1991). If that is the case, advisory services provided by banks should help companies to engage in good acquisitions that would contribute to the shareholder value.

But what happens if the advising bank has at the same time a lending relationship with the acquiring company?[2] The advice provided by a lending bank might not serve the best interests of the shareholders of the acquiring companies owing to the embedded conflict of interest between shareholders and creditors (Jensen and Meckling, 1976). For example, shareholders would prefer the company to undertake acquisitions that increase the risk of the company such as

[2] In some instances, the lending relationship is established automatically during the course of the acquisition as banks provide the requisite financing to the acquirer in addition to their advisory services. For example, advisory banks may provide bridge financing that would allow the acquirer to "buy now and pay later," or they may ultimately finance the acquisition by issuing securities or securing loan agreements. In other instances, companies choose to work with banks that have already extended loans to them. In fact, implicit or explicit promises to finance the merger transactions affect the odds that a bank will be hired to provide advisory services. Allen, Jagitani, Peristiani and Saunders (2004) show that if the acquiring firm has a lending relationship with a commercial bank, then the acquirer is more likely to utilize that bank as its financial advisor.

non-diversifying acquisitions and acquisitions of high-growth targets, because they can capture the upside benefits of these acquisitions, while they are shielded from large losses associated with downside risks.

By contrast, risky debt benefits from a reduction in the probability of default, and creditors would prefer acquisitions that provide coinsurance benefits.[3] Accordingly, creditors would favor an acquisition that diversifies that firm's operations in order to decrease the volatility of firm's cash flows and enhances the value of the debt claims. Kose, Litov and Yeung (2007) show that reliance on bank financing is associated with less risk taking in corporate investments for a sample of U.S. firms. In the extreme case, when an acquiring company is near financial distress, the advising bank might have a self-interest to complete an acquisition that is unattractive as an investment, but would help access to free cash flow from the acquired company. As a result, advisory banks could compel the firms to engage in acquisitions that might be detrimental to shareholder value if they also finance the firm's operations. The call options pricing model (Black and Scholes, 1973) demonstrates that the adoption of projects that reduce the firm's risk (variance of cash flows) may adversely affect shareholders for the benefit of debt-holders. Supporting evidence for acquisitions is provided by Galai and Masulis (1976), who

[3] Coinsurance effect refers to the situations when firms with imperfectly correlated earnings combine and derive a combined earnings stream that is less volatile than either of the individual firm's earnings stream.

illustrate that in a non-synergistic merger, the increase in bondholder wealth comes from a decrease in stockholder wealth.

In addition to the conflicts between shareholders and creditors, shareholder value for acquiring firms could also shrink due to conflicts of interest between the shareholders and the CEO if CEOs pursue their own personal objectives during mergers. For example, managers might have empire-building motives, and in order to assure the continuity and growth of the firm they might try to enter new lines of businesses and diversify excessively (Donaldson and Lorsch, 1983). In line with the empire-building argument, Schoar (2002) shows that there are productivity increases in acquired plants when firms undertake diversifying acquisitions, but the productivities of the existing plants of the acquirer decline, and the net effect is a decline in productivity.

In addition to empire building motives, managers of acquiring companies might be interested in diversifying their human capital risk. Since the risk associated with a CEO's income is closely linked to firm risk through profit-sharing schemes, bonuses, and stock options granted, she would have a strong interest in decreasing the volatility of firm's earnings. Amihud and Lev (1981) show that CEOs find it beneficial to engage in diversifying acquisitions in order to decrease their undiversifiable employment risk (also see Amihud and Kamin, 1979; Lloyd, Hand, and Modani, 1987, Amihud et al., 1991). Such mergers would only

create a cost for shareholders without any benefits, because shareholders themselves can achieve their desired level of risk through portfolio diversification.

As discussed above, shareholders of the companies suffer from a multitude of conflicts of interests during mergers. Both shareholder-creditor conflicts and shareholder-manager conflicts might translate into losses in shareholder value for the acquiring firms. Furthermore, in acquisitions that are susceptible to both types of conflicts, the negative effects on shareholder value might be amplified. The free-cash flow hypothesis (Jensen, 1986) predicts that firms with abundant cash flows are more likely to engage in value-destroying acquisitions, rather than returning excess cash flows to shareholders (also see Lang, Stulz, and Walking, 1991). Bharadwaj and Shivdasani (2001) show that the acquisitions financed by bank debt are similar to acquisitions financed by financial slack: They are equally likely to involve diversifying acquisitions. The evidence presented in these studies hints that the CEOs and creditors have similar interests in acquisitions, which might not be value-enhancing for shareholders.

The core corporate governance mechanism to mitigate these conflicts during acquisitions and preserve shareholder value is the monitoring done by the board of directors of the acquiring company. Since the board directly participates in merger decisions either by advising or by voting, a well-functioning board would have the ability to initiate acquisitions that are valuable to the shareholders and also

to prevent acquisitions that are detrimental. Clearly, some boards would be more able to do so. When it comes to alleviating the conflicts between CEO and shareholders, boards that are independent of the CEO influence would be more empowered to act on behalf of the shareholder. Boards that have representatives from the creditor community, on the other hand, might be more inclined to protect creditor interests.

To summarize, the decision to undertake an acquisition can be described as an agency problem between the CEO of the corporation and the shareholders plus a conflict of interest between shareholders and creditors. In principle, monitoring performed by the board of directors of the company could alleviate these problems. When the CEO brings an acquisition proposal to the attention of the board, the board has a fiduciary duty to decide for acquisitions that would enhance shareholder value and to decide against opportunistic acquisitions by the CEO. However, if a representative from the creditor community – a banker-director -- is present on the board of directors of the company, the board may have an inclination to protect the interests of the creditor community. In such an instance, the interests of the banker-director and the CEO would be aligned, and would diverge from the interests of the shareholders in the sense that both would prefer acquisitions that diversify the risk of the company.

3. Data and Summary Statistics

The sample consists of all completed acquisitions undertaken by the 403 non-financial companies that belong to the S&P 500 Index in 2002 with announcement dates and effective dates between January 1, 2002, and December 31, 2004. The acquisitions are identified as those in the domestic Mergers and Acquisitions database of Securities Data Company, and include both public and private targets.[4] There are a total of 847 acquisition observations (Table 1). Of these 847 acquisitions, 190 (22.43 percent) involved an acquirer that was utilizing the services of at least one commercial bank executive on its board of directors at the time of the acquisition, and of these 190 transactions 83 (9.80 percent of the total) had an affiliated banker-director (creditor) on their boards.

Table 2 reports the means of the acquisition characteristics for the entire sample of 847 acquisitions and for the sub-samples stratified by banker-director presence on an acquiring company's board of directors. In Panel A, companies with at least one commercial banker on their boards are compared to the companies with no commercial banker on their boards, irrespective of their affiliation status. In Panel B, comparisons are made with respect to whether there is an affiliated banker on the board or not.

The results presented in Panel A indicate that acquirers that have a bank executive on their boards are relatively larger and have lower market-to-book

[4] The acquisitions that are classified as "repurchases" in the ADC M&A database are excluded from the sample (354 deals).

ratios. They also hold more debt. There are no significant differences in the stock market returns between the two groups of acquirers; however, acquirers with a banker-director have more volatile stock returns. The two groups do not differ in terms of managerial ownership.

One observation is that a banker's presence on an acquirer's board is more common when acquirers have relatively low financial slack. The ratio of cash and marketable securities to total assets is 16 percent when there is no commercial banker on board as opposed to 7 percent when there is banker presence on an acquirer's board. Despite the significant differences in how much financial slack the acquirers have, the method of payment for the acquisition is not different among firms those have a banker on their boards and those who do not. 31.6 percent of the acquisitions that were undertaken when a banker was present on a board were entirely financed by cash. The ratio of acquisitions that were entirely financed by cash was 32 percent when there was no commercial banker on the board of the acquirer. The differences in the amount of debt in capital structure may reconcile the above results. On average, a company with a commercial banker on its board holds significantly more debt (23.1 percent of total assets) than a company with no commercial banker on its board (19.2 percent of total assets).

In Panel B, the summary statistics and the mean comparison tests are provided for firms with and without an affiliated banker-director present on their

boards. The results are similar to the ones presented in Panel A. The firms with a banker-director have significantly more debt and less financial slack and are less volatile.

4. Banker-Directors and Acquisition Activity

4.1. Do firms engage in more acquisitions if they have bankers serving on their boards?

It has been argued in the literature that creditors may influence companies to engage in excessive acquisition activity. This section examines whether the presence of a banker on the board of directors of a company has any effects on the probability that the company would engage in an acquisition, and on the frequency of acquisitions. The acquisition activity is measured in three ways:

i. An indicator variable that equals one if the firm undertook at least one acquisition between 2002 and 2004 (acquisition dummy variable);

ii. The number of acquisitions done by the company between 2002-2004 (acquisition count); and

iii. The ratio of the acquisition value to the firm size (acquisition relative value).

Table 3 summarizes the acquisition activity for the 403 firms in the sample between 2002 and 2004 (1209 firm-year observations). Univariate statistics do not reveal any increase in acquisition activity when a banker serves on a company's board (Table 1, Panel B). If anything, the presence of a commercial banker (affiliated, or unaffiliated) is associated with less acquisition activity. During 2002-2004, companies with no banker-director on their boards engaged in 0.63 acquisitions amounting to 6 percent of their total assets. On the other hand, companies with at least one banker-director on their boards engaged on average in 0.49 acquisitions amounting to 3 percent of their total assets. Comparisons between affiliated banker-director presence reveal a similar pattern. Companies with no affiliated banker-director on their boards engaged in 0.60 acquisitions amounting to 5 percent of their total assets. Companies with an affiliated banker-director on their boards engaged in fewer acquisitions: 0.51 acquisitions amounting to 3 percent of their total assets. However, the differences in means for affiliated banker-director presence are not statistically significant.

Next, I analyze the relation between banker-director presence and the intensity of acquisition activity within a multivariate setting, controlling for the other possible determinants of acquisition activity: size, market-to-book ratio, cash ratio, capital expenditures ratio, leverage ratio, shareholder rights, and managerial incentives. Acquisition activity is measured by the ratio of the total acquisition value in a given year to the firm's total assets. Firm size is measured by the

logarithm of net sales. Cash ratio is the amount of cash and marketable securities scaled total assets. Leverage ratio is total debt (short-term plus long-term debt) scaled by total assets. Shareholder rights are proxied by the governance index (G-index), which equals the number of governance provisions that a firm has (Gompers, Ishii, and Metrick, 2003). Managerial incentives are proxied by the executive ownership of firm's stock. All regressions control for self-selection, following the Heckman (1978) procedure.

The results from the multivariate analysis of acquisition activity are consistent with those from univariate analysis. Table 4 reports the results when the acquisition activity is measured as the ratio of acquisition value to the firm's total assets.[5] The presence of a commercial bank executive on board is associated with less acquisition activity. The coefficient on the banker-director dummy is statistically and economically significant at the 95 percent confidence level.

4.2. Do firms engage in diversifying acquisitions with increased frequency if they have bankers serving on their boards?

The previous section showed that a banker's presence on board of directors does not lead to excessive acquisition activity. However, one may argue that even though creditor representation on a board does not lead to more acquisitions, once

[5] Similar results are obtained when acquisition activity is measured with an acquisition dummy, or with an acquisition count.

an acquisition decision is made, it may be more value-destroying for the shareholders. In this section, I analyze whether a banker's presence on a board is correlated with more diversifying acquisitions. I look at diversification decisions, because it had been widely argued in the literature that diversifying acquisitions are value-destroying (see Morck, Shleifer, and Vishny, 1990). As has been discussed in the motivation section, creditors are expected to be more in favor of diversifying acquisitions, which would reduce the overall risk of the company. In line with this prediction, Bharadwaj and Shivdasani (2001) show that the acquisitions financed by bank debt are similar to acquisitions financed by financial slack:[6] They are equally likely to involve diversifying acquisitions.

I define an acquisition to be "diversifying" if the two-digit SIC code for a target company is different from that of an acquiring company. In other words, an acquisition is classified as diversifying if it extends an acquirer's business to an unrelated industry (Morck et al. 1990). Of the 847 acquisitions undertaken by the sample companies between 2002 and 2004, 45.3 percent are diversifying (see Table 2). As predicted, the ratio of diversifying acquisitions are higher at 47.9 percent when there is a banker on a board, and 53 percent when there is a creditor on a board, but the differences are not statistically significant.

[6] The free-cash flow hypothesis (Jensen, 1986) predicts that firms with abundant cash flows are more likely to engage in value-destroying acquisitions, rather than returning excess cash flows to shareholders (also see Lang, Stulz, and Walking, 1991).

In Table 5, I analyze the correlation between banker presence and diversification decisions within a multivariate framework. In Panel A, the dependent variable is a an indicator variable that takes the value "one" if the two-digit SIC code for a target company is different from that of an acquiring company. The effect of commercial bankers, unaffiliated bankers, and affiliated bankers are estimated individually because the regressions control for sample selection. In Column 1, I estimate the effects of the commercial banker presence without differentiating between bankers who are the actual creditors of the acquiring companies and bankers who are not. The results indicate that when a company utilizes the services of a commercial banker on its board, it undertakes acquisitions that diversify its acquisitions with a higher probability (coefficient=0.536). Column II presents the results for the effects of unaffiliated commercial bankers: The presence of an unaffiliated banker is positively associated with diversification activity (coefficient=0.495). Finally Column III presents the results for affiliated banker-directors. Unlike unaffiliated bankers, affiliated banker-directors are not associated with more diversification activity. The coefficient on the affiliated banker dummy is insignificant at 0.283.[7]

[7] The model is estimated within a linear regression framework despite the (0,1) dependent variable in the structural equation following the Heckman (1978) procedure. If the structural equation is estimated with a probit regression, model convergence is not achieved.

In Panel B, I use the ratio of acquired assets to the market value of the acquirer if the acquisition is diversifying,[8] and zero if the acquisition is not diversifying. This alternative measure is intended to capture the magnitude of the diversification activity. The results are in line with the previous ones: While the presence of an unaffiliated commercial banker on a board is associated with more diversification, the presence of an affiliated banker on a board is not[9].

The results from the analyses in this section can be summarized as follows: Despite the conflicts of interests between the shareholders and creditors of a company, a creditor's presence on a company's board of directors does not lead to excessive acquisition activity or to more diversification, which may distort shareholder value. When a bank executive assumes the conflicting roles of being a creditor and being a shareholder representative concurrently, she seems not to forego shareholder protection. It should be emphasized, however, that shareholder protection need not to come at the expense of the creditors. The bank executives self-select themselves into companies where they expect the shareholder-creditor conflicts to be low (Kroszner and Strahan, 2001).

5. Banker Presence on Boards and Shareholder Wealth Effects of Acquisition Activities

[8] The market value of the acquirer is calculated pre-acquisition.
[9] The model is estimated within a linear regression framework. The dependent variable in the structural equation is censored from below, and should ideally be estimated within a Tobit framework, but convergence is not achieved for Tobit estimation.

This section discusses the effects of creditor presence on boards on shareholder value within an event study methodology. I calculate the abnormal stock market returns around acquisition announcement dates and test whether the presence of bankers on boards of directors of the acquiring companies matter.

To calculate the abnormal stock returns associated with the acquisition announcements, I use the Eventus software. For each acquisition announcement as identified in the SDC database, a single-factor market model regression is computed over the period that starts 210 days prior to the announcement and ends 60 days before the announcement:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad (1)$$

where R_{it} is the return on common stock of firm i on day t, and R_{mt} is the return of the CRSP's equally-weighted market index for day t. This index is composed of every security on the NYSE, AMEX, and NASDAQ. The parameter βi measures the sensitivity of R_{it} to the movements in the market index. Given this market model, the abnormal return for stock I on day t (A_{it}) is calculated as the residual from the predicted value:

$$Ait = R_{it} - (a_i + b_i R_{mt}) \quad , \quad (2)$$

where a_i and b_i are the ordinary least squares estimates of α_i and βi respectively. The cumulative abnormal return (CAR) over the period T_1, T_2 is

$$CAR[T_1, T_2] = \sum_{i-1}^{N} \sum_{t=T_1}^{T_2} A_{it} \qquad (3)$$

CARs calculated over alternative event windows are the main variable used to measure the shareholder wealth effects surrounding the acquisition announcements in this study.

The test statistics are calculated following Patell (1976), which is a standardized abnormal return test. Under the null hypothesis, each A_{it} has mean zero and variance $\sigma^2_{A_{it}}$. The maximum likelihood estimate for the variance is

$$s^2_{A_{it}} = s^2_{Ai}\left[1 + \frac{1}{M_i} + \frac{(R_{mt} - \overline{R_{mEst}})^2}{\sum_{k=E_1}^{E_2}(R_{mk} - \overline{R_{mEst}})^2}\right], \qquad (4)$$

where $s^2_{A_i} = \frac{\sum_{k=E_1}^{E_2} A^2_{it}}{M_i - 2}$.

R_{mt} is the observed return on the market index on day t, $\overline{R_{mEst}}$ is the mean market return over the estimation period, and M_i is the number of non-missing trading days over the interval E1,E2 used to estimate the parameters for firm i. The standardized abnormal return would then be defined as

$$SAR_{it} = \frac{A_{it}}{s^2_{A_{it}}} \quad (5)$$

Under the null hypothesis, SAR_{it} follows a Student's t distribution with M-2 degrees of freedom.

5.1. Univariate Analysis

In Table 6, I report the cumulative abnormal returns (CARs) for the full sample and for cross sections of the sample based on banker presence on board of directors of the acquiring company. The CARs are calculated over four different announcement periods:

(i) CARs from day –1 to day 0,

(ii) CARs from day –1 to day +1,

(iii) CARs from day –1 to day 30,

(iv) CARs from day –7 to day 7.

The first two periods (i) and (ii) quantify the initial shareholder reaction to the acquisition announcements, and the last two periods (iii) and (iv) intend to quantify the shareholder reaction to the acquisition announcements in the longer-term.

The results for the full sample of acquisitions reveal that the initial shareholder reaction to the acquisition announcements is insignificant. The CARs average at –0.11 percent on the announcement days, and at –1.79 percent for the announcement months. The negative returns for acquirers following the acquisition announcements are in line with the previous findings (Andrade, Mitchell, and Stafford, 2001).

The main point of interest is the differences in cumulative abnormal returns when there is a banker on the board of an acquirer and when there is not. The last three columns in the tables test for the differences in the mean CARs. In Panel A, the data are stratified according to the commercial banker presence on a board, without differentiating between creditors and non-creditors. The results show that on the day of the acquisition, the average abnormal return is positive at 0.23 percent for the acquirers that have a commercial bank executive serving on their board of directors. The average abnormal return on the day of the acquisition for acquirers with no banker presence on their boards is negative at –0.20 percent. The difference in means is significant at five percent. During the two weeks surrounding the acquisition decision, the acquirers with a banker-director have an average abnormal return of –0.31 percent, and the acquirers with no banker-director have an average abnormal return of –1.37 percent. The difference is significant at ten percent. Finally, during the month of the acquisition, acquirers with a banker-director have an average abnormal return of –1.24 percent, while

acquirers with no banker-director have a more negative average abnormal return of –1.94 percent. However, the difference in means is not significant for the one-month window.

In Panel B, the data are stratified according to the creditor presence on a board. These are the banker-directors that would have the severest conflicts of interest when voting on the acquisition decisions. The results show that on the day of the acquisition, the average abnormal return is positive at 0.52 percent for the acquirers that have a creditor serving on their board of directors. The average abnormal return on the day of the acquisition for acquirers with no creditor presence on their boards is negative at –0.17 percent. The difference in means is significant at one percent. During the two weeks surrounding the acquisition decision, the acquirers with a creditor serving on their boards have zero average abnormal return, and the acquirers with no creditor on their boards have an average abnormal return of –1.28 percent. The difference is significant at five percent. Finally, during the month of the acquisition, acquirers with a creditor serving on their boards have zero average abnormal return, while acquirers with no banker-director have a more negative average abnormal return of –1.92 percent. Again, the difference in means is not significant for the one-month window.

Finally, the data are stratified according to the investment banker presence on a board in Panel C. The investment bankers serve as a control group in the

study. These directors are the executives of stand-alone investment banks that do not engage in any lending, and their services would be in terms of financial advice during the acquisitions, and they would not be in conflict with the shareholders as a creditor would be at the time of the acquisition decision. The results form the comparison of mean tests indicate that there are no differences in cumulative abnormal returns for acquirers that have an investment banker on their boards and for acquirers that do not have an investment banker on their boards.

The results from the univariate analyses show that the positive effects of banker presence on boards are associated with commercial banks, and mostly with commercial banks that are the creditors of the acquiring companies, despite the feared conflicts of interest between the shareholders and creditors.

5.2 Multivariate Analysis

In this section, I perform a multivariate analysis of the cumulative abnormal returns, controlling for the variables that potentially influence the shareholder wealth effects surrounding the acquisition announcements. The main equation of interest is

$$Y_i = \beta_0 + \beta_1 X_i + \beta_2 D_i + \varepsilon_i , \qquad (6)$$

where Y_i is the cumulative abnormal return for firm i, X_i is the set of firm-specific and deal-specific control variables that influence abnormal returns, and D_i is a

dummy variable indicating the presence of a bank executive on the company's board of directors.

Control Variables

The first set of variables control for the acquirer firms' characteristics and include the acquirer size, growth opportunities, leverage ratio, and stock returns. Firm size is defined as the natural logarithm of the net sales of the acquirer. I include firm size as a control variable, because it has been shown that the shareholder reaction to announcements is greater for smaller firms (Bajaj and Vijh, 1995). Growth opportunities is defined as the market-to-book ratio. Leverage ratio is measured as total debt over total assets of the company. Finally, the performance of the acquiring company is measured by the stock return over the year preceding the acquisition activity.

The second set of control variables relates to the deal-specific characteristics: The method of payment, and whether the acquisition is diversifying or not. I include the method of payment (stock versus cash deal), because there is empirical evidence that cash offers are characterized by insignificant abnormal returns, whereas acquisitions financed by stock are characterized by significantly negative returns (Travlos 1987; Wansley, Lane and Yang, 1987; Franks, Harris and Mayer, 1988). The method of payment is specified by an indicator variable that takes the value one if the acquisition deal is entirely

financed by cash and zero otherwise. The regressions also include an indicator variable that equals one if the primary industry of the acquiring company as specified by the 2-digit SIC codes is different than that of the target company.

The last set of control variables proxy other governance mechanisms that may influence the shareholder wealth and include managerial equity ownership at the acquiring company, governance index, and board characteristics. Datta, Iskandar-Datta, and Raman (2001) document a strong positive relation between acquiring managers' equity-based compensation and merger performance. Also, Amihud, Lev, and Travlos (1990) show that in corporate acquisitions, the larger is the managerial ownership fraction of the acquiring firm, the more likely is the use of cash financing.[10] The managerial ownership is measured by the percentage of common stock held by an acquiring company's management. The overall corporate governance quality of the acquirer is proxied by the G-index. The board characteristics that enter the analysis include the board size and the ratio of independent directors on an acquirer's board of directors. Finally, all regressions control for year and industry effects.

5.2.1. Self-selectivity model

[10] The rationale is that CEOs do not want to dilute their control. According to the free cash flow hypothesis (Jensen, 1986), CEOs that value control will prefer to finance merger activities by cash or debt rather than issuing new stock, which would dilute their holdings and increase the risk of losing control.

The primary variable of interest in equation (1) is the indicator variable for the presence of a bank executive on an acquiring company's board of directors. The potential endogeneity between the banker presence on an acquirer's board and shareholder wealth effects as summarized by the cumulative abnormal returns would cause the OLS estimations of equation (1) to be inconsistent. The main concern for endogeneity in this study arises from the fact that companies self-select themselves into utilizing a bank executive on their boards, and at the same time the factors that determine the banker presence on a board of an acquirer are correlated with the factors that determine the acquirer CARs.

To account for the self-selection problem, I use the self-selectivity model (Heckman, 1978) described in detail in Chapter 2. The empirical model is summarized by the following system of equations:

$$Yi = \beta_0 + \beta_1 X_i + \beta_2 D_i + \varepsilon_i \qquad (7a)$$

$$D_i^* = \delta Z_i + u_i \qquad (7b)$$

$$D_i = 1 \quad \text{if} \quad D_i^* > 0$$

$$D_i = 0 \quad \text{if} \quad D_i^* < 0$$

Y_i is the cumulative abnormal return for firm i, X_i is the set of firm-specific and deal-specific control variables that has been listed formerly. D_i is an endogenous dummy variable indicating whether the acquirer had a bank executive serving on its board when an acquisition announcement was made. The binary decision to employ a bank executive on board of directors is modeled as an outcome of an unobserved latent variable, D_i^*. Z_i is a set of characteristics that affect the acquirer's decision to have a banker-director, and they correspond to the variables explained in Chapter 2.[11] The individual error terms, ε_i and u_i, are assumed to have a bivariate normal distribution:

$$\varepsilon_i \sim N(0,\sigma)$$

$$u_i \sim N(0,1)$$

$$corr(\varepsilon_i, u_i)=\rho .$$

The parameters of the model are estimated by full information maximum likelihood method (Maddala, 1983; Greene, 1980; Greene, 1995a).

Table 7 presents the results from the multivariate estimation. The observed CARs and banker-presence are endogenous outcomes, as the p-values for the test of independent equations indicate; thus the self-selectivity model is the right model

[11] Determinants of Bank Representation on Board of Directors of Non-Financial Companies

to employ in analyzing the association between banker presence on boards and acquisition activity outcomes.

I estimate the model for short-term (Panels A, B and C) and for long-term cumulative abnormal returns (Panel D). In Panel A, the dependent variable is the abnormal returns measured on the day of the acquisition announcement – CAR(-1,0). In Column 1, I analyze the effects of commercial bank presence on boards in general, without differentiating between a creditor banks and non-creditor banks. The results indicate that the presence of a commercial banker on the board of an acquirer is associated with a 0.03 points increase in the abnormal returns on the day of the acquisition announcement, and this increase is significant at the 5 percent level. Given that the mean abnormal return for the announcement day is –0.11 percent for the full sample of acquisitions, commercial bank presence on board is associated with favorable shareholder reaction to an acquisition decision. Among other variables that affect the shareholder reaction are the executive ownership of the firm's common stock and the ratio of independent directors. Both variables affect shareholder returns positively, as predicted.

The results reported in Column 2 and Column 3 analyze the effects of non-creditors (unaffiliated banker-directors) and creditors (affiliated banker-directors) respectively. We see that both types of bankers affect the shareholder wealth following acquisition announcement similarly. The coefficients on the indicator

variables for banker presence are almost identical at 0.03 and are significant at the 1 percent level.

Finally in Column 4, I estimate the model for the presence of an investment banker on acquirers' board of directors. Investment bankers, unlike commercial bankers, are free of conflicts of interests with the shareholders, as they are not creditors, or have the potential to become creditors in the future.[12] The results indicate that the shareholder reaction to the acquisition announcements are more negative when there is an investment bank executive serving on a company's board.

The results for event windows (-1,1) and (-7,7) provide additional evidence for the effect of banker-directors on short-term shareholder returns following acquisition announcements, and are qualitatively and quantitatively similar (see Panels B and C).

In Panel D, the dependent variable is the longer-term cumulative abnormal returns measured over the month following the acquisition announcement – CAR(-1,30). As before, Column 1 analyzes the effects of commercial bank presence on boards in general, without differentiating between a creditor banks and non-creditor banks. The results are similar to the former findings with respect to short-term

[12] The investment banks are pure investment banks, and do not include the bank holding companies that give commercial banking and investment banking services at the same time.

shareholder reaction: The presence of a commercial banker on the board of an acquirer is associated with an increase of 0.16 points in the cumulative abnormal returns over the one-month period following the acquisition announcements, and this increase is significant at the 1 percent level. The results reported in Column 2 and Column 3 analyze the effects of non-creditors and creditors respectively. Once more, we see that both types of bankers affect the shareholder wealth following acquisition announcement similarly. Unaffiliated banker presence is associated with an increase of 0.15 points, and creditor presence is associated with an increase of 0.19 points in cumulative abnormal returns. Finally, mimicking the results from the analysis of the initial-day abnormal returns, investment bank presence on the board of directors of acquiring companies are associated with negative wealth affects during the one-month period following the acquisition announcements.

The results do not find any evidence for the conflicts of interest between the creditors and shareholders resulting in value-destroying acquisition decisions when a creditor is represented on the board of directors. If anything, creditors seem to act in a prudent manner and protect the shareholder interests when deciding on acquisitions, and shareholders value the presence of a representative from the creditor community. Moreover, the negative shareholder reaction to an acquisition announcement when there is an investment banker on board indicates that shareholders value the presence of commercial bankers, including the creditors of the companies that the shareholders own beyond any other financial expert that

may provide expertise to the management about investment decisions. The added value of the commercial banks is possibly due to the monitoring role they perform when they serve on a board of directors in order to protect the value of their claims with the company.

5.2.2 Ordinary least squares estimation

The previous section employed a self-selectivity model based on the observation that the sample firms have self-selected themselves into the decision to utilize the services of a bank executive on their board of directors. If the variables that determine the banker presence on a company's board are correlated with that company's CARs following an acquisition activity, then ordinary least squares will yield biased estimates.

However, it may also be argued that the factors that determine the presence of bankers on corporate boards are already incorporated into expectations and therefore should not be a part of the stock price reaction. In that case, the ordinary least squares (OLS) estimation would give unbiased estimates. In Table 8, I present the results from the OLS estimation, where the regressions are clustered at firm level.

Each column reports the results for a different event window. The results in Columns I, II and III show that the presence of an affiliated banker-director on a

company's board is associated with a significant one percent increase in the cumulative abnormal returns over the short-term event windows [-1,0], [-1,1] and [-7,7] respectively. The presence of unaffiliated commercial bankers and investment bankers, however, has no significant impact on cumulative abnormal returns following an acquisition announcement.

Column IV presents the results for the long-term event window: [-1,30]. When OLS is employed as the estimation method, there is no significant relationship between the affiliated banker-director presence and shareholder wealth, and a negative relationship between unaffiliated banker-director presence and shareholder wealth following acquisition announcements.

The results from the OLS analysis should be approached with caution. The tests for independence of equations (Equations 7a and 7b) in the self-selectivity model were rejected at the one percent level (see Table 7), pointing to a strong endogeneity between cumulative abnormal returns following acquisition announcements and banker presence on boards. Thus, the self-selectivity model is the correct model to use, and the OLS estimation introduces biases to all of the coefficients in the model. The significant negative correlation between the error terms in Equation 7a and Equation 7b (see Table 7) indicate a downward bias for the coefficients belonging to the banker-director indicator variables in the ordinary least squares estimation. We would expect the coefficients in the OLS model to be

lower than their unbiased estimates. The comparison of the coefficients belonging to the banker-director indicator variables in the self-selectivity model (Table 7) and in the OLS model (Table 8) reveals that the coefficients in the unbiased self-selectivity model are much larger and more significant than the biased estimates in the OLS model.

5.2.3 Saxonhouse (1976) methodology

Saxonhouse (1976) warns that regressing estimated parameters on a set of independent variables would give inefficient, albeit unbiased estimates of the coefficients of the independent variables. He suggests that the problem of heteroscedasticity in such regressions using estimated dependent variables could be confronted by weighting each observation on all variables by the inverse of the estimated standard error of the dependent variable.

The regressions in Table 9 present the results from the Saxonhouse (1976) estimation. All of the variables entering the regression model, including the constant, are multiplied by the inverse of the estimated standard error of the corresponding cumulative abnormal return (the dependent variable), and an ordinary least squares estimation is performed using the rescaled variables. Consistent with the OLS estimation (Table 8) the regressions are clustered at the firm level. The Saxonhouse estimation yields coefficients similar to the OLS

coefficients in direction and magnitude; however the coefficients on the banker-director dummies lose their significance.

The loss of significance could be explained by the biases introduced by the OLS estimation (see section 5.2.2). The self-selectivity model illustrated that the banker-director presence and the cumulative abnormal returns following acquisition announcements are endogenous. However, once the banker-director indicator variable is rescaled using the Saxonhouse methodology, the self-selectivity model is no longer valid because it requires the endogenous selection variable to be an indicator variable taking the values zero or one.

An alternative way to alleviate the endogeneity problem is to employ an instrumental variables (IV) estimation. Table 10 presents the results from the IV estimation, where the indicator variable for banker presence on a board (scaled by the inverse of the standard error of the CAR estimate) is instrumented. The instruments for banker-director indicator variables are identical to the variables that enter the selection equation.[13]

The results from the IV estimation establish a significant positive correlation between the presence of an affiliated commercial bank executive on an acquirer's board of directors and the cumulative abnormal returns following acquisition announcements. On the initial day of an acquisition announcement, an

[13] See Chapter 2 for the list of the variables.

acquirer that employs an affiliated banker on its board performs 5 percent higher than an acquirer that does not employ an affiliated banker on its board (Table 10, Column 1). The positive affect of affiliated banker-directors on cumulative abnormal returns is robust over different event window specifications: The average cumulative abnormal return for the [-1,1] event window is 9 percent higher; the average cumulative abnormal return for the [-7,7] event window is 15 percent higher and the average cumulative abnormal return for the [-1,30] event window is 21 percent higher when an affiliated banker-director is present on an acquirer's board of directors. These percentages are comparable to the ones from the self-selectivity models presented in Table 7.

6. Conclusions

This chapter investigates whether the conflicts of interest between the shareholders and creditors lead to value-destroying acquisition decisions in the presence of a commercial bank executive on the board of directors of a non-financial corporation.

With a sample of 847 acquisition decisions undertaken between 2002 and 2004 by the 403 corporations that were included in the S&P 500 Index, the analyses do not find any evidence for the conflicts of interest between the creditors and shareholders resulting in value-destroying acquisition decisions when a creditor is represented on the board of directors. The presence of a commercial

bank executive on a board does not lead to an excessive acquisition activity. The acquirers that utilized the services of a commercial banker on their boards diversify more, but this diversification effect belongs only to the unaffiliated bankers. Affiliated bankers (creditors), on the other hand, are not associated with acquisitions that diversify the company's operations. The analyses of shareholder wealth effects of acquisition announcements reveal that a banker's presence does indeed improve the shareholder value.

Creditors, when serving on boards of directors, seem to act in a prudent manner and protect the shareholders' interests when deciding on major acquisitions. The added value of the commercial banks is possibly due to the monitoring role they perform when they serve on a board of directors in order to protect the value of their claims with the company.

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Table 1. Banker Presence on Board of Directors during Acquisitions

The sample includes 847 acquisition deals that were announced and completed between 2002 and 2004, where the acquirer is a non-financial company included in the S&P 500 Index as of end-2002. The deal data are from the SDC database; the financial data are from Compustat and CRSP. The board composition data are from Sisli (2006). An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate.

	Number	Percentage
Number of acquisitions	847	
Executive of a commercial bank serving on the board of directors	190	22.43%
with lending relationship (affiliated)	83	9.80%
with no lending relationship (unaffiliated)	119	14.05%
Executive of an investment bank serving on the board of directors	86	10.15%

Table 2. Descriptive Statistics for Acquisition Deals

The sample includes 847 acquisition deals that were announced and completed between 2002 and 2004, where the acquirer is a non-financial company included in the S&P 500 Index as of end-2002. The deal data are from the SDC database; the financial data are from Compustat and CRSP. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The board composition data are from Sisli (2006). Financial Slack is the sum of cash and marketable securities. Cash Finance is an indicator variable that equals one if the acquisition deal is financed entirely by cash. Acquirer size is the net sales of the acquiring company. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock, and book value of total debt to the book value of the total assets. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company.

Panel A.

	All Acquisitions	Acquisitions when a commercial bank executive is present on board	Acquisitions when a commercial bank executive is not present on board	Hypothesis: Equal Means (Prob>t)
Acquirer Size ($ million)	18,105	21,832	17,025	0.109*
Financial Slack /Acquirer Size	0.139	0.070	0.160	0.000***
Cash Finance	0.319	0.316	0.320	0.920
Acquirer Market-to-Book Ratio	1.915	1.629	1.998	0.000***
Acquirer Total Debt / Assets	0.201	0.231	0.192	0.001***
Acquirer Prior Stock Price Performance	0.092	0.101	0.090	0.784
Acquirer Stock Price Volatility	0.141	0.114	0.148	0.000***
Diversifying Acquisitions	0.453	0.479	0.446	0.422
Acquirer Managerial Ownership	1.485	1.357	1.522	0.636

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Panel B.

	All Acquisitions	Acquisitions when an affiliated banker is present on board	Acquisitions when an affiliated banker is not present on board	Hypothesis: Equal Means (Prob>t)
Acquirer Size ($ million)	18,105	15,180	18,423	0.441
Financial Slack /Acquirer Size	0.139	0.082	0.146	0.001***
Cash Finance	0.319	0.349	0.315	0.529
Acquirer Market-to-Book Ratio	1.915	1.816	1.926	0.453
Acquirer Total Debt / Assets	0.201	0.236	0.197	0.019**
Acquirer Prior Stock Price Performance	0.092	0.094	0.092	0.976
Acquirer Stock Price Volatility	0.141	0.114	0.144	0.000***
Diversifying Acquisitions	0.453	0.530	0.445	0.140
Acquirer Managerial Ownership	1.485	0.926	1.545	0.204

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 3. Banker Presence on Board of Directors and Acquisition Activity

The table summarizes the acquisition activity for the 403 firms in the sample between 2002 and 2004 (1209 firm-year observations). An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. "At Least One Acquisition" is an indicator variable that equals to one if the firm undertook at least one acquisition in a given year. "The Number of Acquisitions" refers to the number of acquisitions done by the company in a given year. "Relative Value of Acquisitions" is the ratio of the total value of acquisitions completed in a given year to the total assets measured as of the end of the previous year.

	Commercial bank executive present on board	No commercial bank executive present on board	Hypothesis: Equal Means (Prob>t)
At Least One Acquisition	0.342	0.361	0.565
The Number of Acquisitions	0.488	0.633	0.069 **
Relative Value of Acquisitions	0.030	0.060	0.061 **
	Affiliated commercial bank executive present on board	No affiliated commercial bank executive present on board	Hypothesis: Equal Means (Prob>t)
At Least One Acquisition	0.353	0.356	0.934
The Number of Acquisitions	0.510	0.609	0.335
Relative Value of Acquisitions	0.033	0.056	0.286
	Investment bank executive present on board	No investment bank executive present on board	Hypothesis: Equal Means (Prob>t)
At Least One Acquisition	0.345	0.357	0.784
The Number of Acquisitions	0.521	0.605	0.466
Relative Value of Acquisitions	0.028	0.056	0.239

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 4. Commercial Banker Presence on Board of Directors and the Relative Value of Acquisition Deals

The table analyzes the acquisition activity for the 403 firms in the sample between 2002 and 2004 (1209 firm-year observations). The dependent variable is the "Relative Value of Acquisitions," which is the ratio of the total value of acquisitions completed in a given year to the total assets measured as of the end of the previous year. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Size is measured by the logarithm of net sales. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt to the book value of total assets. Financial Slack is the sum of cash and marketable securities. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Table 4. Commercial Banker Presence on Board of Directors and the Relative Value of Acquisition Deals (cont'd)

	(1)	(2)	(3)
Banker Dummies			
Banker-director	-0.059***		
	(0.005)		
Unaffiliated Banker-Director		-0.056***	
		(0.005)	
Affiliated Banker-Director			-0.052**
			(0.037)
Control Variables			
Size	-0.010**	-0.011**	-0.010**
	(0.021)	(0.017)	(0.020)
Market-to-book Ratio	0.019***	0.019***	0.018***
	(0.006)	(0.006)	(0.007)
Financial Slack / Assets	0.090	0.095	0.102*
	(0.135)	(0.122)	(0.099)
Capital Expenditures / Assets	-0.072	-0.059	-0.049
	(0.421)	(0.504)	(0.584)
Total Debt / Assets	0.000**	0.000**	0.000*
	(0.055)	(0.041)	(0.102)
Governance Index	-0.001	-0.001	-0.001
	(0.129)	(0.155)	(0.112)
Executive Ownership	0.000	0.000	-0.001
	(0.570)	(0.601)	(0.515)
Board Size	0.082***	0.074***	0.074***

	(0.004)	(0.004)	(0.005)
Ratio of Independent Directors	-0.090	-0.085	-0.095
	(0.159)	(0.175)	(0.146)
Constant	-0.087	-0.071	-0.076
	(0.212)	(0.284)	(0.260)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	49 Fama-French
Observations	1199	1199	1200
Prob > Chi2	0.022	0.022	0.015
rho	0.161	0.134	0.162
sigma	0.162	0.162	0.162
lambda	0.026	0.022	0.026
Test of Independent Equations: P>chi2	0.002	0.007	0.007

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 5. Commercial Banker Presence on Board of Directors and the Diversification Decisions

The table analyzes the probability that an acquisition activity diversifies the acquirer's business operations. The dependent variable in Panel A is a an indicator variable that takes the value "one" if the two-digit SIC code for a target company is different from that of an acquiring company. The dependent variable in Panel B is the ratio of the acquisition value to the market value of the acquirer if the acquisition is a "diversifying" acquisition and zero if the acquisition is not a diversifying acquisition. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Size is measured by the logarithm of net sales. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt to the book value of total assets. Financial Slack is the sum of cash and marketable securities. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Diversification Measured by a (0,1) Indicator Variable

	(1)	(2)	(3)
Banker Dummies			
Banker-director	0.536**		
	(0.017)		
Unaffiliated Banker-Director		0.495**	
		(0.043)	
Affiliated Banker-Director			0.283
			(0.655)
Control Variables			
Size	0.070*	0.068*	0.064**
	(0.007)	(0.006)	(0.015)
Total Debt / Assets	-0.398**	-0.481***	-0.364**
	(0.036)	(0.011)	(0.045)
Financial Slack / Assets	0.208	0.116	0.060
	(0.294)	(0.516)	(0.759)
Market-to-Book Ratio	-0.023	-0.031	-0.037
	(0.400)	(0.276)	(0.211)

	(1)	(2)	(3)
Prior Stock Return	-0.005	-0.008	0.001
	(0.860)	(0.776)	(0.958)
Stock Return Volatility	0.065	-0.055	-0.603
	(0.860)	(0.931)	(0.276)
Governance Index	0.009	0.008	0.009

	(0.348)	(0.433)	(0.360)
Executive Ownership	0.005	0.006	0.005
	(0.412)	(0.349)	(0.381)
Board Size	-0.245	-0.164	-0.197
	(0.107)	(0.214)	(0.249)
Ratio of Independent Directors	-0.369	-0.259	0.171
	(0.339)	(0.496)	(0.581)
Constant	0.216	0.134	0.274
	(0.583)	(0.728)	(0.463)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	48 Fama-French
Observations	841	841	841
Prob > Chi2	0.000	0.000	0.000
rho	-0.593	-0.559	-0.241
sigma	0.496	0.483	0.463
lambda	-0.295	-0.270	-0.112
Test of Independent Equations: P>chi2	0.024	0.051	0.740

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Panel B. Diversification Measured by the Relative Size of Diversifying Acquisitions

	(1)	(2)	(3)
Banker Dummies			
Banker-director	0.0329***		
	(0.0010)		
Unaffiliated Banker-Director		0.0374***	
		(0.0000)	
Affiliated Banker-Director			0.0028
			(0.7870)
Control Variables			
Size	-0.0025	-0.0020	-0.0030*
	(0.1670)	(0.2520)	(0.0920)
Total Debt / Assets	-0.0126	-0.0115	-0.0093
	(0.3520)	(0.3540)	(0.4960)
Financial Slack / Assets	0.0142	0.0124	0.0065
	(0.3850)	(0.4390)	(0.6850)
Market-to-Book Ratio	-0.0024*	-0.0020*	-0.0036**
	(0.0510)	(0.0820)	(0.0290)
Prior Stock Return	-0.0030*	-0.0036*	-0.0027
	(0.1000)	(0.0660)	(0.1160)
Stock Return Volatility	0.0202	0.0170	-0.0096
	(0.6030)	(0.6510)	(0.7630)
Governance Index	0.0005	0.0007	0.0004

	(0.3900)	(0.1340)	(0.4900)
Executive Ownership	-0.0001	0.0000	0.0000
	(0.8090)	(0.9010)	(0.9950)
Board Size	-0.0108	-0.0120*	-0.0046
	(0.1710)	(0.1010)	(0.4530)
Ratio of Independent Directors	-0.0351*	-0.0381**	-0.0105
	(0.1070)	(0.0470)	(0.4650)
Constant	0.0401*	0.0345	0.0380**
	(0.0830)	(0.1120)	(0.0430)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	48 Fama-French	48 Fama-French
Observations	841	841	841
Prob > Chi2	0.2056	0.0001	0.0000
rho	-0.6791	-0.8569	0.0741
sigmà	0.0278	0.0278	0.0253
lambda	-0.0189	-0.0238	0.0019
Test of Independent Equations: P>chi2	0.0200	0.0000	0.5890

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 6. Comparisons of Mean Cumulative Abnormal Returns by Banker-Director Presence

The table presents the mean cumulative abnormal returns around the acquisition announcement dates. The sample includes 847 acquisition deals that were announced and completed between 2002 and 2004, where the acquirer is a non-financial company included in the S&P 500 Index as of end-2002. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. t-values are in italics.

Panel A. Comparison of mean cumulative abnormal returns by commercial banker-director presence

	All Acquisitions	Acquisitions when a commercial bank executive is present on board	Acquisitions when a commercial bank executive is not present on board	Hypothesis: CAR is Equal Across the 2 Portfolios (Prob>F)
	(1)	(2)	(3)	(4)
CAR from day -1 to day 0	-0.11%	0.23%	-0.20%	0.044**
	-0.967	*1.380*	*-1.817**	
CAR from day -1 to day +1	-0.12%	0.21%	-0.22%	0.114
	-0.646	*0.720*	*-1.102*	
CAR from day -1 to day 30	-1.79%	-1.24%	-1.94%	0.496
	*-5.922****	*2.390***	*-5.438****	
CAR from day -7 to day 7	-1.14%	-0.31%	-1.37%	0.090*
	*-5.646****	*0.960*	*-5.880****	

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 6. Comparisons of Mean Cumulative Abnormal Returns by Banker-Director Presence (cont'd)

Panel B. Comparison of mean cumulative abnormal returns by affiliated commercial banker-director presence

	All Acquisitions (1)	Acquisitions when an affiliated banker is present on board (2)	Acquisitions when an affiliated banker is not present on board (3)	Hypothesis: CAR is Equal Across the 2 Portfolios (Prob>F) (4)
CAR from day -1 to day 0	-0.11%	0.52%	-0.17%	0.007***
	-0.967	*2.134**	*-1.711**	
CAR from day -1 to day +1	-0.12%	0.48%	-0.19%	0.032**
	-0.646	*1.674**	*-1.224*	
CAR from day -1 to day 30	-1.79%	-0.0061	-1.92%	0.278
	*-5.922****	*1.290*	*-5.807****	
CAR from day -7 to day 7	-1.14%	0.0018	-1.28%	0.059*
	*-5.646****	*-0.029*	*-5.929****	

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 6. Comparisons of Mean Cumulative Abnormal Returns by Banker-Director Presence (cont'd)

Panel C. Comparison of mean cumulative abnormal returns by investment banker-director presence

	All Acquisitions	Acquisitions when an investment bank executive is present on board	Acquisitions when an investment bank executive is not present on board	Hypothesis: CAR is Equal Across the 2 Portfolios (Prob>F)
	(1)	(2)	(3)	(4)
CAR from day -1 to day 0	-0.11%	-0.34%	-0.08%	0.705
	-0.967	*-1.205*	*-0.624*	
CAR from day -1 to day +1	-0.12%	-0.50%	-0.08%	0.441
	-0.646	*-1.417*	*-0.199*	
CAR from day -1 to day 30	-1.79%	-0.0008	-1.98%	0.153
	*-5.922****	*0.150*	*-6.283****	
CAR from day -7 to day 7	-1.14%	-0.011	-1.14%	0.577
	*-5.646****	*-1.910**	*-5.316****	

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 7. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements - Sample Selection Estimation

The table analyzes the shareholder wealth effects of an acquisition announcement in the presence of a commercial bank executive on the board of directors of an acquiring company. The dependent variable is the cumulative abnormal returns over the defined event window. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Size is measured by the net sales. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt to the book value of the total assets. Financial Slack is the sum of cash and marketable securities. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at firm level. P-values are in parentheses.

Table 7. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements - Sample Selection Estimation (cont'd)

Panel A. Cumulative abnormal returns for event window [-1,0]

	(1)	(2)	(3)	(4)
Banker Dummies				
Banker-director	0.030**			
	(0.041)			
Unaffiliated Banker-Director		0.037***		
		(0.000)		
Affiliated Banker-Director			0.033***	
			(0.003)	
Investment Banker-Director				-0.047***
				(0.000)
Control Variables				
Size	-0.002	0.002	-0.001	-0.001
	(0.201)	(0.232)	(0.324)	(0.586)
Total Debt / Assets	0.015	0.014	0.020	0.011
	(0.250)	(0.426)	(0.087)	(0.359)
Market-to-Book Ratio	0.001	0.001	0.000	-0.001
	(0.446)	(0.350)	(0.916)	(0.647)
Cash-only Payment	0.003	0.003	0.002	0.002
	(0.295)	(0.265)	(0.446)	(0.514)
Diversifying Acquisition	0.000	0.002	0.000	0.001
	(0.879)	(0.953)	(0.978)	(0.752)
Stock Return	0.004	0.002	0.004	0.004

	(0.138)	(0.159)	(0.111)	(0.115)
Governance Index	-0.001	0.001	0.000	-0.001
	(0.150)	(0.156)	(0.348)	(0.327)
Executive Ownership	0.002***	0.001***	0.001***	0.002***
	(0.010)	(0.009)	(0.011)	(0.007)
Board Size	-0.006	0.009	-0.005	0.003
	(0.558)	(0.862)	(0.561)	(0.720)
Ratio of Independent Directors	-0.046**	0.019***	-0.020	-0.023
	(0.021)	(0.014)	(0.198)	(0.245)
Constant	0.027	0.018	0.016	0.013
	(0.251)	(0.383)	(0.425)	(0.521)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	Yes	Yes	Yes	Yes
Observations	840	840	840	840
Prob > Chi2	0.018	0.001	0.013	0.000
rho	-0.468	-0.628	-0.405	0.665
sigma	0.035	0.036	0.034	0.036
lambda	-0.017	-0.023	-0.014	0.024
Test of Independent Equations: P>chi2	0.084	0.000	0.069	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 7. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements - Sample Selection Estimation (cont'd)

Panel B. Cumulative abnormal returns for event window [-1,1]

	(1)	(2)	(3)	(4)
Banker Dummies				
Banker-director	0.040**			
	(0.002)			
Unaffiliated Banker-Director		0.041***		
		(0.002)		
Affiliated Banker-Director			0.048***	
			(0.000)	
Investment Banker-Director				-0.060***
				(0.000)
Control Variables				
Size	-0.003*	-0.003*	-0.002	-0.002
	(0.094)	(0.109)	(0.164)	(0.352)
Total Debt / Assets	0.037**	0.033**	0.042***	0.035**
	(0.039)	(0.079)	(0.007)	(0.029)
Market-to-Book Ratio	0.003*	0.003	0.001	0.001
	(0.088)	(0.116)	(0.316)	(0.625)
Cash-only Payment	0.007**	0.007**	0.006*	0.006*
	(0.042)	(0.044)	(0.098)	(0.058)
Diversifying Acquisition	-0.002	-0.001	-0.001	0.000
	(0.526)	(0.659)	(0.667)	(0.879)
Stock Return	0.005	0.005	0.005*	0.006*

	(0.110)	(0.125)	(0.077)	(0.090)
Governance Index	-0.001	-0.001	0.000	0.000
	(0.277)	(0.302)	(0.555)	(0.641)
Executive Ownership	0.001***	0.001***	0.001***	0.001***
	(0.011)	(0.009)	(0.012)	(0.008)
Board Size	-0.010	-0.004	-0.010	0.001
	(0.369)	(0.739)	(0.341)	(0.887)
Ratio of Independent Directors	-0.038	-0.033	-0.005	-0.007
	(0.122)	(0.164)	(0.819)	(0.786)
Constant	0.037	0.023	0.025	0.017
	(0.178)	(0.380)	(0.319)	(0.481)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	Yes	Yes	Yes	Yes
Observations	840	840	840	840
Prob > Chi2	0.003	0.004	0.000	0.000
rho	-0.530	-0.575	-0.549	0.701
sigma	0.042	0.042	0.042	0.043
lambda	-0.023	-0.024	-0.023	0.030
Test of Independent Equations: P>chi2	0.009	0.004	0.004	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 7. Commercial bank executive presence on the board of directors and shareholder wealth effects of acquisition announcements (cont'd)

Panel C. Cumulative abnormal returns for event window [-7,7]

	(1)	(2)	(3)	(4)
Banker Dummies				
Banker-director	0.094***			
	(0.000)			
Unaffiliated Banker-Director		0.086***		
		(0.005)		
Affiliated Banker-Director			0.127***	
			(0.000)	
Investment Banker-Director				-0.104***
				(0.000)
Control Variables				
Size	-0.006	-0.005	-0.004	-0.003
	(0.155)	(0.175)	(0.242)	(0.415)
Total Debt / Assets	0.033	0.026	0.043	0.032
	(0.379)	(0.495)	(0.170)	(0.332)
Market-to-Book Ratio	0.005	0.004	0.002	0.000
	(0.228)	(0.328)	(0.684)	(0.905)
Cash-only Payment	0.013**	0.013**	0.009	0.011*
	(0.054)	(0.052)	(0.200)	(0.089)
Diversifying Acquisition	-0.015***	-0.013**	-0.013**	-0.011*
	(0.011)	(0.020)	(0.025)	(0.063)
Stock Return	0.010	0.010	0.011	0.010

	(0.380)	(0.393)	(0.339)	(0.418)
Governance Index	-0.002	-0.002	-0.001	-0.001
	(0.140)	(0.143)	(0.346)	(0.351)
Executive Ownership	-0.001	-0.001	-0.001	-0.001
	(0.469)	(0.493)	(0.332)	(0.490)
Board Size	-0.016	0.001	-0.019	0.011
	(0.497)	(0.958)	(0.400)	(0.574)
Ratio of Independent Directors	-0.098*	-0.078	-0.021	-0.017
	(0.065)	(0.121)	(0.644)	(0.733)
Constant	0.109*	0.069	0.087	0.053
	(0.078)	(0.217)	(0.138)	(0.280)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	Yes	Yes	Yes	Yes
Observations	840	840	840	840
Prob > Chi2	0.000	0.002	0.000	0.001
rho	-0.619	-0.618	-0.680	0.638
sigma	0.092	0.090	0.090	0.090
lambda	-0.057	-0.056	-0.061	0.058
Test of Independent Equations: P>chi2	0.000	0.003	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 7. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements - Sample Selection Estimation (cont'd)

Panel D. Cumulative abnormal returns for event window [-1,30]

	(1)	(2)	(3)	(4)
Banker Dummies				
Banker-director	0.160***			
	(0.000)			
Unaffiliated Banker-Director		0.151***		
		(0.000)		
Affiliated Banker-Director			0.194***	
			(0.000)	
Investment Banker-Director				-0.168***
				(0.000)
Control Variables				
Size	-0.005	-0.005	-0.003	-0.002
	(0.456)	(0.475)	(0.685)	(0.789)
Total Debt / Assets	0.015	0.004	0.036	0.022
	(0.816)	(0.957)	(0.505)	(0.699)
Market-to-Book Ratio	0.008	0.006	0.002	-0.002
	(0.224)	(0.330)	(0.732)	(0.725)
Cash-only Payment	0.015*	0.014	0.009	0.010
	(0.100)	(0.118)	(0.305)	(0.313)
Diversifying Acquisition	-0.023***	-0.019*	-0.022**	-0.019**
	(0.018)	(0.060)	(0.027)	(0.064)
Stock Return	0.001	0.000	0.003	0.005

	(0.947)	(0.979)	(0.820)	(0.764)
Governance Index	-0.003	-0.003	-0.002	-0.003
	(0.145)	(0.159)	(0.273)	(0.191)
Executive Ownership	0.002	0.002	0.002	0.003*
	(0.207)	(0.140)	(0.180)	(0.105)
Board Size	-0.042	-0.013	-0.041	0.008
	(0.273)	(0.693)	(0.250)	(0.799)
Ratio of Independent Directors	-0.163***	-0.136	-0.031	-0.028
	(0.078)	(0.121)	(0.669)	(0.741)
Constant	0.188	0.125	0.144	0.101
	(0.031)	(0.118)	(0.077)	(0.190)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	48 Fama-French	49 Fama-French	48 Fama-French	49 Fama-French
Observations	840	840	840	840
Prob > Chi2	0.000	0.000	0.000	0.000
rho	-0.732	-0.735	-0.732	0.714
sigma	0.146	0.141	0.140	0.140
lambda	-0.107	-0.104	-0.102	0.100
Test of Independent Equations: P>chi2	0.000	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 8. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements - Ordinary Least Squares Estimation

The table analyzes the shareholder wealth effects of an acquisition announcement in the presence of a commercial bank executive on the board of directors of an acquiring company. The dependent variable is the cumulative abnormal returns over the defined event window. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Size is measured by the net sales. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt to the book value of the total assets. Financial Slack is the sum of cash and marketable securities. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at firm level. P-values are in parentheses.

	(1) CAR(-1,0)	(2) CAR(-1,1)	(3) CAR(-7,7)	(4) CAR(-1,30)
Banker Dummies				
Unaffiliated Banker-Director	-0.0004	0.0005	-0.0061	-0.0225*
	(0.902)	(0.898)	(0.435)	(0.062)
Affiliated Banker-Director	0.0085**	0.0075*	0.0194**	0.0158
	(0.041)	(0.098)	(0.042)	(0.187)
Investment Banker-Director	-0.0032	-0.0044	0.0008	0.0102
	(0.357)	(0.329)	(0.955)	(0.589)
Control Variables				
Size	-0.0012	-0.0022	-0.0046	-0.0037
	(0.389)	(0.185)	(0.161)	(0.507)
Total Debt / Assets	0.0168	0.0390**	0.0482	0.0482
	(0.152)	(0.015)	(0.137)	(0.379)
Market-to-Book Ratio	-0.0002	0.0009	0.0007	-0.0010
	(0.875)	(0.481)	(0.847)	(0.844)
Cash-only Payment	0.0024	0.0058*	0.0101	0.0100
	(0.407)	(0.085)	(0.152)	(0.306)
Diversifying Acquisition	0.0001	-0.0011	-0.0109*	-0.0194*
	(0.975)	(0.728)	(0.075)	(0.060)
Stock Return	0.0041	0.0055*	0.0110	0.0047
	(0.115)	(0.082)	(0.388)	(0.753)
Governance Index	-0.0004	-0.0002	-0.0011	-0.0019
	(0.445)	(0.740)	(0.423)	(0.364)
Executive Ownership	0.0015***	0.0015***	-0.0007	0.0026
	(0.010)	(0.009)	(0.470)	(0.112)

Board Size	0.0002	-0.0013	0.0072	0.0063
	(0.979)	(0.881)	(0.650)	(0.803)
Ratio of Independent Directors	-0.0147	0.0024	0.0032	0.0198
	(0.328)	(0.900)	(0.939)	(0.763)
Constant	0.0049	0.0073	0.0320	0.0483
	(0.782)	(0.740)	(0.514)	(0.461)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	Yes	Yes	Yes	Yes
Observations	840	840	840	840
Prob > F	0.0251	0.0273	0.0138	0.0787
R-squared	0.0546	0.0566	0.0478	0.1311

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 9. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements - Saxonhouse (1976) Estimation by OLS

The table analyzes the shareholder wealth effects of an acquisition announcement in the presence of a commercial bank executive on the board of directors of an acquiring company. The dependent variable is the cumulative abnormal returns over the defined event window. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Size is measured by the net sales. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt to the book value of the total assets. Financial Slack is the sum of cash and marketable securities. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at firm level. P-values are in parentheses.

	(1)	(2)	(3)	(4)
	CAR(-1,0)	CAR(-1,1)	CAR(-7,7)	CAR(-1,30)
Banker Dummies				
Unaffiliated Banker-Director	-0.0014	-0.0023	-0.0026	-0.0013
	(0.558)	(0.399)	(0.656)	(0.847)
Affiliated Banker-Director	0.0035	0.0028	0.0063	-0.0080
	(0.351)	(0.467)	(0.380)	(0.354)
Investment Banker-Director	-0.0062**	-0.0063	-0.0035	0.0115
	(0.032)	(0.132)	(0.774)	'(0.496)
Control Variables				
Size	-0.0022***	-0.0020*	-0.0052**	-0.0038
	(0.035)	(0.104)	(0.033)	(0.257)
Total Debt / Assets	0.0095	0.0245**	0.0435**	0.0133
	(0.309)	(0.023)	(0.054)	(0.659)
Market-to-Book Ratio	-0.0001	0.0010	0.0000	0.0003
	(0.902)	(0.366)	(0.995)	(0.927)
Cash-only Payment	0.0017	0.0052*	0.0061	0.0053
	(0.496)	(0.070)	(0.257)	(0.403)
Diversifying Acquisition	-0.0023	-0.0032	-0.0159***	-0.0130**
	(0.282)	(0.222)	(0.002)	(0.052)
Stock Return	0.0078***	0.0111**	0.0490***	0.0445***
	(0.069)	(0.022)	(0.000)	(0.001)
Governance Index	-0.0008*	-0.0005	-0.0025**	-0.0018
	(0.100)	(0.382)	(0.043)	(0.294)
Executive Ownership	0.0008**	0.0011***	-0.0001	0.0016*
	(0.052)	(0.012)	(0.929)	(0.028)
Board Size	0.0039	-0.0005	0.0100	-0.0163

	(0.510)	(0.933)	(0.505)	(0.419)
Ratio of Independent Directors	-0.0047	0.0127	0.0373	-0.0274
	(0.681)	(0.383)	(0.212)	(0.540)
Constant	0.0119	0.0100	0.0279	0.1305***
	(0.452)	(0.572)	(0.467)	(0.014)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	Yes	Yes	Yes	Yes
Observations	840	840	840	840
Prob > F	0.0031	0.0339	0.0000	0.0000
R-squared	0.0532	0.0610	0.1020	0.0877

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 10. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements – Saxonhouse (1976) Estimation by Instrumental Variables

The table analyzes the shareholder wealth effects of an acquisition announcement in the presence of a commercial bank executive on the board of directors of an acquiring company. The dependent variable is the cumulative abnormal returns over the defined event window. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. Size is measured by the net sales. Market-to-Book Ratio is the sum of market value of common stock, liquidating value of preferred stock and book value of total debt to the book value of the total assets. Financial Slack is the sum of cash and marketable securities. Total Debt is long-term debt plus short-term debt (debt in current liabilities). Prior Stock Market Performance is the stock return measured over the year preceding the acquisition decision. Stock Return Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Diversifying Acquisition refers to the mergers in which the two-digit SIC code for a target company is different from that of an acquiring company. Acquirer Managerial Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of number of directors on board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at firm level. P-values are in parentheses.

Table 10. Commercial Bank Executive Presence on the Board of Directors and Shareholder Wealth Effects of Acquisition Announcements – Saxonhouse (1976) Estimation by Instrumental Variables (cont'd)

	(1)	(2)	(3)	(4)
	CAR(-1,0)	CAR(-1,1)	CAR(-7,7)	CAR(-1,30)
Banker Dummies				
Unaffiliated Banker-Director	0.0053	0.0020	0.0099	0.0624
	(0.701)	(0.912)	(0.768)	(0.215)
Affiliated Banker-Director	0.0563***	0.0890***	0.1527***	0.2142**
	(0.018)	(0.008)	(0.008)	(0.02)
Investment Banker-Director	0.0222	0.0275	0.0977	0.0569
	(0.351)	(0.355)	(0.137)	(0.478)
Control Variables				
Size	-0.0024	-0.0022	-0.0054	-0.0023
	(0.139)	(0.310)	(0.129)	(0.679)
Total Debt / Assets	0.0252*	0.0497***	0.0899***	0.0459
	(0.095)	(0.010)	(0.011)	(0.350)
Market-to-Book Ratio	0.0018	0.0037**	0.0052	0.0084
	(0.183)	(0.035)	(0.136)	(0.117)
Cash-only Payment	-0.0014	-0.0038	-0.0030	-0.0038
	(0.641)	(0.735)	(0.704)	(0.735)
Diversifying Acquisition	-0.0052	-0.0258	-0.0248	-0.0258
	(0.095)	(0.016)	(0.003)	(0.016)
Stock Return	0.0062	0.0087	0.0465***	0.0310*
	(0.213)	(0.148)	(0.000)	(0.064)
Governance Index	0.0001	0.0009	-0.0003	0.0018
	(0.919)	(0.286)	(0.872)	(0.405)

Executive Ownership	0.0007	0.0010*	-0.0004	0.0012
	(0.161)	(0.103)	(0.735)	(0.459)
Board Size	-0.0094	-0.0218*	-0.0262	-0.0827**
	(0.312)	(0.089)	(0.254)	(0.022)
Ratio of Independent Directors	-0.0281	-0.0215	-0.0172	-0.1579**
	(0.194)	(0.438)	(0.754)	(0.029)
Constant	0.0181	0.0234	0.0380	0.1896**
	(0.392)	(0.400)	(0.495)	(0.017)
Year Indicator Variables	Yes	Yes	Yes	Yes
Industry Indicator Variables	Yes	Yes	Yes)	Yes
Observations	840	840	840	840
Prob > F	0.2923	0.1503	0.0003	0.0003

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively

CHAPTER 4

The Performance Effects of the Presence of Commercial Bank Executives on Corporate Boards

Summary: This chapter investigates the effects of banker presence on the boards of directors of non-financial companies on firm performance. After controlling for the endogeneity between the banker-director presence and the observed firm performance, the presence of a banker on a board is associated with a significant increase in return-on-assets, on stock market returns, and on volatility-adjusted stock market returns. The positive effect on firm performance is related to the services of both affiliated banker-directors and unaffiliated banker-directors on corporate boards, and is robust to controlling for the quality of other corporate governance institutions.

1. Introduction

This chapter investigates the effects of banker presence on the boards of directors of non-financial companies on firm performance.

This question is related to two literatures: the literature on the relationship between the composition of board of directors and firm performance, and the literature on firm-bank relationships. Neither literature yet has an unequivocal position on whether a bank executive sitting on the board of a corporation would add value to, or detract value from that corporation. On the one hand, the presence of a bank executive on a board may add value to a firm. The presence of a banker-director could provide valuable financial expertise to the management of the company and help access funds on cheaper and less restrictive terms. In addition, the information that a bank gains about a company while serving on its board would decrease the cost of collecting information, thus decrease the cost of finance for that company. Besides more favorable financing outcomes, banker-directors may also help reach better investment outcomes. A banker-director with a strong incentive to provide an effective monitoring function may cause managers to choose more value-enhancing investments. We would expect that the better investment outcomes and cheaper finance would result in higher performance and firm value.

On the other hand, the presence of bankers might also subtract value from the firm. Once a bank executive gains a board seat, her presence on the board may create an information advantage for her bank compared to the other potential lenders. The bank, in return, might exploit its informational advantage, build bargaining power over the firm's profits, and demand higher interest rates and fees (Sharpe, 1990). On the investment side, this so-called "hold-up" problem might force the companies to take less efficient decisions (Rajan, 1992); and to escape from being locked-in, the borrowing company might choose not to undertake valuable investments. Furthermore, possessing the more conservative nature of a creditor, a banker-director may influence the investment choices of a firm towards less risky projects in order to protect the value of the bank's debt claims.

The findings presented in the previous two chapters provide support for the positive effects of banker-directors on the financing outcomes and certain investment outcomes (stock market performance around acquisition activities) of a firm. Chapter 2 shows that the presence of an affiliated commercial banker on a board is associated with a significant increase in the amount of private debt, an increase in overall debt ratios, a significant reduction in the price of private debt, and a significant decrease in the dependence on collateral and financial covenants when raising private debt. Chapter 3 analyzes a sample of acquisition decisions when a banker-director is present and shows that a banker's presence on a board

does not lead to excessive acquisition activity, and improves shareholder value following acquisition announcements.

The natural question then is whether the easier access to capital, the accompanied cost savings, and the value-enhancing acquisition decisions feed into better firm performance when a commercial bank executive serves on the board. In this chapter, I analyze the operating performance, and stock market performance between 2002 and 2004 of the companies that are included in the S&P 500 Index as of 2002. I utilize four separate measures of firm performance: (i) Return on assets, calculated as the ratio of earnings before interest, taxes, depreciation and amortization to the book value of total assets; (ii) Market-to-book ratio, calculated as the ratio of book value of debt and market value of equity to the book value of total assets; (iii) Stock market returns on common stock; and (iv) Stock market returns on common stock controlled for stock price volatility. The first performance metric, return on assets, measures the operational efficiency of a given firm. The second performance metric, also known as Tobin's Q, is used to measure the shareholder value and is widely used in the corporate finance literature. However, Tobin's Q can also be interpreted as a measure of a firm's investment opportunities, and this has been widely criticized for not being a measure of firm performance (Demsetz and Villalonga, 2001; Khanna, 2007). The actual stock market performance and the actual stock market performance controlled for stock price volatility are thus used as alternative measures of market performance.

The endogeneity between the structure of the board of directors and the observed firm performance is a concern in both empirical and theoretical corporate governance studies (Hermalin and Weisbach, 2001). I explicitly control for the endogeneity between banker-director presence and firm performance by building an average treatment effects model. The model consists of two equations: an equation that predicts performance and an equation that predicts banker presence on a board, which are estimated simultaneously. The hypothesis that the equations are independent is rejected at the one percent level, pointing to a strong endogeneity between banker-director presence and firm performance.

The results provide some evidence for a positive effect of banker-directors on firm performance when performance is measured by return-on-assets and stock returns. The positive effect on firm performance is related to the services of both affiliated banker-directors and unaffiliated banker-directors on corporate boards. However, when I employ Tobin's Q as a performance measure, I obtain a negative relationship between the presence of a bank executive on a company's board of directors and that company's Tobin's Q, which is in contrast to the previous results[1].

[1] The negative relationship between Tobin's Q and banker-director presence may be explained by bankers helping the companies to achieve their optimal marginal Q ratios. Likewise, if having a banker on board reduces the cost of capital, at the equilibrium the firm's marginal rate of return should be lower. How that would be reflected in the average ROA and average Q figures is unclear, and should be investigated further. This chapter makes a first pass attempt to identify preliminary relationship.

In my analysis of firm performance, I also control for other corporate governance characteristics including the board size, board independence, an overall corporate governance quality index, and executive ownership of a firm's common stock. The positive effects of banker-directors are robust to controlling for other corporate governance mechanisms.

The paper proceeds as follows. Section 2 motivates the research question. Section 3 explains the study sample, introduces the performance variables, and gives the descriptive statistics. Section 4 summarizes the average treatment effects methodology, and presents the results. Section 5 concludes.

2. Motivation

There is an extensive literature on the optimal organization of the board of directors, which investigates the relationship between the board's composition and the firm's performance outcomes. The vast majority of the studies on board composition classify the board members into three groups: (i) The inside directors, who include board members who are the founders, founding family members, managers, and past employees of the company; (ii) the outside directors, who have no business ties with the company; (iii) and the gray directors, who have business ties, and/or the possibility of establishing business ties with the company in the future such as auditors, lawyers, and bankers. Despite a vast number of studies, the

literature on the optimal structure of the board of directors remains inconclusive (see Bhagat and Black, 1999; Hermalin and Weisbach, 2003). Despite the common belief that outsider-dominated boards are more effective in protecting the rights of the shareholders, we do not have yet robust evidence supporting whether outsider-dominated board structures are associated with higher firm performance.

The lack of a robust conclusion in the literature that links board composition to firm performance outcomes may be due to insufficient detail in the classification of board members. There has been no uniform treatment of bank executives serving on corporate boards – they are sometimes classified as outsiders, and sometimes as gray directors. This chapter contributes to the extant literature on board composition and firm performance by examining a specific class of board members – the commercial bankers. When a bank executive joins the board of directors of a company, the added dimension of the banking relationship would increase the precision of the lender's information about the investment choices of the borrowing firm. I hypothesize that as a result, the firm would be forced to make investment decisions that are more in line with shareholders' interests and the return on investments (scaled by risk) would increase.

The supply of financial expertise and monitoring provided by the commercial bankers serving on corporate boards may result in greater access to funds and capital cost reductions. Supporting empirical evidence for these

predictions is presented in Chapter 2– the presence of an affiliated commercial banker on a board is associated with a significant increase in the amount of private debt lending, and an increase in overall debt ratios, a significant reduction in the price of private debt, and a significant decrease in the dependence on collateral and financial covenants when raising private debt.

These positive findings about the services of banker-directors on corporate boards are widely supported by the literature relationship banking, which studies the consequences of close relationships between banks and borrowers (Boot, 2000).[2] The basic theoretical argument in the relationship banking literature is that banks act as delegated monitors (Diamond, 1984) and mitigate asymmetric information problems. As banks obtain proprietary information about the borrowing companies through multiple interactions during the course of originating and renewing loans (Boot, 2000), borrowers reveal information to the lending bank that is not available to financial markets (Bhattacharya and Chiesea, 1995). As a result of a closer bank-firm relationship, the cost of monitoring decreases, and thus the cost of funds available to the company decreases (Fama, 1985). Empirical research provides supporting evidence for the existence of bank-borrower relationships helping firms to access funds and to decrease the cost of debt. For example, Petersen and Rajan (1994) and Berger and Udell (1995) show that the

[2] Boot (2000) defines relationship banking as "the provision of financial services by a financial intermediary that: (i) invests in obtaining customer-specific information, often proprietary in nature; and (ii) evaluates the profitability of these investments through multiple transactions with the same customer over time and/or across products."

strength of banking relationship, as proxied by the duration of the relationship, enhances credit availability, and decreases the interest rates on loans and collateral requirements. Berger and Udell (1995) also illustrate that the cost of borrowing becomes lower as the relationship between a bank and a borrower becomes stronger. Similarly, Degryse (2000) shows that the scope of a relation between the bank and the borrowing firm (number of different services firm purchases from the bank) decreases the loans' interest rates. The results in Chapter 2 are consistent with these findings: An increase in the scope of a banking relationship with a bank's access to the corporate boardroom results it better terms of debt finance.

However, the literature on banker-directors has not been unequivocal on the benefits of bankers on boards. The leading argument against banker representation on corporate boards has been the conflicts of interest between the shareholders and the creditors (Kroszner and Strahan, 2001; Guner et al., 2006).[3] In order to investigate whether the hypothesized shareholder-creditor interests deteriorate the investment decisions of the companies that hire a commercial banker on their boards, Chapter 3 studies the acquisition decisions when a commercial banker is present on an acquirer's board of directors. The results do not find any evidence for banker-directors' deteriorating the investment decisions in regards to the acquisition activities. On the contrary, the shareholder price reaction to the

[3] The formal tests of the suspected conflicts of interest, however, are not present in the extant literature.

acquisition decisions is positive when there is a commercial banker present on an acquirer's board.

The improved access to capital, the accompanied cost savings, and favorable acquisition outcomes associated with banker-directors should lead to an improved firm performance when a commercial bank executive serves on a board. However, two existing studies on the performance effects of banker-directors present conflicting results. In line with the predictions, Rosenstein and Wyatt (1990) find a positive abnormal return associated after an announcement that a financial outsider would join a board of directors for a sample of public companies during the 1980-1985 period.[4] Kracaw and Zenner (1999) examine the stock price reactions, measured as two-day abnormal stock returns, to bank loan announcements when the bank and the borrower have interlocking directorates for the period 1980-1989. Notwithstanding with the Rosenstein and Wyatt (1990) results, they find that stock price reactions are significantly negative when bank executives serve on borrower's boards. The evidence from the relationship banking literature is also not robust. For example, Simon (1998) finds that bank control raises the equity value of a company by about 7 percent, but on the other hand Morck, Nakamura, and Shivdasani (2000) document a negative relationship between bank ownership and firm value in Japan.

[4] "Financial outsiders" in the Rosenstein and Wyatt (1990) study includes the officers of any potential supplier of capital, including banks, savings and loan associations, investment banking firms, investment advisory firms, insurance companies, and finance companies.

3. Data and Summary Statistics

Companies included in the Standard and Poor's (S&P) Index in 2002, excluding financial companies, form the sample for this study. There are a total of 403 companies,[5] and I follow the board and performance characteristics of these companies between 2002 and 2004. The final sample size is thus 1209 firm-years. A detailed explanation of the data sources and definitions, as well as the descriptive statistics can be found in Chapter 2.

I utilize four separate measures of firm performance: (i) Return on assets, calculated as the ratio of earnings before interest, taxes, depreciation, and amortization to the book value of total assets; (ii) Market-to-book ratio, calculated as the ratio of book value of debt and market value of equity to the book value of total assets; (iii) Cumulative stock market returns on a company's common stock calculated over the previous three years;[6] and (iv) Cumulative stock market returns on a company's common stock controlled for stock price volatility.[7] The first performance metric, return on assets, measures the operational efficiency of a given firm. The second performance metric, also known as Tobin's Q, is used to measure shareholder value and is widely used in the corporate finance literature. However, Tobin's Q can also be interpreted as a measure of a firm's investment

[5] During the sample period, AT&T Wireless was acquired by Cingular, Gillette merged with P&G, and Sears merged with K-Mart. I excluded AT&T Wireless, Gillette, and K-Mart from the sample.
[6] For example, the stock market return for a given company for year 2002 would be calculated as follows: (Stock price at the end of year 2002 / Stock price at the end of year 1999) – 1.
[7] Stock market returns are calculated as in footnote 36, and the stock price volatility is calculated as the variance of daily stock prices over the previous three years for which the return is calculated.

opportunities, and thus has been widely criticized for not being a measure of firm performance. The actual stock market performance and the actual stock market performance scaled by volatility are thus used as alternative measures for the market performance.

Table 1 presents the summary statistics for the alternative performance measures, and the summary statistics for the sub-samples stratified by banker-director presence on a company's board of directors. The average return on assets for the sample firms is 13.9 percent, the average market-to-book ratio is 1.75, the average stock market return is zero, and the average stock market return scaled by the stock price volatility is 0.24.

Panel A in Table 1 compares the means of the performance figures of sample companies that have a commercial bank executive serving on their boards to the means of the performance figures of sample companies that do not have a commercial bank executive serving on their boards. The commercial bankers in Panel A include both the affiliated and the unaffiliated commercial bankers. The univariate results suggest that there are no significant differences in the performance outcomes of the two groups of companies, when firm performance is measured by the return on assets. The means of return on assets are virtually identical: 13.8 percent for the companies with a banker-director, and 13.9 percent for the companies without a banker-director. However, we observe significant

differences in the remaining three performance measures. The mean market-to-book ratio for firms with a banker-director (1.49) is significantly lower when compared to the market-to-book ratio of companies without a banker-director (1.75). However, the stock market returns exhibit an opposite result: Firms with a commercial banker on their boards perform better than the firms with no commercial bankers on their boards. The average three-year stock market return for firms with a banker-director was 7.3 percent, while the average three-year stock market return for firms with no banker-director was –3.3 percent, and the difference in means is significant at the one percent level.

There is a need to reconcile the conflicting results for the market-to-book ratios and the stock market returns. Peterkort and Nielsen (2005) show that there is no relationship between the market-to-book ratio of a firm and its actual stock market performance. One possible explanation for low market-to-book ratios for firms with bankers on their boards is that the market-to-book ratios not only proxy for the market performance, but also for the underlying risk characteristics of a firm's business. In fact, Kroszner and Strahan (2001) discuss in detail that bankers would not be willing to serve on the board of directors of high-risk companies.

I have presented two sets of empirical evidence supporting these beliefs. First, the selection process for bank executives on corporate boards showed that bankers tend to serve on the boards of low-risk companies, where risk is measured

as the standard deviation of the stock market returns (Chapter 2). Second, the analysis of acquisition activities illustrated that when a banker is present on its board, a firm diversifies its operations more; i.e., the firm acquires companies that are in different industries and reduces its risk profile (Chapter 3).

If the low market-to-book ratios proxy for lower risk, the classic risk-return tradeoff would imply that firms with a banker-director do perform very well in the stock markets, with significantly higher returns and lower risk. The performance measure Stock Market Return / Volatility intends to capture this idea. The last row in Panel A shows that the firms with bankers on their boards perform significantly higher per unit of risk (0.76) than do the firms without a banker on their board of directors (0.07).

Panel B and Panel C in Table 1 analyze the affiliated banker-directors and unaffiliated banker-directors separately. The results suggest that the aforementioned positive relationship between banker presence and firm performance is associated with the presence of the affiliated banker-directors (Panel B), and not with the presence of unaffiliated banker-directors (Panel C). Panel B compares the performance metrics of the companies with at least one affiliated banker on their boards and of the companies with no affiliated banker on their boards. Like previous results, there are no significant differences in return-on-assets when an affiliated banker is present and when an affiliated banker-

director is not present on a board, but we see significant positive correlation between the presence of an affiliated banker-director on a board and market performance. The mean stock market return over the past three years is 11.2 percent when an affiliated banker serves on the board of directors of a company. The mean stock market return over the past three years is significantly lower at – 2.1 percent when an affiliated banker does not serve on the board of directors of a company.

In the following section, I analyze the performance effects of banker-directors within a multivariate framework, controlling for the other determinants of firm performance and the self-selection of companies into hiring a bank executive on their boards.

4. Multivariate Analysis of Firm Performance - Average Treatment Effects Model

The main equation of interest is

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \varepsilon_{it}, \quad (1)$$

where Y_i is the performance of firm I in year t, X_i is the set of firm-specific control variables that are established to be correlated with firm performance (see Appendix A), and D_i is a dummy variable indicating the presence of a bank executive on the company's board of directors.

The analysis of the correlation between firm performance and the banker presence on a board is subject to the endogeneity issues described in detail in Chapter 2. Companies that have a banker on their boards are not a random sample. The probability of having a banker on a company's board is a function of the firm's size, extent of information asymmetry, stock market return volatility, and debt level, which are also highly correlated with firm value. Furthermore, Gilson (1990) shows that creditors tend to join following poor performance, arousing the concern for a reverse-causality problem between performance and banker-director presence.

As in the previous chapters, I control for the endogeneity between firm performance and bankers' presence on boards by fitting a treatment effects model, which considers the effect of an endogenous binary treatment on a fully observable continuous variable and at the same time allows for a direct test of endogeneity and selectivity. The model is summarized by the following system of equations:

$$Yi = \beta_0 + \beta_1 X_i + \beta_2 D_i + \varepsilon_i \quad (2a)$$

$$D_i^* = \delta Z_i + u_i \quad (2b)$$

$$D_i = 1 \quad \text{if} \quad D_i^* > 0$$

$$D_i = 0 \quad \text{if} \quad D_i^* \leq 0$$

D_{it} is an endogenous dummy variable indicating whether firm i had a bank executive serving on its board in year t. The binary decision to employ a bank executive on the board of directors is modeled as an outcome of an unobserved latent variable, D_i^*. Z_i is a set of characteristics that affect the acquirer's decision to have a banker-director, and they correspond to the variables explained in Chapter 2. The individual error terms, ε_i and u_i, are assumed to have a bivariate normal distribution:

$$\varepsilon_i \sim N(0,\sigma)$$

$$u_i \sim N(0,1)$$

$$corr(\varepsilon_i, u_i) = \rho .$$

The parameters of the model are estimated by full information maximum likelihood (Maddala, 1983; Greene, 1980; Greene, 1995a).

Control variables

Appendix A gives a brief summary of the models that have been employed in a sample of recent studies of corporate performance and identifies the set of control variables that have been established to have a significant correlation with firm performance outcomes. In light of the literature on firm performance, I include

three sets of control variables in my analyses. The first set of control variables includes the major firm characteristics that correlate with performance: firm size, research and development activity, and leverage ratio. Firm size is measured as the natural logarithm of net sales. Research and development activity of a firm is proxied by the ratio of the R&D expenditures to net sales. Leverage ratio is the ratio of total debt (long-term debt and debt in current liabilities) to the market value of the company.

The second set of control variables includes the variables that proxy for the various corporate governance devices that have been argued to affect firm performance. The overall corporate governance quality is proxied by the governance index (Gompers, Ishii and Metrick, 2003). I also include the board size (Yermack, 1996) and ratio of independent directors on board as control variables.

The last set of control variables relate to the managerial incentives. I summarize the alignment of managerial incentives with shareholders' incentives by the percentage of common stock held by a company's executives.

Finally, the regressions control for industry effects and year effects.

4.1. Commercial bank presence on a company's board and return on assets

Table 2 presents the results for Equation (2a), where the dependent variable is the operating performance (return on assets), proxied with EBITDA / Assets. The

regressions control for the prior performance of a company through the inclusion of lagged return-on-assets in the treatment equation (Equation 2b),[8] so the concern for a reverse-causality in the analysis is minimal. The tests for independent equations are rejected at the one percent level, pointing to a strong endogeneity between banker-director presence and firm performance.

In Column 1, the treatment variable is the presence of a commercial bank executive on a company's board of directors, where the commercial bank executives include both affiliated and unaffiliated bankers. The results indicate that the presence of a commercial banker on a board is positively associated with the operating performance of the company, once I control for other determinants of firm performance and the underlying selection mechanism. The coefficient on the banker-director dummy is 0.08 (i.e., 8%) and is significant at the one percent level of significance. Given that the mean return-on-assets is 13.9 percent for the whole sample, the effect of bank representation on a board of directors on firm performance is economically significant.

In Column 2, the treatment variable is the presence of an unaffiliated banker-director on a company's board of directors. The sample size used for the analysis of unaffiliated banker-directors is smaller, because I exclude the firms with an affiliated banker-director from the sample in order to have a more

[8] The performance variable and the other explanatory variables in the treatment equation are the average of lagged values for the previous three years.

meaningful comparison group. The effects of unaffiliated banker-directors on return-on-assets is also positive (coefficient=0.09), and economically and statistically significant.

Finally, in Column 3, the treatment variable is the presence of an affiliated banker-director on a company's board of directors. It has been often argued that the presence of affiliated bankers may be detrimental to firm value. The affiliated banker-directors potentially have the severest conflicts of interests with the shareholders of the company (Kroszner and Strahan, 2001; Guner et.al., 2006). Also, Gilson (1990) shows that the affiliated bankers join corporate boards following financial distress, so their presence may signal worse performance. I do not find any evidence for the detrimental effects of affiliated banker-directors. The results show that their presence on boards is also associated with a statistically significant higher firm performance (coefficient=0.084). In Table 2, Panel B, I re-estimate the ROA regressions separately for each year, and the results from the yearly regressions are consistent with the pooled regressions.

Overall, the above regressions provide some evidence for a significant positive correlation between the presence of a bank executive on a company's board of directors and the company performance, regardless of the affiliation status of the bank executive.

The relatively large magnitudes of the coefficients from the average treatment effects model are due to the underlying matching process that has been controlled for, and should be interpreted differently than an OLS coefficient. For example, in Column 1 of Table 2, we see that the presence of at least one commercial bank executive on a board is associated with 8.5 percentage points of an increase in return on assets, which seems quite large as the mean of return on assets is 13.9 percent for the whole sample (Table 1). However, the regressions control for the underlying matching process that has been described in detail in Chapter 2: (i) Not every company would find it beneficial to add a bank executive on its board; we would expect that companies that have more sound financial and operational structures would be willing to reveal their types, ask for the services of a bank executive on their boards, and subject themselves to closer bank monitoring; and (ii) Not every bank executive would be willing to serve on the board of directors of a company; we would expect that they would accept directorships on boards of financially sound companies in order to avoid conflicts of interest with the shareholders, in terms of the equitable shareholder and due diligence doctrines. As a result of these dynamics, once a company offers a directorship position to a bank executive and the bank executive accepts to serve on the board, the performance outcomes would be much larger than the performance affects when a random bank executive joins the board of directors of a random company.

4.2 Commercial Bank Presence on a Company's Board and Market-to-Book Values

Table 3 repeats the average treatment effects analysis, using the market-to-book ratios as the dependent variable in Equation (1b). The market-to-book ratio is approximated as the ratio of sum of the book value of total debt and market value of equity to the book value of total assets, and is often used in the literature as a measure of a how much the market values a company.

In Column 1, the treatment variable is the presence of a commercial banker on a board, irrespective of her affiliation status. The coefficient on the treatment dummy equals –1.29 and is significant at the one percent level. The relationship between the bank representation on a board of directors and the market-to-book ratio thus remains negative even when we control for the other major determinants of market valuation and the underlying self-selection mechanism.

Column 2 and Column 3 analyze the presence of unaffiliated bankers and affiliated bankers respectively. As in the analysis of return-on-assets, the sample sizes differ because of how the control groups are constructed. In the case of unaffiliated bankers, the control group includes firms with no banker-directors on their boards, while the firms with an affiliated banker are excluded. In the case of affiliated banker-directors, the control group includes firms with unaffiliated banker-directors as well as firms without any banker-directors. The results suggest

that the market does not differentiate between the affiliated banker presence and unaffiliated banker presence on boards. Both types of banker-directors are associated with lower market-to-book ratios.

These results – the negative relationship between banker-director presence and market valuations -- are not consistent with the previous findings, and remain as a puzzle for which further investigation is needed.

4.3 Commercial Bank Presence on a Company's Board and Stock Market Performance

In this section, I examine how the bank representation on a board affects the actual stock returns of a company in order to investigate the more measurable affects of banker directorships on shareholder well being. The results are presented in Table 4, Panel A. The performance variable is the stock market returns over the previous three years.[9]

The results indicate that the firms with a commercial banker on their boards perform better than the firms without a commercial banker on their boards (Column 1). The coefficient of 0.89 on the banker dummy is both statistically and economically significant. As in the case of return-on assets, the positive effects of bankers belong to both unaffiliated bankers (Column 2) and affiliated bankers

[9] For example, the performance for a firm in 2002 is the recorded return on its common stock between the end of year 1999 and end of 2002.

(Column 3). In Panel B, I re-estimate the stock market performance regressions separately for each year and present the coefficients belonging to the banker-director indicator variables. The positive relationship between banker-director presence on a company's board of directors holds for years 2002 and 2003, but becomes negative in year 2004. One explanation for the reversal may be the presence of bank executives' being associated with technology firms, which recorded disproportionate gains through early 2000s,[10] but further investigation of this claim is necessary and left for future research.

Table 5, Panel A repeats the same analysis. The only difference is that in Table 5, the performance variable is the stock market returns over the previous three years scaled by the standard deviation of monthly stock market return over the same period. The standard deviation of stock market returns is used as a proxy for firm risk, and the scaling is performed to control for the risk-return tradeoff.

The results in Table 5 mimic the results in Table 4. The firms with a commercial banker on their boards perform better than the firms without a commercial banker on their boards (Column 1), and the positive effects of bankers again belong to both unaffiliated bankers (Column 2) and affiliated bankers (Column 3).

[10] Goldfarb et al. (2006) argue that only 50 percent of the dot-com companies survived through 2004.

One potential problem with the dependent variable employed in Table 5 is that a manager with self-interest may want to decrease the risk of her company to inflate the performance metrics.[11] In Table 6, the regressions directly control for stock market volatility by including a measure of stock price volatility among the control variables instead of scaling the stock return by volatility. The results are in line with the results presented in Table 5. The presence of a bank executive on a company's board of directors is associated with higher stock market performance after having controlled for a company's riskiness.

Next, I explore the possibility that the company risk as measured with the share-price volatility itself is related to the presence/absence of a banker and is thus endogenous. In Table 7, I present the results from the following simultaneous equations model, where company risk is modeled as an endogenous variable:

$$\text{Banker-Director Presence} = f(\text{Company Risk, Other Company Characteristics}) + e_1 \quad (3a)$$

$$\text{Company Performance} = f(\text{Banker-Director Presence, Company Risk, Company Characteristics}) + e_2 \quad (3b)$$

$$\text{Company Risk} = f(\text{Banker-Director Presence, Company Characteristics}) + e_3 \quad (3c)$$

All dependent variables in the system are explicitly taken to be endogenous and are treated as correlated with the disturbances in the system's equations. The system is estimated by the three-stage least squares method. The results from the

[11] For example a manager may choose to invest only in short-term T-bills; and the small volatility from this investment decision could erroneously make him/her look like a "star".

simultaneous equations model where company risk is modeled as an endogenous variable are in line with the previous findings: The banker-director presence on a company's board of directors is associated with higher stock market returns for that company.

5. Conclusions

Chapter 2 shows that the presence of a commercial banker on a board is associated with a significant increase in the amount of private debt, an increase in overall debt ratios, a significant reduction in the price of private debt, and a significant decrease in the dependence on collateral and financial covenants when raising private debt. Chapter 3 analyzes a sample of acquisition decisions when a banker-director is present and shows that a banker's presence on a board does not lead to excessive acquisition activity, and is associated with an increase in shareholder value following the acquisition announcements. Finally, this chapter argues that these positive effects of banker-directors on firm financing and investment outcomes should feed back into overall firm performance and firm value, and investigates the effects of the presence of a bank executive on the board of directors of a non-financial company on return-on-assets, and market-to-book ratios and stock market performance.

The results give support for a positive effect of banker-directors on firm performance, when performance is measured as return-on-assets and returns on

common stock. However, when performance is measured in terms of market-to-book ratios (Tobin's Q), the relationship between the banker presence on a board and performance is negative. The negative relationship between Tobin's Q and banker-director presence may be explained by bankers helping the companies to achieve their optimal marginal Q ratios. How that would be reflected in the average ROA and average Q figures is unclear, and should be investigated further. This chapter makes a first pass attempt to identify preliminary relationship, and these inconsistent results remain as a puzzle in this research and are left for exploration in future research.

A major policy implication of this research concerns the regulations surrounding the composition of board of directors. Recent regulatory changes strongly discourage public corporations from using the services of related parties (affiliated directors, gray directors) on their board of directors. However, as this research illustrates, banker-directors, although classified as affiliated parties, may be contributing positively to firm financial outcomes, investment outcomes, and performance outcomes, and their departures from company boards as a result of regulatory pressures may not necessarily lead to better outcomes for investors.

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Appendix A: Summary of empirical models employed in the recent literature on corporate performance

Study	Performance Measure	Control Variables	Method
Core, Hotlhausen and Larcker, 1999, JFE	ROA	Predicted Excess Compensation (-)	OLS
		StDEv of ROA (-)	
		Sales (+)	
		Year Dummies	
		Industry Dummies	
	Stock Return	Predicted Excess Compensation (-)	OLS
		STDev of Stock Return (-)	
		Market Value of Equity (-)	
		MTB (-)	
		Year Dummies	
		Industry Dummies	
Daines, 2001, JFE	Tobin's Q (simple measure)	Delaware Dummy (+)	OLS
		ROA (+)	
		R&D (+)	
		Number of business Segments (-)	
		Firm Size (-)	
		Two-digit SIC	
Shin and Stulz (2000)	Tobin's Q (simple measure)	Firm Size	OLS
		Firm Age	
Gompers, Ishii and Metrick (2003)	Tobin's Q (simple measure)	Firm Size	Fama and MacBeth
		Firm Age	
		G-Index	

Anderson and Reeb (2003)	EBITDA/Assets	Family Firm (+) CEO Hire (+) CEO Founder (+) CEO Descendant (+) Indside Ownership (NS) Blockholders (-) CEO equity-based pay (+) R&D (+) LT Debt / Total Assets (+) Volatility (-) Firm Size (+) Firm Age (-)	OLS
	Net Income / Assets	Family Firm (+) CEO Hire (+) CEO Founder (+) CEO Descendant (+) Indside Ownership (NS) Blockholders (-) CEO equity-based pay (+) R&D (+) LT Debt / Total Assets (-) Volatility (-) Firm Size (-) Firm Age (-)	OLS
	Tobin's Q (simple measure)	Family Firm (+) CEO Hire (+) CEO Founder (+)	OLS

		CEO Descendant (+) Indside Ownership (NS) Blockholders (-) CEO equity-based pay (+) R&D (+) LT Debt / Total Assets (-) Volatility (-) Firm Size (-) Firm Age (-) Two-digit SIC Year Dummies	
Bebchuk and Cohen, 2004, WP	Tobin's Q (simple measure)	Staggered Board (-) Firm Size (-) Firm Age (-) Delaware Dummy (+NS) ROA (+NS) CAPEX / Assets (+) RD / Sales (+NS) Two-digit SIC Year Dummies RD Missing	OLS

Table 1. Summary Statistics for the Performance Variables

The table presents summary statistics for the performance variables. The sample consists of 404 non-financial companies that were included in the S&P500 Index in 2002, followed between 2002 and 2004. Return on assets is EBITDA/ Total Assets. Market-to-book ratio is the sum of book value of debt and market value of equity to total assets. Market value is the sum of market value of common stock, liquidating value of preferred stock, and book value of total debt. Volatility is measured by the standard deviation of monthly stock returns over the previous three years.

Panel A. Comparison of Means by Commercial Bank Executive Presence on a Board

An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate.

	Whole Sample	Commercial bank executive is present on board	Commercial bank executive is not present on board	Hypothesis: Equal Means (Prob>t)
Return on Assets	0.139	0.138	0.139	0.798
Market-to-Book Ratio	1.749	1.552	1.814	0.002***
Stock Market Return	-0.007	0.073	-0.033	0.005***
Stock Market Return / Volatility	0.241	0.759	0.069	0.023**

Panel B. Comparison of Means by an Affiliated Commercial Bank Executive Presence on a Board

An "affiliated banker-director" is an executive of a bank with an outstanding loan relationship with the company during the previous five years.

	Whole Sample	Affiliated bank executive present on board	Affiliated bank executive not present on board	Hypothesis: Equal Means (Prob>t)
Return on Assets	0.139	0.142	0.138	0.649
Market-to-Book Ratio	1.749	1.495	1.780	0.014**
Stock Market Return	-0.007	0.112	-0.021	0.010***
Stock Market Return / Volatility	0.241	1.124	0.132	0.019**

Panel C. Comparison of Means by an Unaffiliated Commercial Bank Executive Presence on a Board

An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years.

	Whole Sample	Unaffiliated bank executive is present on board	Unaffiliated bank executive is not present on board	Hypothesis: Equal Means (Prob>t)
Return on Assets	0.139	0.133	0.140	0.260
Market-to-Book Ratio	1.749	1.597	1.814	0.043**
Stock Market Return	-0.007	0.043	-0.033	0.114
Stock Market Return / Volatility	0.241	0.474	0.069	0.299

*, **, *** denote significance at the 10 percent, 5 percent and 1 percent level respectively.

Table 2. Banker-Directors and Return on Assets

The table presents the estimation results for the treatment equation: Equation (1a) in the text. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The dependent variable is return-on-assets and is equal to EBITDA/Assets. Firm size is the logarithm of net sales. Lagged ROA Volatility is the variance of return-on-assets during the previous 10 years. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. R&D is research and development expenditures. Market-to-Book Ratio is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Executive Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on the board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Pooled Regressions for 2002 - 2004

	(1)	(2)	(3)
Banker Dummies			
Banker-director	0.0848***		
	(0.0000)		
Unaffiliated Banker-Director		0.0924***	
		(0.0000)	
Affiliated Banker-Director			0.0845***
			(0.0000)
Control Variables			
Size	0.0001	-0.0018	0.0015
	(0.9790)	(0.6000)	(0.6090)
Lagged ROA Volatility	-2.6506***	-1.9741**	-2.3905***
	(0.0000)	(0.0500)	(0.0010)
R&D Expenses / Net Sales	-0.0782***	-0.1237***	-0.0873***
	(0.0060)	(0.0020)	(0.0020)
Total Debt / Market Value	0.0000**	0.0000	0.0000***
	(0.0440)	(0.4970)	(0.0030)
Market-to-Book Ratio	0.0369***	0.0362***	0.0365***
	(0.0000)	(0.0000)	(0.0000)
Governance Index	0.0004	0.0015	0.0005
	(0.6650)	(0.1170)	(0.5540)
Executive Ownership	-0.0005	-0.0001	-0.0006

	(0.3020)	(0.8070)	(0.2530)
Ratio of Independent Directors	-0.0529*	-0.0566*	-0.0449*
	(0.0530)	(0.0520)	(0.0630)
Board Size	-0.0104	0.0040	0.0023
	(0.4540)	(0.7880)	(0.8490)
Constant	0.0738*	0.0756*	0.0438
	(0.0610)	(0.0630)	(0.2290)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	Fama-French 48	Fama-French 48	Fama-French 48
Observations	1193	1063	1193
Prob > Chi2	0.0000	0.0000	0.0000
rho	-0.8776	-0.8682	-0.8357
sigma	0.0642	0.0678	0.0580
lambda	-0.0563	-0.0588	-0.0485
Test of Independent Equations: P>chi2	0.0000	0.0000	0.0000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Panel B. Coefficients Belonging to the Banker-Director Dummy Variables from Estimations for Individual Years

		Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
2002	*Coefficient*	0.0930***	0.1013***	0.0971***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0000	0.0000
2003	*Coefficient*	0.0916***	-0.0720***	0.0816***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0001	0.0000
2004	*Coefficient*	0.0902***	0.0982***	0.0767***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0009	0.0000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Table 3. Banker-Directors and Market-to-Book Ratios

The table presents the estimation results for the treatment equation: Equation (1a) in the text. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The dependent variable is market-to-book ratio, which is calculated as market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Firm size is the logarithm of net sales. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. Return-on-assets equals EBITDA/Assets. R&D is research and development expenditures. Executive Ownership is the percentage of the common stock owned by the management of the company. Board size is the logarithm of number of directors on the board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Pooled Regressions for 2002 - 2004

	(1)	(2)	(3)
Banker Dummies			
Banker-director	-1.297***		
	'(0.000)		
Unaffiliated Banker-Director		-1.334***	
		'(0.000)	
Affiliated Banker-Director			-1.401***
			'(0.000)
Control Variables			
Size	-0.120***	-0.129***	-0.142***
	(0.006)	(0.005)	(0.000)
R&D Expenses / Net Sales	1.548**	1.513**	1.620**
	(0.043)	(0.044)	(0.041)
Total Debt / Market Value	0.000	0.000	0.000
	0.264	0.101	0.438
Return on Assets	7.490***	7.558***	7.748***
	(0.000)	(0.000)	(0.000)
Governance Index	-0.044***	-0.041***	-0.062***
	(0.000)	(0.002)	(0.000)
Executive Ownership	0.013**	0.016**	0.012**
	(0.034)	(0.022)	(0.048)
Ratio of Independent Directors	1.288**	1.209**	1.112**

	(0.011)	(0.020)	(0.019)
Board Size	-0.071	-0.296	-0.151
	0.749	0.206	0.445
Constant	1.938***	2.406***	2.259***
	(0.001)	(0.000)	(0.000)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	Fama-French 48	Fama-French 48	Fama-French 48
Observations	1192	1062	1192
Prob > Chi2	0.000	0.000	0.000
rho	0.873	0.869	0.896
sigma	1.023	1.013	0.948
lambda	0.893	0.880	0.850
Test of Independent Equations: P>chi2	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Panel B. Coefficients Belonging to the Banker-Director Dummy Variables from Estimations for Individual Years

		Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
2002	*Coefficient*	-1.2011***	-1.2893***	-1.2845***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0000	0.0000
2003	*Coefficient*	-1.3635***	1.5852***	-1.4559***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0000	0.0000
2004	*Coefficient*	-1.3679***	-1.4937***	-1.3104***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0000	0.0000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Table 4. Banker-Directors and Stock Market Performance

The table presents the estimation results for the treatment equation: Equation (1a) in the text. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The dependent variable is the return on a firm's common stock over the previous three years. Firm size is the logarithm of net sales. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. R&D is research and development expenditures. Return-on-assets is equal to EBITDA/Assets. Market-to-Book Ratio is calculated as the market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Executive Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on the board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Pooled Regressions for 2002 - 2004

	(1)	(2)	(3)
Banker Dummies			
Banker-director	0.897***		
	'(0.000)		
Unaffiliated Banker-Director		0.967***	
		'(0.000)	
Affiliated Banker-Director			0.864***
			'(0.000)
Control Variables			
Size	-0.049**	-0.057**	-0.049**
	(0.047)	(0.021)	(0.024)
R&D Expenses / Net Sales	-0.246**	-0.258**	-0.361***
	(0.054)	(0.037)	(0.008)
Total Debt / Market Value	0.000	0.000**	0.000
	(0.152)	(0.080)	(0.263)
Return on Assets	1.007***	1.101***	1.045***
	(0.000)	(0.000)	(0.000)
Market-to-Book Ratio	0.000	-0.010	-0.013
	(0.981)	(0.601)	(0.481)
Governance Index	-0.005	-0.002	-0.006
	(0.509)	(0.830)	(0.500)
Executive Ownership	0.004	0.002	0.003

	(0.319)	(0.483)	(0.495)
Ratio of Independent Directors	-0.008	-0.067	0.103
	(0.974)	(0.805)	(0.652)
Board Size	-0.226*	-0.083	-0.106
	(0.083)	(0.526)	(0.371)
Constant	0.555	0.355	0.407
	(0.104)	(0.299)	(0.215)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	Fama-French 48	Fama-French 48	Fama-French 48
Observations	1185	1055	1185
Prob > Chi2	0.000	0.000	0.000
rho	-0.871	-0.897	-0.851
sigma	0.600	0.586	0.548
lambda	-0.522	-0.525	-0.466
Test of Independent Equations: P>chi2	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Panel B. Coefficients Belonging to the Banker-Director Dummy Variables from Estimations for Individual Years

		Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
2002	*Coefficient*	0.8654***	1.0119***	-0.3092***
		(0.0000)	(0.0000)	(0.0830)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0000	0.0805
2003	*Coefficient*	0.9679***	1.0693***	0.9040***
		(0.0000)	(0.0000)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0000	0.0000
2004	*Coefficient*	-0.3736***	-0.3488***	-0.6061***
		(0.0760)	(0.1940)	(0.0060)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0298	0.1310	0.0069

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Table 5. Banker-Directors and Stock Market Performance adjusted for Risk

The table presents the estimation results for the treatment equation: Equation (1a) in the text. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The dependent variable is the return on a firm's common stock over the previous three years, scaled by volatility. Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Firm size is the logarithm of net sales. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. R&D is research and development expenditures. Return-on-assets equals to EBITDA/Assets. Market-to-Book Ratio is calculated as the market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Executive Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on the board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Pooled Regressions for 2002 - 2004

	(1)	(2)	(3)
Banker Dummies			
Banker-director	6.739***		
	(0.000)		
Unaffiliated Banker-Director		6.719***	
		(0.000)	
Affiliated Banker-Director			7.088888
			(0.000)
Control Variables			
Size	-0.531***	-0.667***	-0.492***
	(0.007)	(0.001)	(0.006)
R&D Expenses / Net Sales	-0.009	-0.358	-0.929
	(0.992)	(0.672)	(0.278)
Total Debt / Market Value	0.000*	0.000**	0.000
	(0.062)	(0.042)	(0.135)
Return on Assets	7.881***	9.192***	7.875***
	(0.001)	(0.000)	(0.001)
Market-to-Book Ratio	-0.163	-0.268**	-0.211
	(0.264)	(0.071)	(0.124)
Governance Index	-0.045	-0.045	-0.036
	(0.492)	(0.528)	(0.587)
Executive Ownership	0.051	0.038	0.038

	(0.184)	(0.293)	(0.261)
Ratio of Independent Directors	0.472	-0.150	1.330
	(0.818)	(0.944)	(0.471)
Board Size	-2.405**	-1.233	-1.649
	(0.034)	(0.265)	(0.118)
Constant	7.953***	7.363***	6.548**
	(0.005)	(0.010)	(0.017)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	Fama-French 48	Fama-French 48	Fama-French 48
Observations	1185	1055	1185
Prob > Chi2	0.000	0.000	0.000
rho	-0.789	-0.753	-0.810
sigma	4.815	4.634	4.541
lambda	-3.798	-3.490	-3.677
Test of Independent Equations: P>chi2	0.000	0.000	0.000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Panel B. Coefficients Belonging to the Banker-Director Dummy Variables from Estimations for Individual Years

		Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
2002	*Coefficient*	6.7665***	7.5243***	-2.0077
		(0.0000)	(0.0000)	(0.3920)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0019	0.4751
2003	*Coefficient*	7.4653***	-0.0193	7.6247***
		(0.0000)	(0.9950)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.7523	0.0000
2004	*Coefficient*	0.8284	0.1196	-1.0949
		(0.9280)	(0.1940)	(0.6440)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.9792	0.9559	0.0069

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Table 6. Banker-Directors and Stock Market Performance Controlling for Risk

The table presents the estimation results for the treatment equation: Equation (1a) in the text. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The dependent variable is the return on a firm's common stock over the previous three years. Stock Price Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Firm size is the logarithm of net sales. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. R&D is research and development expenditures. Return-on-assets equals to EBITDA/Assets. Market-to-Book Ratio is calculated as the market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Executive Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on the board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Pooled Regressions for 2002 - 2004

	(1)	(2)	(3)
Banker Dummies			
Banker-director	0.8952***		
	(0.0000)		
Unaffiliated Banker-Director		0.9648***	
		(0.0000)	
Affiliated Banker-Director			0.8621***
			(0.0000)
Control Variables			
Size	-0.0516**	-0.0592**	-0.0604***
	(0.0430)	(0.0200)	(0.0080)
Stock Price Volatility	-0.1995	-0.1868	-0.9436
	(0.7500)	(0.7670)	(0.1060)
R&D Expenses / Net Sales	-0.2302*	-0.2446*	-0.2938**
	(0.0860)	(0.0600)	(0.0270)
Total Debt / Market Value	0.0000	0.0000*	0.0000
	(0.1520)	(0.0820)	(0.2750)
Return on Assets	0.9838***	1.0784***	0.9196***
	(0.0010)	(0.0000)	(0.0020)
Market-to-Book Ratio	0.0004	-0.0092	-0.0083
	(0.9820)	(0.6260)	(0.6580)
Governance Index	-0.0055	-0.0020	-0.0067

	(0.4900)	(0.8090)	(0.4090)
Executive Ownership	0.0042	0.0025	0.0029
	(0.3120)	(0.4730)	(0.4300)
Ratio of Independent Directors	-0.0076	-0.0672	0.1022
	(0.9770)	(0.8050)	(0.6570)
Board Size	-0.2311*	-0.0877	-0.1290
	(0.0830)	(0.5130)	(0.2800)
Constant	0.6202	0.4166	0.7152**
	(0.1210)	(0.3130)	(0.0580)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	Fama-French 48	Fama-French 48	Fama-French 48
Observations	1,185	1,055	1,185
Prob > Chi2	0.0000	0.0000	0.0000
rho	-0.8701	-0.8963	-0.8495
sigma	0.5992	0.5852	0.5463
lambda	-0.5214	-0.5245	-0.4641
Test of Independent Equations: P>chi2	0.0000	0.0000	0.0000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Panel B. Coefficients Belonging to the Banker-Director Dummy Variables from Estimations for Individual Years

		Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
2002	*Coefficient*	0.8011***	0.9497***	-0.1872
		(0.0000)	(0.0000)	(0.2970)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0026	0.3276
2003	*Coefficient*	0.9795***	-0.3202	0.9039***
		(0.0000)	(0.2020)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0000	0.0979	0.0000
2004	*Coefficient*	-0.3403	-0.3136	-0.6053***
		(0.1300)	(0.2620)	(0.0070)
	Prob > Chi2	0.0000	0.0000	0.0000
	Test of Independent Equations: P>Chi2	0.0582	0.1785	0.0083

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Table 7. Simultaneous Equations Estimation Treating Stock Price Volatility as an Endogenous Variable

The table presents the results from three-stage estimation of dependent variables listed in equations (3a), (3b) and (3c) in the text. An "unaffiliated banker-director" is an executive of a bank with no outstanding loan relationship with the company during the previous five years. An "affiliated banker-director" is defined as an executive of a bank that has extended at least one loan to the company over the previous five years as a sole lender, or a lead arranger in a syndicate. The dependent variable is the return on a firm's common stock over the previous three years. Stock Price Volatility is measured by the standard deviation of monthly stock returns over the previous three years. Firm size is the logarithm of net sales. Total debt is the sum of short-term and long-term debt. Market Value of the company is proxied as the market value of common stock plus liquidation value of preferred stock plus book value of debt. R&D is research and development expenditures. Return-on-assets equals to EBITDA/Assets. Market-to-Book Ratio is calculated as the market value of common stock plus liquidation value of preferred stock plus book value of debt divided by book value of total assets. Executive Ownership is the percentage of common stock owned by the management of the company. Board size is the logarithm of the number of directors on the board of directors. Insiders include company employees (CEO, CFO, etc.), former employees, relatives of the employees, founders of the company, and relatives of founders that serve on the board. All variables are averaged over the previous three years. All estimations include industry effects (48 Fama-French industry dummies) and year effects and are clustered at the firm level. P-values are in parentheses.

Panel A. Pooled Regressions for 2002 - 2004

	(1)	(2)	(3)
Banker Dummies			
Banker-director	0.9812***		
	(0.0000)		
Unaffiliated Banker-Director		1.9577***	
		(0.0000)	
Affiliated Banker-Director			1.0365***
			(0.0110)
Control Variables			
Size	-0.0743***	-0.0954***	-0.0782***
	(0.0020)	(0.0010)	(0.0000)
Stock Price Volatility	-2.1230**	-2.8401***	-3.9994***
	(0.0420)	(0.0100)	(0.0000)
R&D Expenses / Net Sales	0.0287	0.2572	-0.0875
	(0.8780)	(0.2120)	(0.6320)
Total Debt / Market Value	0.0000	0.0000**	0.0000
	(0.1440)	(0.0260)	(0.8300)
Return on Assets	1.0754***	1.5964***	0.6913**
	(0.0020)	(0.0000)	(0.0290)
Market-to-Book Ratio	-0.0246	-0.0367	-0.0311
	(0.2330)	(0.1100)	(0.1110)
Governance Index	-0.0109	-0.0130	-0.0109

	(0.1530)	(0.1170)	(0.1300)
Executive Ownership	0.0055	0.0018	0.0094***
	(0.1110)	(0.6280)	(0.0080)
Ratio of Independent Directors	0.0972	-0.0178	0.1462
	(0.6340)	(0.9410)	(0.4630)
Board Size	-0.2742**	-0.3041**	-0.2019*
	(0.0220)	(0.0150)	(0.0960)
Constant	1.2940***	1.6604***	1.7104***
	(0.0020)	(0.0010)	(0.0000)
Year Indicator Variables	Yes	Yes	Yes
Industry Indicator Variables	Fama-French 48	Fama-French 48	Fama-French 48
Observations	1,098	968	1,098
Prob > Chi2	0.0000	0.0000	0.0000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively.

Panel B. Coefficients Belonging to the Banker-Director Dummy Variables from Estimations for Individual Years

		Banker-Director	Unaffiliated Banker-Director	Affiliated Banker-Director
2002	*Coefficient*	0.1926	0.5047	-0.1109
		(0.4350)	(0.1410)	(0.7540)
	Prob > Chi2	0.0000	0.0000	0.0000
2003	*Coefficient*	0.4421	1.9587***	1.0335*
		(0.1910)	(0.0000)	(0.0690)
	Prob > Chi2	0.0000	0.0000	0.0000
2004	*Coefficient*	1.6054***	0.5225	7.2185***
		(0.0000)	(0.1450)	(0.0000)
	Prob > Chi2	0.0000	0.0000	0.0000

*, **, *** denote significance at the 10 percent, 5 percent, and 1 percent level respectively

CHAPTER 5

Conclusion

1. Summary of Findings

Utilizing a hand-collected a dataset on the boards of directors for the period 2002-2004 of the companies that constitute the S&P 500 Index as of 2002, this study presents evidence for a positive role played by bank executives who serve as directors of non-financial companies on financial outcomes of those companies. The presence of banker-directors on company boards are associated with better financing outcomes: an increase in private debt finance, lower cost of private borrowing, and decrease in the restrictive covenants included in private debt contracts (Chapter 2). There is no evidence for conflicts of interest between the banker-directors and shareholders leading to sub-optimal acquisition decisions: The shareholders respond positively to acquisition announcements when a creditor serves on the board of directors of an acquirer (Chapter 3). The return-on-assets and stock market performance of a company is higher when a banker is present on its board (Chapter 4). One contrasting result, though, is the lower market-to-book ratios in the presence of a banker-director (Chapter 4). Why better financing outcomes, acquisition outcomes, and performance do not lead to higher market-to-book ratios remains as a puzzle and left for future research.

2. Contributions

An advantage of my research strategy arises from my controls for the endogeneity between a banker's presence on board of directors and the observed

financial outcomes. Previous research on banker-directors suggests that the companies that have bankers on their boards are not a random sample. The probability of having a banker on a board is a function of firm size, the extent of information asymmetry between the firm and the financing community, debt levels, and board size. Building an average treatment effects model, I explicitly model a company's decision to include a bank representative on its board of directors, and then estimate the effects of banker-directors on financial outcomes conditional on the selection of bankers to the company boards.

The findings in this study contribute to the extant literature on banker-directors in a number of ways: Most importantly, evidence for affiliated banker-directors performing a monitoring function on boards of directors and reducing the information problems has not been presented previously. In Chapter 2, I show that once we control for the differences between companies that select to include a banker on their boards and companies that do not, the impact of an affiliated banker-director on a company's debt ratio is positive, which is a novel result in literature. I also provide evidence for the first time in the literature that an affiliated banker-director is associated with more favorable price and non-price terms in individual loan contracts. Chapter 3 is the first study that analyzes the effects of banker-directors on firm acquisition outcomes. I show that shareholders respond positively to the major acquisition decisions when a commercial bank executive serves on an acquirer's board. Again, the findings of Chapter 4 are novel

in the literature, and provide the first evidence that the presence of a banker-director on a company's board is associated with the firm's return on assets and the return on the firm's common stock.

3. Caveats and Directions for Future Research

This scope of this study is limited as it utilizes a hand-collected dataset. The dataset provides information on the board composition for three years between 2002 and 2004. Even though the information on the dates when a banker-director joined the board of directors of a company is present, we do not have a full picture of the board composition before 2002.

In Chapter 2, I presented evidence that the presence of a banker-director is associated with higher debt levels, and the increase in debt finance is attributed to an increase in private debt, utilizing a panel data on board composition and firm financial variables between 2002 and 2004. A better approach would be to perform a direct test of whether the addition of a banker-director leads to a change in the debt ratios. I could not perform an analysis of this kind, because I do not have the full history of board composition. It is very common that an addition of a banker-director follows a departure of a former banker-director, and I would need to determine such events before I could analyze the changes in debt ratios.

In Chapter 3, I presented evidence that the presence of an affiliated banker is associated with an increase in shareholder wealth following acquisition announcements. Analyzing the reactions of private debt holders to the acquisition decisions could expand the study, and it would be valuable to investigate whether the shareholder wealth increase arises at the expense of debt-holder wealth.

I did not explore whether the firms actually finance the acquisitions with loans taken from the bank where the director serves as an executive. Such analyses would provide additional insight into the roles of affiliated banker-directors when companies undertake major investment decisions.

Also, it would be worthwhile to analyze the general covenants included in private debt contracts and seek evidence of whether the presence of an affiliated banker-director limits the scope of investments a company could undertake. I could not identify enough number of such covenants to perform such a study with the board data I have.

Chapter 4 presented evidence that the presence of a banker-director on a company's board is associated with better firm performance, using accounting returns and stock market returns between 2002 and 2004. The study could be expanded by providing additional evidence from analyzing shareholder reactions to banker appointments to boards, as well as shareholder reactions to bank loan announcements when a banker-director is present. Again, these analyses would

require further data collection. The most significant caveat in the findings is the negative relationship between market-to-book ratios and the banker presence on a board. This result is inconsistent with the rest of the findings and remains as a puzzle in this research and is left for exploration in future research.

4. Policy Implications

A properly motivated board of directors, with appropriate incentives, is one of the most vital institutions of corporate governance. I show that, in the US context where shareholder rights are high, when a firm includes a banker on its board, there are significant positive effects on its financial outcomes. This is an important finding at a time when board members who have business relationships with the company are being discouraged from serving on boards both in the U.S. and abroad. Some business relationships that are strengthened by board representation may actually help improve governance; banking relationships are one of these, and policy makers should not promote a one-size-fits-all approach to improve governance.