The Impact of Boards with Financial Expertise on Corporate Policies*

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Abstract

Financial scandals and failures have induced regulatory efforts to improve the financial expertise of board members. However, directors with financial expertise are often affiliated with a financial institution and may not act in the best interest of shareholders. This conflict of interest matters if the influence of board members goes beyond mere monitoring and affects corporate policies. We employ a novel data set of FORBES 500 directors with detailed demographic information from 1988 to 2001 to test for the influence of board members on financing and investment decisions. The long panel allows us to control for firm fixed effects despite the slow-moving changes in board composition. We find that the presence of commercial bankers on corporate boards increases the size of loans to the corporation and decreases investment to cash flow sensitivity, particularly when the director's bank has a lending relationship with the firm. However, the increased access to finance affects mostly firms that have good credit, little financial constraints, and poor investment opportunities. The presence of investment bankers on the board is associated with more frequent outside financing and larger public debt issues as well as poorer stock and earnings performance after acquisitions. Our results are robust to instrumenting for bankers by the number of senior board members. These findings suggest that conflicts of interest arising from financial intermediation can adversely affect corporate governance. As a result, financial experts on corporate boards do not necessarily improve shareholder value.

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The recent wave of accounting and financial scandals has lead to regulatory efforts as well as much press coverage calling for more financial expertise on corporate boards. The implicit assumption behind the reforms is that "an understanding of generally accepted accounting principles and financial statements" will lead to better board oversight.[1] A significant portion of a director's time, however, is spent on advising rather than monitoring the management.[2] Therefore, financial expertise of directors on the board might affect firm policies in more ways than regulators have in mind. This is problematic since financial experts are typically affiliated with financial institutions and may thuis not represent the interest of shareholders.

In this paper, we test whether finance experts on the board have a measurable impact on corporate financing and investment decisions. We first show that there is an empirical link between firm policies and the presence of financial experts affiliated with commercial banks or investment banks. We then analyze whether these effects are in the best interest of the firm's shareholders.

To conduct these tests, we hand-collect biographical data on the directors of Forbes 500 companies from 1988 to 2001. The long, fourteen-year time series is crucial in light of the slow changes in board composition over time. It allows us to identify many of our effects using only within-firm variation, side-stepping the endogeneity issues that arise in cross-sectional analysis.

[1] Section 407 of the Sarbanes-Oxley (2002) Act on the definition of audit committee financial expert. Similarly, all major stock exchanges have introduced listing requirements on director financial literacy.

[2] Fama and Jensen (1983), Adams and Ferreira (2003), Booth and Deli (1999), and Rosenstein and Wyatt (1990).

First, we investigate whether bankers lower the financial constraints of firms on whose board they are serving. We find that firms with commercial bankers on board display less investment to cash flow sensitivity and tend to obtain larger loans. Both effects depend positively on the existence of a lending relationship between the director's bank and the firm. Yet, these patterns need not be value maximizing for the firm. On the one hand, if financial constraints due to information asymmetries induce firms to underinvest (in the spirit of Myers and Majluf (1984) and Fazzari, Hubbard, Petersen (1988)), then the presence of bankers on the board might increase the firm's access to outside financing. This effect in turn should benefit the firm's shareholders. On the other hand, banker directors may act in the best interest of creditors rather than shareholders by, for example, increasing lending business with firms that have very good credit standing but no shareholder-value increasing projects. Further findings suggest that the conflict of interest prevails. The increased access to financing affects mostly those firms that are least financially constrained. Moreover, these firms typically have lower investment opportunities (Tobin's q) and profitability, which persist several years after the borrowing. Rather than easing underinvestment., reduced investment-cash flow sensitivity appears to be accompanied by overinvestment

Second, we analyze the effect of investment bankers' presence on the board on firm policies. We find that their presence is associated with more frequent outside financing in general and with larger public bond issues, particularly if the director's bank is involved in the deal. Investment bankers are able to reduce the cost of underwriting through lower underwriting fees. Yet, this helping hand is visible only when their bank is *not* involved in the deal. We also observe a tendency of boards with investment bankers

to approve (or induce) acquisitions that are potentially value destroying for shareholders. Firms with investment bankers on the board acquire at about the same frequency as do others, but lose more stock value conditional on an acquisition. Our findings suggest that banker directors do have significant impact on firm policies. However, this impact appears to maximize bank profits rather than shareholder value.

As in the previous literature on boards, the main empirical hurdle for this analysis is the issue of endogenous board composition. In particular, the causality between board composition and firm financial policies may be reverse: The firm's financing needs may determine the representation of financial institutions on the board. For example, Stearns and Mizruichi (1993), Pfeffer (1992), and Booth and Deli (1999) all find significant correlations between firm leverage and the presence of bankers on the board. They interpret these findings as evidence for firms' tendency to hire financial directors for their debt market expertise. This potential explanation has raised doubts about the validity of the largely cross-sectional identification in the previous literature. The concern is particularly hard to address since board composition changes slowly over time.

We thus view it as a significant contribution of our project to construct such a long-term data set, stretches over fourteen years, with detailed biographical information on the individuals directors. This data allows us to go beyond merely cross-sectional identification and to employ firm fixed effect. We can thus rule out that our findings are driven by heterogeneity across industries or firms. This leaves us only with the possibility that omitted within-firm variation drives the variation in finance directors and financing (and differently for constrained and unconstrained firms). However, this concern is less severe for two reasons. First the slow-moving evolution of board composition (with an

average director tenure of 10 years) makes such fine-tuning hard to implement. Second, endogeneity has generally less power to explain the results in our paper since it is unclear why firms with less investment to cash flow sensitivity would be more likely to employ bankers on their boards. Nevertheless, we address this concern and use the "number of board members above age 70" as an instrument for the number of commercial bankers on the board. Our main results survive these robustness checks.

By considering the non-monitoring roles of the board, our study differs from most of the prior literature. Numerous studies test the relation between director independence and specific board oversight actions such as adopting anti-takeover defense mechanisms, approving mergers, or hiring and firing of the CEO.[3] We shift the focus from the number of outsiders to the financial industry expertise of these outsiders, and also from board-specific actions to firm financial policies in general.

Other literature has studied the implications of the presence of bankers on board for firm financial decisions, however. Ramirez (1995) finds that firms that had J.P. Morgan executives on their boards displayed lower investment to cash flow sensitivity at the turn of the century. Similarly in Japan, firms with bank ties through membership in a group of companies belonging to a keiretsu (corporate group affiliated to a bank) show less investment to cash flow sensitivity than do non-keiretsu firms (Hoshi, Kashyap, and Scharfstein (1991)). Kaplan and Minton (1994) argue that bankers play a more important role in corporate governance in Japan than they do in the U.S. In Japan, poor stock and earnings performance predicts the appointment of commercial bank executives to boards,

[3] Studies in this context are numerous. See, for instance, surveys like Hermalin and Weisbach (2003), and Bhagat and Black (1999).

but in the U.S., it does not. Morck and Nakamura (1999) confirm this finding. They also point to the possibility that banker-directors act in the best interest of creditors rather than shareholders. The downsizing that accompanies the appointment of a banker to a firm board is observed only when the firm is not a member of a keiretsu. The authors conclude that banks "act mainly to prop up weak firms to defend creditors' interests."

On the topic of financial expertise, Aggrawal and Chadha (2003) find that the presence of directors with a CPA, CFA, or other finance experience on audit committees translates into lower frequency of earnings restatements. Prior research typically attributes the existence of banks to their efficiency in screening and monitoring their borrowers.[4] This production of soft information on borrowers is particularly effective and valuable when the bank has a relationship with the firm through prior lending or through membership in the same group of companies.[5] A natural extension of this argument would suggest that bank-borrower relationships through board ties also work to increase credit availability, thus benefiting the borrower shareholders. Focusing on the conflicts of interest that can lead to troubles for the bank, Kroszner and Strahan (2001a, b) document that commercial bankers avoid lending to risky firms on whose boards they serve. We find, however, that when banks lend instead to stable (financially unconstrained) firms with board ties, loan size indeed tends to be larger. Yet, this increased credit availability

[4] See Diamond (1984), Campbell and Kracaw (1980), and Boyd and Prescott (1986). Hadlock and James (2002) show empirically that firms with more information asymmetry are more likely to rely on bank loans than public debt. The empirical literature on the (positive) announcement effects of bank loans provides further support for the view that banks are unique information producers on borrowers (see James and Smith (2000) for a survey).

[5] For instance, Petersen and Rajan (1994) show that lending relationships benefit small firms by increasing credit availability. Hoshi, Kashyap, and Scharfstein (1991) document that membership in a "keiretsu" reduces the firm's dependency on internal funds for investments.

does not seem value maximizing for shareholders. Like Morck and Nakamura (1999), we conclude that banker-directors seem to emphasize policies that benefit the creditors rather than the shareholders. This is consistent with the findings of Kracaw and Zenner (1998) that stock prices respond negatively to the announcement of a bank loan to firms that have a representative of the lending bank on the firm's board.

The rest of the paper proceeds as follows. In Section I, we describe the data. Section II presents the tests on investment to cash flow sensitivity and board financial expertise. Section III relates the results to the borrowing policies of the firm. Section IV documents corporate policies affected by the presence of investment bankers. Section V concludes.

I. Data

We analyze a sample of publicly traded companies from 1988 to 2001. We build on the data employed in Hall and Liebman (1998) and Yermack (1995) merged with CEO demographic information from Malmendier and Tate (2004). To be included in the sample, a firm must be in a non-financial industry and appear at least four times on one of the lists of largest US companies published by Forbes magazine from 1984 to 1994. We collect biographical information on the board members of these companies using the annual proxy statements (1988–1997) and the IRRC database (1998–2001) and code each outside director's job into one the following categories according to her main employer: (1) commercial bank executive, (2) investment bank executive, (3) executive of a non-bank financial institution, (4) consultant, (5) lawyer, (6) current or past executive of a non-financial firm that falls outside these categories, and (7) non-corporate

worker, which includes careers such as those in academia, nonprofit or civil activist organizations, and politics.[6]

With additional data collection, we refine the identification of the first two career types. The distinction between commercial and investment banker is often unclear, for example if the description of the director's employer is vague or missing. In these cases, we compare the employer name to the list of US chartered commercial banks compiled by the FDIC. If this step returns no hit, we then search the list of investment banks in the Carter–Manaster IPO underwriter reputation rankings updated by Loughran and Ritter (2004). Note that to be considered a banker, the director has to be a current executive of the bank; board membership does not count. The exception to this rule is when the director retains a seat on the bank's board upon retiring from her executive position.[7]

The initial data collection yields more than 33,000 observations after dropping firm–years that have no data on investment and cash flow. Table I presents the summary statistics on the directors sample. 27% of the directors are insiders (those that are current or former employees of the firm or relatives of executives), 45% are former or current executives in non-financial industries, and 10% are in non-corporate careers. As shown in Table II, 25% and 16% of the firm-years, respectively, have a director from a commercial or an investment bank. We denote a commercial banker as affiliated if her bank has lent

[6] Retired directors are classified into the category most in line with their pre-retirement work history. In a small number of cases, we know only that the director is retired, but nothing about their past employment. These directors are classified in category (6).

[7] Like unclassifiable retired directors, retired bankers who do not retain their seat on the bank's board are classified in category (6) above. These cases are rare and the potential measurement error induced by including them in the control sample (if they still function as bankers or financial experts on the board) works against finding significant effects in our regression analysis.

to the firm in the past (and if the loan is observed in the Dealscan database). According to this construction, 22% of the commercial banker–years involve an affiliated banker. The four columns on the right describe the variables in subsamples split by the presence of bankers on the board.

We supplement our board data set with accounting and financial information from COMPUSTAT. The resulting sample contains 288 different firms and about 2900 firm–year observations. We measure investment as capital expenditures (item 128), capital as property, plants, and equipment (item 8), and cash flow as earnings before extraordinary items (item 18) plus depreciation (item 14). We normalize cash flow by lagged capital. Tobin's Q is the market value of firm's assets normalized by total book assets (item 6), where the market value is approximated as total assets plus market equity (item 25 multiplied by item 199) minus book equity. Book equity in turn is equal to assets (item 6) minus liabilities (item 181) minus preferred stock liquidating value (item 10) plus balance sheet deferred taxes and investment tax credit (item 35) plus convertible debt (item 79). If this computation yields no result, we measure book equity as item 60. Cash flow normalized by capital inevitably contains a few extreme values. To avoid the confounding effect of outliers on our results, we trim the sample at the one percent level.

We further supplement our sample with data from various sources such as CRSP (for monthly stock returns), I/B/E/S (for analyst coverage), SDC (for public debt and equity issues, and acquisitions), and the Loan Pricing Corporation's Dealscan (for bank loans).

II. Finance Experts on the Board and Corporate Investment

The core question of this paper is whether and how board members with financial expertise affect corporate policies. We first investigate whether bankers on the board help firms to overcome financial constraints. Our analysis follows a top-down approach; we first examine the net effect of financial experts on the board on the firm's real investment decisions, and then consider directly their impact on the firm's financing decisions.

A. Investment to Cash Flow Sensitivity

To test the effect of the presence of bankers on the board on the firm's investment decisions, we estimate the following model in which firm investment is determined as a function of firm and board characteristics:

$$I_{it} = \alpha + \beta_1 Q_{it-1} + \beta_2 CF_{it} + \beta'_3 FIN_{it} + \beta'_4 FIN_{it} * CF_{it} + \beta'_5 X_{it} + \beta'_6 X_{it} * CF_{it} + \varepsilon_{it}$$

CF stands for cash flow, Q is market value of assets over book value of assets, FIN is the set of proxies for board financial expertise (the presence of investment and commercial bankers on the board), and X is the array of other controls. X includes the natural logarithms of firm and board size and fixed effects for year, S&P rating, firm, and industry, where industry is defined according to Fama and French's seventeen industry groups. To gauge the marginal effect of interest, we test for the significance of the β_4 coefficient. To correct for heteroscedasticity and possible correlation of errors within firms, we cluster standard errors at the firm level.

In Column I of Table III, we present the baseline regression results without the banker indicators (and firm fixed effects), and in Column II we include the banker variables in the model. The coefficient of the interaction of commercial banker and cash

flow, (COMBANKER)*(CF), is negative and statistically significant at the 5% level, suggesting that firms with at least one commercial banker on board demonstrate less sensitivity of investment to cash flow. The coefficient estimate on the investment banker and cash flow interaction term is also negative, but statistically insignificant. Unreported estimations show that these findings are robust to using the number of bankers on the board scaled by the size of the board, or using the number of bankers without scaling—while continuing to include board size as a control. We also find that the presence of other (non-bank) finance executives on the board does not affect investment cash flow sensitivity, suggesting a unique role for bankers among potential "finance experts."

As in any empirical work on the impact of individuals, such as executives or board members, on corporate decision-making, a prime concern is the possibility that unobserved firm heterogeneity may be driving the results. The panel structure and long sample period of our data set allows us to address this concern by including firm fixed effects. In Column III, we add indicators for each firm, but do not interact them with cash flow. In Column IV, we raise the hurdle and also include in the model (firm)*(cash flow) interactions (while dropping industry fixed effects to avoid perfect collinearity). The commercial banker effect survives both of these robustness checks.[8]

To judge the economic significance of (COMBANKER)*(CF), we estimate the model of Column II excluding all cash flow interaction terms but the one with commercial banker. The coefficient estimate is 0.206 for cash flow and –0.122 for

[8] Note that there is sufficient variation in the COMBANKER dummy in the sample to identify the effects from within-firm changes. In 74 cases, the dummy variable changes from 0 to 1, and in 96 cases, from 1 to 0. This pattern implies that the value of the dummy variable shows time-series variation in 108 firms out of the 282 in the whole sample, which in turn affects 1236 firm-years out of the 2888 in total.

(COMBANKER)*(CF). At the sample mean of cash flow (0.35), these estimates imply an investment–cash flow sensitivity of 7.2 cents per dollar for firms with no commercial banker on their boards and 2.9 cents per dollar for firms with at least one commercial banker on their boards. As an alternative method, we estimate the baseline model (without cash flow interactions) once for those firms with a commercial banker on board and once for those without. We find that cash flow has a coefficient estimate of 0.218 in the non-banker sample, and an estimate of 0.037 in the banker sample. At the sample mean of cash flow, these values correspond to investment–cash flow sensitivity levels of 7.6 cents per dollar for the non-banker sample, and 1.1 cents per dollar for the banker sample.

The above results indicate a significant reduction in investment-cash flow sensitivity when commercial bankers are present on corporate boards. Moreover, we have ruled out that this finding is due to heterogeneity among firms. The remaining concern is unobserved within-firm heterogeneity. Specifically, bankers may be asked to join boards precisely when the firm is planning to raise external financing. Similarly, bankers may agree to join boards only if they foresee a profitable financing opportunity within the firm.

It turns out that such endogenous selection of bankers as board members is, practically, less straightforward to implement. Corporations appear to be rather careful not to vary board size too much. In fact, in more than 45% of all firm-years in our data, board size does not change from one year to the next. The median change from year to year is 0 and the mean change is -0.104 (with a standard deviation of 1.314). Changes are about equally likely to be positive and negative, further contributing to the stability of

board size. Overall, firms appear to be reluctant to increase their board size, consistent with inefficiency of large boards (Yermack (1996)).

Nevertheless, to further address the possibility that the presence of commercial bankers on the board and investment cash flow sensitivity are determined endogenously from a long-run perspective, we would like to identify a source of exogenous variation in bankers on the board and analyze whether we still find a decrease in investment-cash flow sensitivity after instrumenting for the presence of bankers. For the time period and sample of firms employed in this paper, we identify the age structure of boards as such an instrument. The feasibility of age as an instrument for commercial bankers builds on the following empirical observations. First, directors that are older than 70 are less likely to be commercial bankers (Table 1); in fact, there are 892 commercial-banker directors in our sample that are younger than 70, compared with only 10 that are older than 70.[9] Moreover, senior directors have typically served for a while (Figure 2); their mean tenure is significantly higher than that of younger directors. Given the stability of board size, firms that wish to add a banker to the board may wait for another director to leave. Therefore, a board with lots of senior members may have exogenously fewer bankers than boards that more quickly turn over their directors. As Figure 1 illustrates, the number of directors over the age of 70 is negatively correlated with the number of commercial bankers on the board. In Figure 2, we show supportive evidence that boards with many senior directors (and thus with few commercial bankers) indeed desire more

[9] One possible reason for this pattern is that commercial bankers tend to stay on board for shorter periods. Their mean tenure in the sample is 8.1 years whereas the mean tenure of other directors is 9.8. Another possibility, given the long tenures of senior directors, is that they were hired at a time when bankers were less common in the pool of potential directors.

bankers on the board; the number of directors over the age of 70 predicts a future increase in the number of commercial bankers.

In Table IV, we present the results of the two-stage regressions where the number of directors over the age of 70 instruments for the number of commercial bankers. We thus instrument for COMBANKER and (COMBANKER)*(CF) with (#Age>70) and (#Age>70)*(CF). Our identifying assumption is that having directors over the age of 70 does not directly influence firm investments in general and investment-cash flow sensitivity in particular. Though this assumption seems reasonable given standard finance theory, we add controls for mean board tenure and its square to alleviate the potential concern that directors with long tenure on the board, such as those over the age of 70, pursue different investment strategies than directors with shorter tenures, perhaps due to entrenchment.[10] In Column I, we report the results for the baseline regression with the actual number of commercial bankers used in the model. In Columns II and III, we report the first stage regressions to verify that the instruments are indeed partially correlated with the variables for which they instrument. At least one instrument is statistically significantly in each regression, and in both models Wald tests reject at the 5% level that the coefficients on (#Age>70) and (#Age>70)*(CF) are jointly equal to zero. Finally, in Column IV, we show that the (COMBANKER)*(CF) effect is still negative and statistically significant when COMBANKER and its interaction with cash flow are instrumented by (#Age>70) and its interaction with cash flow. These results strengthen

[10] There are also behavioral stories in which director age could influence firm policies. For instance, as explained in Malmendier and Tate (2004), corporate leaders that have experienced the Great Depression era may be skeptical of depending on external financing (and particularly debt finance). Note that the results are robust to further controlling for mean board age and CEO age.

the argument that bankers on the board decrease the firm's dependence on internal funds for investment purposes.

B. Do Bankers on the Board Maximize Value for Shareholders?

If costly external financing due to capital-market imperfections is driving the investment-cash flow sensitivity (Fazzari, Hubbard, and Peterson (1988)), then our findings point to the potential benefit of appointing commercial bankers to boards of directors. The reality might be less simple, however. On the one hand, the boardroom presence might indeed enhance the bank's ability to reduce agency and information costs, leading to increased access to outside finance for the firm. On the other hand, the bank has little incentive to act in the best interest of the firm's shareholders, because its shareholdings (in the U.S.) are insignificant compared to its existing or potential loans to the firm (Gorton and Winton (2003)). The interests of creditors and shareholders may coincide in a beneficial way for both types of stakeholders if the firm is initially underinvesting due to financing constraints. But this need not be the case. Creditors would prefer to increase exposure to a firm particularly when the firm is less risky. If more stable firms tend to be less financially constrained,[11] then increased outside financing has little or no marginal benefit to shareholders. In the worst case, if additional outside financing facilitates overinvestment, then shareholders might lose at the expense of creditors.

Assuming that the wedge between internal and external financing is not the same for all firms, it is thus a useful exercise to measure the banker effect as a function of the cross-sectional variation in financial constraints. To conduct this test, we split our sample

[11] Consistent with this hypothesis, we do find in our data that firms we identify as financially constrained receive significantly less attractive loan prices.

according to a priori measures of financial constraints. Empirically, this is no straightforward task. As Kaplan and Zingales (1997; KZ from hereon) point out, simple proxies like firm size and dividend payout do not necessarily correlate well with financing constraints.[12] KZ instead measure financial constraints by using both quantitative (accounting variables) and qualitative data (annual proxies, interviews with managers, etc). They then estimate a logit regression to construct an index that captures financial constraints as a weighted average of several firm characteristics. We construct the KZ index for our sample firms, following standard practice (Baker, Stein, and Wurgler (2003), Lamont, Polk, and Saá-Requejo (2001), Malmendier and Tate (2004)). The firm-year specific KZ measure is computed as:

$$KZ_{it} = -1.001909 * \frac{CF_{it}}{K_{it-1}} \_ 0.2826389 * Q_{it} + 3.139193 * Leverage_{it}$$

$$- 39.3678 * \frac{Dividends}{K_{it-1}} - 1.314759 * \frac{C_{it}}{K_{it-1}},$$

where CF stands for cash flow, K for capital, Q for Tobin's q, and C for cash and short-term investments. Higher values of the KZ index indicate more financial constraints.

We also check our results' robustness to several other proxies for financial constraints: (1) credit ratings, (2) financial analyst coverage, and (3) standard deviation of quarterly analyst earnings estimates. We consider investment-grade rating (BBB and above) as an indicator that the firm has minimal difficulty accessing external capital markets.[13] The number of analysts covering the stock and the degree of disagreements

[12] Using model-generated data, Moyen (2004) shows that firms with low dividend payout—considered to be more financially constrained in several studies—are in fact more likely to come from the unconstrained sample than the constrained one.

[13] We only consider the subsample of firms with rated debt in this analysis.

among them serve as proxies for a main source of financial constraints, the degree of information asymmetry associated with the firm.[14]

Table V summarizes the results of the split-sample regressions. For brevity, we report only the coefficient estimates of the banker-cash flow interactions, while the model we estimate is the one shown in Column II of Table III. We start by re-estimating this model in subsamples split according to the sample median of the (lagged) KZ index, where KZ values above the median denote the constrained firms. The results in Column I show that commercial bankers decrease investment cash flow sensitivity, but only for those firms that are likely to be financially unconstrained. The coefficient estimate on the interaction term is insignificant and *positive* among the constrained firms. The findings are similar when the sample is split according to the investment grade criterion, the sample median of the number of analysts covering the firm stock, or the sample median of the standard deviation of the quarterly earnings estimates on the stock. We thus find little evidence that bankers on the board ease information asymmetries and financial constraints for the firms that are most in need.

We also try to identify the mechanism behind the commercial banker effect. Specifically, we test (indirectly) whether the effect comes through the expected channel: the banker's ability to increase loan availability to the firm using her bank. If this is the case, we should observe that the effects are stronger when the firm has a lending relationship with the director's bank. To test this conjecture, we consider a commercial banker "affiliated" if her bank has lent to the firm in the past (this could involve participating in a syndicate and could have occurred before the banker joined the board).

[14] For analyst and forecast data, we use the quarter that ends before the annual proxy meeting.

Using indicators for affiliated and unaffiliated bankers on the board, we re-estimate the investment-cash flow model and report the results in Table VI. As Column I demonstrates, (affiliated commercial banker)*(CF) has a larger negative coefficient estimate than (unaffiliated commercial banker)*(CF). (The coefficients are statistically different from each other at the 5% confidence level.) In Columns II and III, we repeat the estimation among KZ-constrained and unconstrained firms subsamples. Once again, we detect no commercial banker effect among the constrained firms. Among the unconstrained firms, only the interaction term on the affiliated commercial banker retains statistical significance. Column III shows the estimation results. (Affiliated COMBANKER)*(CF) has a coefficient estimate of –0.225 (t–statistic = 2.50), compared with –0.07 (t–statistic = 1.62) for the estimate on (Unaffiliated COMBANKER)*(CF), where the difference between the two estimates is significant at the 10% level. In other words, the banker effect on the investment-cash flow sensitivity seems to depend strongly on the existence of a lending relationship between the firm and the director's bank. We do two important robustness checks on these results. First, to limit the impact of endogenous selection on the results, we create a third category ("grey commercial bankers") for commercial bankers who join a firm with which their bank has a pre-existing lending relationship. These directors are affiliated under our original classification. Isolating these bankers does not change the estimated impact of affiliated banker-directors on investment cash flow sensitivity. Second, we drop firm years that contain banker-directors who cannot be classified as affiliated or unaffiliated due to censoring of the Dealscan data. In particular, we have no loan data prior to 1988, so all banker-directors who are already on the board in 1988 cannot be classified (until they

make their first affiliated loan). Our initial classification scheme would classify these directors as unaffiliated, to bias against finding an affiliation result. Again, the results are qualitatively similar.

Next, we examine this lending relationship more directly; namely, we analyze the frequency, cost, and size of bank loans obtained as a function of the banker's presence on the board and in the deal.

III. Bankers and Outside Financing: A Closer Look at the Lending Channel

We search the Loan Pricing Corporation's Dealscan database for bank loans obtained by our sample firms. Dealscan provides detailed contractual data on loan terms as well as the names of all lenders in the deal (see Güner (2005)). We consider a banker-director as affiliated if her bank is a member of the lending syndicate. Table VII summarizes the data. Of the 1314 loans where the loan size is available, 99 are obtained by firms with an affiliated commercial banker on the board (in 53 of these deals the director's bank acts as a lead manager), 200 by those with an unaffiliated commercial banker, and 1015 by those without a commercial banker at all. The affiliated deals tend to involve larger and cheaper loans than do others, as the statistics on tranche ($ millions), and drawn and undrawn spreads (in basis points) indicate. However, firm characteristics other than board composition may explain these results; for instance, affiliated loans also tend to go to larger firms. Below we conduct a multivariate analysis to isolate the effect of bankers on loan terms.

A. Bankers on the Board, Loan Size, and the Cost of Borrowing

We regress the loan size on the presence of banker directors, controlling for an array of firm, board, and contract characteristics. We include the logarithm of firm total assets; Tobin's q; plant, property, and equipment over assets; stock volatility; leverage; log board size; the ratio of independent directors on the board; and fixed effects for S&P credit ratings, year, and industry to control for firm and board heterogeneity. As controls for contract features, we use the logarithm of the days between the contract initiation and maturity, a dummy that indicates that the deal is originated by a syndicate rather than a sole lender, number of lenders in the syndicate, and indicators for seniority and security of the loan. (See the appendix, reproduced from Güner (2005), for more details on these variables.)

In Column I of Table VIIIA, we show that the presence of commercial bankers on the board is positively associated with loan size, even after including all the controls. The results in Column II demonstrate that the effects are driven by affiliated deals, as the coefficient estimate on the indicator for unaffiliated commercial banker is insignificant. In Columns III and IV, we repeat the estimations in subsamples split by the KZ index. The loan size effect exists only for financially unconstrained firms when the director's bank is involved in the deal. Affiliated loans are on average $552 million larger (t = 2.17) than loans obtained by firms without a commercial banker on board. In contrast, the coefficient estimate on Unaffiliated COMBANKER is only $187 million, statistically insignificant (t = 0.87), and significantly different from the coefficient on Affiliated COMBANKER at the 10% level.[15]

[15] The result is robust to scaling the loan size by total firm value.

To deal with the confounding effects of endogeneity on the interpretation of the results, we do robustness checks using firm fixed effects and the instrumental variables approach described in Section II.A. Column V of Table VIII shows that the loan-size effect of commercial bankers is robust to instrumenting for bankers with the number of directors over the age of 70. In Column VI, we introduce firm fixed effects to the model, and find that Affiliated COMBANKER is still positive with a sizeable magnitude of $938 million and marginal statistical significance (t–statistic = 1.63).

Finally, we analyze whether the effect is stronger when the director's bank is the lead manager in a syndicate. Since terms of loan contracts are mostly determined by the lead managers, we conjecture that the effect should be more pronounced when the larger loan size indeed reflects the bank's choice. The results in Column VII confirm this hypothesis; Affiliated LEAD COMBANKER has a coefficient of $754 million (t–statistic = 1.90), compared with only $87 million for Affiliated PARTICIPANT BANK. In Column VIII, we verify the pattern's robustness to the inclusion of firm fixed effects.[16]

In Table VIIIB, we report the results of regressing the two components of the cost of borrowing, drawn and undrawn spread, on the logarithm of deal size and the set of controls employed above. We find that commercial bankers on the board, regardless of

[16] Note that, the fixed-effects model coefficients on Affiliated Combanker and Lead Combanker dummies are identified using the within-firm variation in about 20% of the firms in the sample. More explicitly, Affiliated Combanker dummy changes its value in 28 cases in the unconstrained sample, which affects 114 observations (out of 575 in total). Similarly, the value of Affiliated Lead Combanker changes 23 times, affecting 104 observations (out of 575). Overall, there are 30 observations where the director's bank is a lead manager and 16 where it is a participant among the loans to unconstrained firms. Also note that the results in Columns V through VIII hold similarly in the full sample.

affiliation, have no significant association with loan prices.[17] Note that this absence of a banker effect is consistent with the result documented in Kroszner and Strahan (2001b), where they use a smaller sample of firms that borrow around the year 1992. The lack of a pricing result within the unconstrained firms also alleviates the potential concern that inadequate controls for firm risk among this subsample drive the results on loan size. If loan size is negatively correlated with firm risk and we had not properly accounted for differences in risk, then we would also expect to observe lower interest rates for the affiliated deals.

Overall, then, bankers on the board appear to encourage additional borrowing, particularly from their own banks, but without offering any price advantage to the firm.[18] And, this additional source of finance seems to be unavailable to the most financially constrained firms.

B. Is More Outside Financing More Efficient?

So far, the results on both investment-cash flow sensitivity and loan availability have demonstrated that bankers on the board have the most influence on firm policies in the least financially constrained firms. This finding suggests that banker-directors may not

[17] Interestingly, however, the coefficient estimate on affiliated bankers, albeit statistically insignificant with t-statistics of 1.27 and 1.62, is positive with sizeable magnitudes for both components of the loan pricing among financially constrained firms. Going back to Table VIIIA, we notice that the coefficient estimate on Affiliated COMBANKER shown in Column III has a negative coefficient estimate among the constrained firms. These firms, that would potentially benefit the most from increased access to outside financing, seem to experience a grabbing, rather than a helping, hand of the commercial bankers on their boards.

[18] We show in Table XII that firms with commercial bankers on board are, if anything, slightly more likely to take a loan in a given firm year (though the result is not significant). This result, coupled with the loan size result, suggests that these firms do indeed receive more funds through loan financing.

act in the best interests of shareholders: they increase lending to stable, prosperous firms rather than to firms that are likely to be underinvesting due to financing constraints. Next we look at operating performance when firms with commercial bankers on board take loans to see whether there is evidence that the additional finance induces shareholder value-destroying investment decisions.

Specifically, we analyze firm performance conditional on obtaining loans, as a function of the presence of bankers on the board and their affiliation with the lenders. For every year in which a firm obtains at least one bank loan, we track the firm performance in a three-year window around the year of borrowing. Averaging across the firms in the same director affiliation category, we illustrate the results in Figure 3. First, among the unconstrained firms, we observe that firms with affiliated directors have Tobin's Q lower than that of firms with unaffiliated directors. If Tobin's Q is a proxy for the quality of investment opportunities, then this finding does not justify the larger loans obtained by firms with affiliated directors. To see whether this result is supported by other measures of operating performance, we repeat the exercise with ROA and ROE. In both dimensions, (unconstrained) firms obtaining loans from the director's bank appear worse than those that obtain unaffiliated loans. On the other hand, firms with affiliated lending do not perform differently from firms without commercial bankers on the board. The fact that firms that obtain unaffiliated loans perform better than those with no bankers on the board suggests that bankers can benefit shareholders, perhaps by facilitating financing only when investment opportunities are good. But, when the banker director has a conflict of interest due to a lending relationship, the benefits from this advisory role disappear.

While these results suggest an inefficient timing of borrowing when the lender is affiliated, the pattern in Tobin's Q might also suggest an alternative interpretation. If low Tobin's Q is a proxy for undervaluation, then the firm will be reluctant to issue securities in the market. As a result, increased access to credit through the director's bank might solve the firm's financing problems. Then, the slight pickup in Q after the borrowing would be consistent with subsequent correction in firm value. Inconsistent with this explanation, however, Figure 4 shows that the market-to-book value of "equity" among affiliated firms is rather flat, particularly when compared to that of unaffiliated firms, suggesting that either the undervaluation of the firm as a whole does not affect its equity, or the potential benefits to increased financing do not accrue to shareholders.

To check the robustness of these findings to variation in firm characteristics and to gauge their significance and persistence, we regress, in the unconstrained firms sample, future performance variables on indicators for the presence of an affiliated commercial banker and the "absence" of a commercial banker on the board (the omitted case is the indicator for unaffiliated commercial bankers), as well as past firm and board characteristics. The results in Table IX show that Tobin's q, over the three-year horizon after the borrowing, is lower for firms with affiliated lending, albeit without statistical significance. In terms of ROA and ROE,[19] firms perform significantly worse after affiliated deals than they do after unaffiliated deals, even controlling for past firm and board characteristics. Note that the ROA effect may be a mechanical result of the growth in firm assets (due to the larger loan) coupled with stable earnings. However, this argument would not explain the ROE effect.

[19] To deal with outliers, we censor future ROE at –0.25 and +0.25 and use the Tobit model for estimations. The results are similar if we use the OLS model with uncensored values.

The poor investment opportunities and post-loan operating performance of firms after affiliated deals might raise the question of whether the increased lending by the banker to these firms is indeed an attractive business opportunity for the bank. That is, does the increased lending and induced investment make the firm more likely to default on its obligation to the bank? Operating performance measures might be poor indicators for the firm's payback ability; so, we use more direct measures to analyze further the future change in default risk.[20] In the right columns of Table IX, we report probit regressions where the dependent variable is a future upgrade in the S&P credit rating of the firm. The results demonstrate that firms are *more* likely to be upgraded by the S&P; for instance, over the three-year horizon after the lending, these firms are 36% more likely to be upgraded. In unreported estimations, we verify that there is no significant difference in the likelihood of a downgrade. In addition, we construct our own measure of default likelihood, by computing the number of standard deviations between the firm's market value of assets and total liabilities.[21] These (unreported) estimations confirm that firms with affiliated loan deals move further away from the default (or insolvency) point than do firms with unaffiliated deals.

Finally, even if bankers induce some inefficient investment, larger loans may still increase firm value if the borrowing firm is initially away from its optimal target leverage ratio (where the tax benefits are maximized with respect to bankruptcy risk). If affiliated

[20] Recall that we already showed in Section III.A. that there is no difference in the loan prices these firms receive relative to firms with unaffiliated bankers, suggesting no systematic difference in credit risk at the time of borrowing.

[21] We follow the methodology Moody's KMV employs for calculating default likelihoods. A detailed description of their method is available on http://www.moodyskmv.com/. Roughly speaking, we jointly estimate the market value and volatility of the firm's assets using the Black-Scholes options pricing formula.

loans move the firm closer to a higher, optimal leverage ratio that is otherwise difficult to attain, then affiliated loans may be a positive contribution of the banker director to firm value. Graham (2000) finds, for example, that firms tend to use debt conservatively relative to the available tax benefits of new issues—particularly in large, liquid, profitable firms with low distress costs (i.e. the type of firm in our unconstrained subsample of firms). To see whether the data is consistent with this positive interpretation of the banker's influence on financing policy, we check the change in the firms' leverage after the loan deals as a function of the presence of an affiliated banker on the board.

To begin, we regress the post-borrowing change in book leverage on the banker dummies and controls for the change in the ratio of plant, property and equipment over total assets; change in Tobin's Q; change in the natural logarithm of sales; change in ROA; and the natural log of board size. The evidence is mixed. Defining leverage as the sum of long-term debt and current liabilities divided by the quantity long-term debt plus current liabilities plus book equity (LEVERAGE1) and including industry and year fixed effects, we find that within unconstrained firms affiliated bankers lead to a significantly larger change in leverage from the end of the fiscal year prior to borrowing to the end of the first full fiscal year after the loan than non-banker directors. Further, there is no significant effect on the change in leverage associated with unaffiliated commercial bankers over the same interval.[22] However, any advantage of affiliated bankers in increasing leverage appears to be short-lived. For example, the change in leverage from the end of the year before to the end of the third full year following the loan is not significantly larger for affiliated commercial bankers than for non-commercial banker

[22] The difference between unaffiliated and affiliated bankers is not statistically significant, though the affiliated banker effect is more than 5 times as large as the unaffiliated banker effect.

directors (though the effect is still positive and similar in magnitude to the shorter interval result). And, over this interval, unaffiliated commercial bankers are associated with a significant and larger positive change in leverage.[23] In the constrained subsample, we do not find any significant impact of affiliated or unaffiliated commercial bankers on post-loan changes in leverage.[24] We find similar results defining book leverage instead as the difference in assets and book equity divided by assets (LEVERAGE2). The results, however, are not very robust to alternative specifications. There are no significant effects of commercial bankers, even in the unconstrained subsample, without the industry and year fixed effects. Including firm, rather than industry, effects yields similar results under the first definition of leverage, but eliminates the positive short term change in leverage with an affiliated banker using LEVERAGE2. Further, we do not find significant results if we use changes in market leverage (defined either as the sum of long-term debt and current liabilities divided by market capitalization (MLEVERAGE1) or the difference in assets and book equity divided by the quantity assets minus book equity plus market equity (MLEVERAGE2)), regardless of specification.[25]

We also look at leverage and changes in leverage over the whole sample period (and not just around loan years) to see whether any of the leverage effects generalize.

[23] Again, the difference between the affiliated and unaffiliated commercial banker effects is not statistically significant. Here, though, the unaffiliated commercial banker effect is 25% larger than the affiliated commercial banker effect.

[24] The effect of affiliated bankers on the four year change from the end of the year before to the end of the third full year following the loan is similar in magnitude in the constrained sample to the unconstrained sample. The effect of unaffiliated bankers is virtually 0, even over the longer interval.

[25] The lone possible exception, surprisingly, is that under the second definition of market leverage there appears to be a short term positive change in leverage for affiliated directors among unconstrained firms. The result only exists for the window from the year before to the end of the first full year after the loan and is only marginally statistically significant at the 10% level.

When we use LEVERAGE1, we find that affiliated commercial bankers are associated with significantly higher levels of and annual changes in leverage among unconstrained firms. The result holds controlling for the ratio of plant, property and equipment over total assets; Tobin's Q; the natural logarithm of sales; and ROA (in changes when the change in leverage is the dependent variable). We also include the natural logarithm of board size as a control and lagged leverage when the level of leverage is the dependent variable. The results are robust to including various combinations of firm, industry, and year fixed effects. The weakest result statistically is the specification that excludes all fixed effects, though even there the affiliated banker effect is generally significant at the 10% level. On the other hand, there is no effect of commercial bankers – affiliated or unaffiliated – within constrained firms. The results are quite different, however, if we use LEVERAGE2. With this definition, there are no significant effects of commercial bankers – affiliated or unaffiliated – in either constrained or unconstrained firms on either leverage or changes in leverage, regardless of the specification. The results using market leverage mirror the book leverage findings. Using MLEVERAGE1, we find similar results to LEVERAGE1 (though the results are economically and statistically weaker). On the other hand, there are no significant results using MLEVERAGE2.

There is evidence, then, that the larger loans provided by affiliated bankers carry through to book leverage. However, it is less clear whether these effects are part of a systematic strategy to raise leverage. The effects appear to be short-lived (relative to the impact of unaffiliated commercial bankers and non-banker directors) and the evidence is mixed as to whether these directors tend to raise leverage overall, outside of the time

frame surrounding the loan from their bank.[26] The findings overall suggest that bank executives use their directorships to increase lending to the firms on whose boards they serve. However, the fact that the firms to which they provide this source of funds generally have low constraints for obtaining outside finance and low credit risk, coupled with relatively poor investment opportunities and low returns on their investments, supports the hypothesis that bankers serving on the boards of other firms act in the best interest of creditors rather than the shareholders of the companies they serve.

IV. Investment Bankers on the Board

Our findings so far have emphasized the role of commercial bankers serving on the boards for the financing decisions of the firm. Although we find no net effect of investment bankers on investment to cash flow sensitivity, it is possible that these directors still influence firm policies more closely related to their realm of expertise, such as securities issues and mergers. We start by examining the impact of investment bankers on the board on public debt contracts.

[26] We also note that the post-loan book leverage results allow us to refine our interpretation of the earlier loan size results. Repeating the loan-size estimations given in Table VIII Column II separately for credit lines and term loans reveals that the coefficient on Affiliated Combanker ($267 million) is larger than that on Unaffiliated Combanker ($51 million) among credit lines, but not among term loans (the coefficient is $491 million for Affiliated Combanker compared with $531 million for Unaffiliated Combanker). Thus, much of the effect of affiliated commercial bankers comes from providing larger credit lines to the firm. However, the leverage results suggest that firms do indeed draw on these credit lines in the short run and they are, therefore, an important source of immediate financing.

A. Size and Cost of Public Debt Issues

We obtain contractual data on public debt issues for our sample firms from the SDC. As the summary statistics in Table X show, the sample includes 217 debt deals where the director's investment bank is an underwriter of the issue, 693 deals where the director's bank is not involved in the deal, and 3249 deals where the firm has no investment banker on the board. As with loans, affiliated debt issues tend to be larger than others. The cost to the firm of borrowing, at-issue yield (as a spread over the relevant treasury benchmark) and gross spread (underwriter fees as a percentage of the principal amount issued), both seem the lowest for unaffiliated deals.

As before, we put these observations to the test in a multivariate framework that controls for firm, board, and contract characteristics. The firm controls are Tobin's q; plant, property and equipment over assets; stock volatility; leverage; the natural logarithm of total assets; board independence; the natural logarithm of board size; and indicators for year, S&P credit rating, and industry. As contractual features, we include in the model the logarithm of the days between the issue and the maturity date, the logarithm of the principle issued, indicators for over-the-counter listings and variable-rate coupon issues, and indicators for covenants on call, put, and sinking funds provisions (see the appendix for further details on these variables). We start by regressing the at-issue yield on board composition and other controls. In Column I of Table XI, we observe a negative but insignificant effect of both affiliated and unaffiliated investment bankers on the board. As regards the underwriter fees, the results in Column II show that firms with investment bankers on the board enjoy reduced costs of public borrowing, but only when the director's bank is *not* involved in the deal. The coefficient estimate on Unaffiliated

IBANKER is –0.063 (t = 2.50, and different from the coefficient on Affiliated IBANKER at the 10% level), which corresponds roughly to 10% of the sample mean of gross spread.

In Columns III and IV, we document the results on debt size. The presence of an investment banker on average is associated with a deal size that is $21 million larger. This magnitude is economically significant, as it is equal to 14% of the sample mean for principal amount issued. The effect seems to be driven by affiliated directors, as the coefficient estimate on Affiliated IBANKER is $59.6 million (t–statistic = 1.53), compared with $6.3 million (t–statistic = 0.51) for the estimate on Unaffiliated IBANKER.[27]

Investment bankers on the board have similar effects on the size of public debt issues to the effects of commercial bankers on loan size. They are associated with larger public issues, especially when their bank is involved in the underwriting. They are also able to obtain lower underwriting fees for the firms they serve—possibly due to their negotiation skills and networks in the industry—but only when the objective of maximizing the profits to their bank does not get in the way.

B. Frequency of Outside Financing

We have shown the effects of board composition on financing contracts conditional on the firm obtaining outside financing. We now analyze whether the presence of bankers on the board also influences the unconditional probability that the firm will obtain financing.

[27] The result is robust to scaling debt size by total market value of firm; in fact, the coefficient on Affiliated IBANKER then becomes significant at 5%, while that on Unaffiliated IBANKER remains insignificant at 10%. We cannot reject the two coefficients are statistically different at 10%, however. Also, these results on debt price and size are not robust to including firm fixed effects.

To this end, we identify the financing years (loans, public debt and equity) in the whole sample, and regress these indicators on board and firm characteristics in probit models. The results are given in Table XII, where the reported coefficients denote the marginal effects of the explanatory variables on the probabilities.

We start with the event of an outside financing in general, which indicates that the firm has issued at least one bank loan, public debt, or public equity during the year. As shown in Column I, investment bankers are significantly associated with a higher frequency of outside financing. Commercial bankers, on the other hand, although they appear with a positive coefficient, have an insignificant effect. In Columns II and III, we consider the components of outside financing separately, and find that the presence of investment bankers is positively associated with the frequency of both bank loans (coefficient = 0.099) and capital markets financing (coefficient = 0.06). Further partitioning capital market financing into debt and equity issuances, in Columns IV and V, we observe that investment bankers on the board are positively associated with each type of financing, although without statistical significance (t–statistics are 1.21 and 1.52, respectively, for equity and debt financing). Finally, we analyze whether the presence of an investment banker on the board renders one type of financing more likely than others. An immediate conjecture would be that investment bankers would favor capital markets financing since that is where their expertise lies. However, the result shown in Column VI does not support this hypothesis, as the coefficient estimate on IBANKER is negative and insignificant.

C. Board Composition and Acquisitions

Another area of expertise that investment bankers bring to the board is mergers. Do they advise and influence the CEO in a way that minimizes value-destroying acquisitions? To analyze the firm's decision to acquire and its performance conditional on acquisitions as a function of the presence of investment bankers on the board, we download mergers data from SDC. To be included in our sample, the deal has to be reported as completed, and number of shares acquired has to exceed 50% of the shares of the target outstanding before the deal. We exclude deals that are classified as leveraged buyouts, recapitalizations, self-tenders, spin-offs, exchange offers, repurchases, minority stake purchases, privatizations, and acquisitions of remaining interests. We describe the data in Table XIII. About 20% of the target firms are publicly traded. Where the target value is available, the sample mean is $191.5 million, which corresponds to about 7% of the acquirer's total assets.

First, we test whether firms with investment banker-directors are more likely to acquire other companies. We estimate a probit model where the dependent variable indicates firm-years with at least one acquisition. We find that, controlling for an array of firm characteristics, firms with investment bankers on the board acquire at the same frequency as do other firms.[28]

To measure whether the advice of the investment banker on the board is value-adding conditional on an acquisition, we analyze the market's reaction to acquisition announcements as a function of the presence of an investment banker on the board. We use a (–2, +2) day event window around announcements. To compute the abnormal

[28] We omit a tabulation of the results due to space considerations.

returns, we assume an alpha of zero and a market beta of one for all the firms in the sample. Since beta is likely to be close to one for our sample firms, this assumption minimizes the noise in the estimated abnormal returns due to the noise in the joint estimation of alphas and betas. (The results are similar when we use the market model with estimated alphas and betas.) We also exclude mergers with deal values lower than $1 million.

The mean event return is −161 basis points (t−statistic = 2.95) for firms with an investment banker on the board, and −33 basis points (t−statistic = 1.35) for those without one. The t−statistic for the difference between these two means is 1.98, indicating that the market's reaction to acquisitions by firms with investment-banker directors is significantly lower than to acquisitions by firms without investment bankers on the board. Further, the 161 basis-point decline is roughly three times the mean negative announcement effect to an acquisition in the sample.

As presented in Table XIV, we put this pattern to a multivariate test by regressing the abnormal return on the investment banker dummy, while controlling for the type of financing (stock versus cash deal) and whether the acquisition is a diversifying one (i.e., whether the target and the acquirer share the same 2-digit SIC code). We also include year, industry and credit-rating fixed effects. The estimates yield a negative coefficient on the investment banker dummy (significant at the 10% level), confirming the pattern found in the univariate analysis.

Finally, we check whether the market's negative reaction on announcement days is justified by longer-run firm performance during the 36 months following an acquisition. We construct a hypothetical stock portfolio by averaging the market-adjusted

monthly stock returns in each "event month" following the deal and then compounding the returns over the following 36 months. As Figure 5 demonstrates, the value of $1 invested at the beginning of the period in firms with an investment banker on the board is worth 97 cents at the end of month 36, compared with $1.12 for firms without an investment banker on the board. To address the possible concern that the acquired firms are too small to affect acquirer performance, we repeat the exercise using only the subset of acquisitions where the deal value is available and greater than $5 million. As the right-hand column on Figure 5 shows, a similar pattern emerges.

The above results are suggestive, but we analyze further in multivariate tests alternative measures of firm performance such as buy-and-hold stock returns over the 12, 24, and 36 months following an acquisition, as well as future change in Tobin's q, market-to-book equity, and profitability over the three years following the deal.[29] We control for market equity, book-to-market, firm and board size, board independence, and fixed effects for year, industry, and S&P credit rating. As Table XV shows, future stock returns during all three horizons are significantly lower for firms with investment bankers on the board. Furthermore, firms with investment bankers on the board underperform others in terms of the market-to-book ratio of both assets and equity. This low performance in firm value is also evident in fundamentals; over the three year-horizon, profitability of firms with investment banker-directors on the board falls below that of firms without one.

[29] When the dependent variable is an annual Compustat item, we allow only one acquisition per year to avoid duplicate observations.

A potential concern with attributing the poor stock performance to the presence of investment bankers is that we have not controlled directly for the form of payment.[30] There is evidence that stock mergers perform significantly worse than cash mergers (Loughran and Vijh (1997)). It is also feasible that firms with investment bankers on the board are more likely to acquire using stock rather than cash—firms may even hire the banker for this purpose in the first place. Thus, differences in financing could explain the bad performance of deals when investment bankers are present on the board.

To address this issue, we analyze the type of financing used as a function of board composition. Note that the form of payment is available only for about half of the sample, leaving us with 718 acquisitions down from 1547 in the whole sample. Among this subsample, firms with investment bankers on board indeed complete stock mergers more often than firms without. More explicitly, firms without an investment banker on the board make cash offers 61% (stock offers 25%) of the time, compared with 53% (31% for stock offers) for firms with an investment banker on the board. This difference is not sufficiently significant to explain the results, however. As shown in Table XVI, when we replicate the results of Table XV with further controls for the type of financing,[31] we observe little effect on the IBANKER coefficient.

Overall, these results are supportive of the hypothesis that investment bankers serving as directors are more prone to succumbing to the CEO's value-destroying

[30] Note that the credit rating dummies could provide an indirect control in our prior regressions.

[31] We introduce two dummy variables for the type of financing used. "Cash only" is equal to 1 if all acquisitions in a given year are financed with cash only. Similarly, "Stock only" indicates that all acquisitions in a given year are financed with stock only. The omitted category indicates years with mergers with mixed financing or multiple mergers with different means of financing. The results are similar if we instead define the dummy variable according to at least one event of the type being observed in a given year.

acquisitiveness than are other directors. The role of the banker in the story could even be an active one; investment bankers might be pushing the management for acquisitions even in the absence of attractive targets, in the hope of increasing profits for their banks through advisory fees. Unfortunately, our dataset does not allow us to test this hypothesis, since the identity of the investment banks advising the acquirer is missing in most cases (see Table XIII).

V. Conclusion

The main hypothesis of the paper is that financial expertise and background of directors influences the corporate decision making process. Employing a novel panel dataset on corporate board members, we find that the presence of finance industry experts on the board has important implications for the firm's finance and investment policies. Our main finding is that commercial bankers serving on corporate boards help reduce the sensitivity of investment to the firm's cash flows by increasing its access to loans, particularly through the director's bank. However, the potential benefits do not accrue to the firms that are likely to be financially constrained. Instead, bankers on the board increase financing to firms that have good credit and minimal financial constraints, but that also have poor investment opportunities, suggesting that banker-directors act in the best interests of creditors.

We also analyze and find evidence for the impact of investment banker directors on firm activities such as securities issues and mergers. The presence of investment bankers on the board is associated with more frequent outside financing, larger public

debt issues—as well as poorer firm performance after acquisitions. We conclude that board financial expertise need not be in the best interest of shareholders.

Our findings suggest that the recent quest for increased financial expertise on boards should be implemented with caution. The impact of board members on firm policies appears to go beyond mere monitoring, and the advisory role of directors is affected by director interests that conflict with those of shareholders.

Appendix: Data on Loan and Debt Contracts

Loan Contract Variables (Source: The Loan Pricing Corporation's Dealscan Database)	
All-in spread (drawn)	The amount that the borrower pays the lender each year for each dollar borrowed in the case of a term loan, and for each dollar drawn off a credit line in the case of a loan commitment. The drawn all-in spread equals the coupon spread plus the annual fee. Most spreads are measured as a markup over LIBOR. In cases where they are based on another benchmark, LPC makes adjustments to the drawn all-in spreads, by assuming the following rates: Prime = +255 bps, Cost of funds = 0 bps, Commercial paper = 3 bps, T-bills = –34bps, Fed funds = 0 bps, Money market rate = 0 bps, Banker's acceptance = –18 bps, CDS = –6 bps (Kroszner and Strahan, 2001b).
Maturity	Natural logarithm of the number of days between the loan origination and the maturity.
Deal or Tranche	Loan value in U.S. dollars. A deal may include several loan facilities at the same time. The most typical arrangement is a loan agreement that comprises a term loan and a revolver credit line.
Senior	Dummy variable that is equal to 1 if the loan is senior.
Secured	Dummy variable that is equal to 1 if the loan is secured. Since this variable is often missing (for about one-third of the sample), a dummy for missing cases is also included in all regressions (not shown).
Year	Dummy variables for the calendar years in which a loan agreement is signed.
Loan Style	Dummy variables for "Revolver", "Limited Line", "Bridge Loan", "Demand Loan", "364-day facility" and "Other." The omitted case is "Term Loan."
Loan Purpose	Dummy variables for "Acquisition line", "CP backup", "Debt repay", "Debtor-in-possession financing", "ESOP", "LBO/MBO", "Project finance", "Real estate", "Recapitalization", "Securities purchase", "Spin-off", "Stock buyback", "Takeover" and "Working capital." The omitted case is "Corp. purposes."

Public Debt Variables (Source: SDC)	
At-issue yield	Yield-to-maturity in basis points as a spread over the relevant treasury benchmark.
Gross spread	Underwriter fees as a percentage of the principal issued.
Maturity	The number of days between the loan origination and the maturity
Principal	Issue size in U.S. dollars.
OTC	Indicates whether the issue is listed over the counter.
Indicators included in estimations but not shown in tables:	
CALL dummies	Indicators for each of the call covenant descriptions given by SDC: "Non-call life," "Non-callable," "Non-call/refund," "Non-refundable," "Make whole call."
PUT	Indicates whether the SDC gives a description of the put covenant.
SINK	Indicates whether the issue involves a sinking-funds provision.
FLOAT	Indicates whether the coupon rate is not fixed.

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Table I
Director Careers and Other Attributes

A. Summary Statistics

A director is an insider if she is a current or former employee of the firm, or is a relative of the top management. Outside directors are further categorized into several careers according to the director's main employment. All variables other than Age and Number of other directorships are binary.

Variable	Obs	Mean	Median	Min	Max	Std Dev
Insider	33,261	0.27	0	0	1	0.44
Commercial banker	33,261	0.03	0	0	1	0.16
Investment banker	33,261	0.02	0	0	1	0.12
Other finance executive	33,261	0.08	0	0	1	0.26
Lawyer	33,261	0.04	0	0	1	0.20
Consultant	33,261	0.03	0	0	1	0.16
Other industry career	33,261	0.45	0	0	1	0.50
Non-corporate career (academic, civic leader, etc.)	33,261	0.10	0	0	1	0.30
Age	33,241	59.55	60	22	91	8.01
Tenure	33,001	9.86	7	0	69	8.96
Female	33,261	0.09	0	0	1	0.28
Number of other directorships	33,261	2.01	2	0	17	2.09

B. Pairwise correlations

Note the omission of the pairwise correlation between director careers, as each director is assigned into one job category only.

	Insider	Com. Banker	I. Banker	Fin. Exec.	Lawyer	Consultant	Industry	Non-corp	Age	Tenure	Female
Age	-0.17	-0.04	-0.01	-0.06	0.03	0.08	0.15	0.02	1.00		
Tenure	0.28	-0.03	0.00	-0.01	-0.01	0.01	-0.18	-0.08	0.39	1.00	
Female	-0.15	0.00	-0.03	0.01	0.00	0.06	-0.01	0.22	-0.10	-0.10	1.00
Num. directorships.	-0.21	0.04	0.03	0.11	-0.04	0.00	0.12	0.02	0.11	-0.03	0.00

Table II
Summary Statistics

The sample period is 1988 to 2001. The full sample statistics are on the left-hand column. The right-hand columns split the data according to the presence of a commercial (investment) banker on board. COMBANKER and IBANKER ratios are, respectively, the number of commercial and investment bankers on board, scaled by the board size (the number of directors on board). A commercial banker is considered affiliated if her bank has lent to the firm in the past (and if the Dealscan database reports the loan.) Total assets are measured as Annual Compustat item 6, Capital as item 8, Investment as item 128. Cash Flow is item 18 plus item 14. Tobin's Q is defined as Market Value of Assets over item 6, where Market Value of Assets is defined as (item 6 – Book Equity + item 25* item 199). Book Equity in turn is defined as item 6 – item 181 – item 10 + item 35 + item 79. If this definition yields no result, we use item 60. Book leverage is defined as (item 9 + item 34) / (item 9 + item 34 + item 216). Market leverage is defined as (item 9 + item 34) / (Market Value of Assets).

	Full Sample Number of firms = 288				Commercial Banker on Board Number of firms = 126				No Commercial Banker on Board Number of firms = 270			
Variable	Obs	Mean	Median	Std Dev	Obs	Mean	Median	Std Dev	Obs	Mean	Median	Std Dev
Assets ($M)	2928	7,480	3,131	17,132	734	9,679	4,100	23,119	2194	6,745	2,919	14,523
Capital ($M)	2928	3,190	1,404	5,639	734	4,408	1,827	6,879	2194	2,783	1,231	5,096
Investment ($M)	2928	572	200	1,648	734	745	235	1,944	2194	514	193	1,533
Inv. / lagged capital	2928	0.21	0.17	0.16	734	0.17	0.15	0.11	2194	0.22	0.18	0.18
Inv. / lagged assets	2928	0.08	0.06	0.06	734	0.07	0.06	0.05	2194	0.08	0.06	0.06
Cash flow ($M)	2928	724	288	1,540	734	921	343	1,801	2194	658	275	1,436
Cash flow / capital	2928	0.35	0.25	0.36	734	0.32	0.22	0.36	2194	0.36	0.26	0.36
Cash flow / assets	2928	0.11	0.10	0.08	734	0.11	0.10	0.06	2194	0.11	0.10	0.08
Tobin's Q (lagged)	2888	1.73	1.32	1.29	729	1.62	1.26	1.04	2159	1.77	1.34	1.36
ROA (lagged)	2902	0.08	0.07	0.06	733	0.08	0.08	0.05	2169	0.08	0.07	0.07
Book Leverage	2879	0.43	0.45	0.21	725	0.43	0.45	0.20	2154	0.42	0.45	0.21
Market Leverage	2873	0.23	0.21	0.16	725	0.24	0.22	0.15	2148	0.22	0.20	0.16
Board size	2928	11.32	11	2.65	734	12.19	12	2.54	2194	11.03	11	2.62
Board Independence	2928	0.73	0.75	0.14	734	0.75	0.78	0.12	2194	0.72	0.75	0.14
COMBANKER > 0	2928	0.25	0	0.43	734	1	1	0.00	2194	0	0	0.00
COMBANKER ratio	2928	0.03	0	0.05	734	0.10	0.09	0.04	2194	0	0	0.00
Affiliated C.B. > 0	2928	0.06	0	0.23	734	0.22	0	0.42	2194	0	0	0
Unaffiliated C.B. > 0	2928	0.19	0	0.39	734	0.78	1	0.42	2194	0	0	0
IBANKER >0	2928	0.16	0	0.36	734	0.14	0	0.35	2194	0.16	0	0.33
IBANKER ratio	2928	0.02	0	0.05	734	0.01	0	0.04	2194	0.02	0	0.16

Fama-French 17 Industry Groups			
Industry	Mean	Industry	Mean
Food	0.06	Steel	0.02
Mining	0.01	Fab. Prod	0.01
Oil	0.03	Machine.	0.09
Textiles	0.02	Cars	0.04
Durables	0.03	Transport.	0.06
Chemicals	0.05	Utilities	0.15
Consumer	0.06	Retail	0.07
Construction	0.04	Other	0.26
		Finance	n.a.

	Investment Banker on Board Number of firms = 102				No Investment Banker on Board Number of firms = 271			
	Obs	Mean	Median	Std Dev	Obs	Mean	Median	Std Dev
Assets ($M)	457	11,448	3,023	30,894	2471	6,747	3,162	12,967
Capital ($M)	457	3,534	988	8,097	2471	3,127	1,447	5,055
Investment ($M)	457	857	197	2,778	2471	519	201	1,333
Inv. / lag. capital	457	0.25	0.21	0.19	2471	0.20	0.17	0.16
Cash flow ($M)	457	957	283	2,333	2471	681	288	1,339
Cash flow / capital	457	0.40	0.30	0.36	2471	0.34	0.23	0.36
Tobin's Q (lagged)	447	1.81	1.43	1.06	2441	1.72	1.30	1.33
ROA (lagged)	455	0.08	0.08	0.07	2447	0.08	0.07	0.06
Board size	457	11.27	11	2.86	2471	11.33	11	2.61
Board Independence	457	0.71	0.73	0.14	2471	0.73	0.75	0.14
COMBANKER> 0	457	0.22	0	0.42	2471	0.26	0	0.44

Table III
Sensitivity of Investment to Cash Flow (Baseline Regressions)

The dependent variable in the OLS regressions is Investment (capital expenditures normalized by lagged capital). Cash flow is earnings before extraordinary items plus depreciation, also normalized by lagged capital. COMBANKER indicates the presence of a commercial banker, and IBANKER indicates the presence of an investment banker on the board. Q is the (lagged) ratio of market value of assets to book value of assets. Firm size is the natural logarithm of lagged total book assets. Board size is the natural logarithm of number of directors on the board. Industry indicators are coded according to the 17 Fama-French industry groups.

	(I)	(II)	(III)	(IV)
	Baseline	Banker Effects	Firm Fixed Effects	Firm and Firm*CF FE
Cash flow	0.265	0.343	0.45	1.30
	(1.41)	(1.77)*	(1.84)*	(3.39)***
(COMBANKER)*(Cash flow)		-0.098	-0.091	-0.076
		(2.58)**	(2.36)**	(1.91)*
(IBANKER)*(Cash flow)		-0.015	-0.083	0.008
		(0.26)	(1.29)	(0.11)
COMBANKER		0.011	0.026	0.025
		(1.03)	(2.03)**	(1.98)**
IBANKER		0.026	0.022	-0.005
		(1.20)	(1.07)	(0.27)
Q	0.037	0.04	0.034	0.028
	(3.44)***	(3.66)***	(3.03)***	(2.63)***
(Q)*(Cash flow)	-0.015	-0.021	-0.012	-0.009
	(1.53)	(2.18)**	(1.12)	(0.87)
Firm size	0.005	0.005	-0.035	0.006
	(0.76)	(0.78)	(2.56)**	(0.43)
(Firm size)*(Cash flow)	-0.014	-0.014	-0.063	-0.125
	(0.57)	(0.61)	(2.33)**	(3.45)***
Board size	-0.022	-0.013	-0.036	-0.02
	(0.99)	(0.61)	(1.13)	(0.65)
(Board size)*(Cash flow)	0.02	0.008	0.113	0.003
	(0.30)	(0.12)	(0.97)	(0.03)
Year fixed effects	yes	yes	yes	yes
(Year fixed effects)*(Cash flow)	yes	yes	yes	yes
Industry fixed effects	yes	yes	no	no
(Industry fixed effects)*(Cash flow)	yes	yes	yes	no
S&P rating fixed effects	yes	yes	yes	yes
(S&P rating fixed effects)*(Cash flow)	yes	yes	yes	yes
Firm fixed effects	no	no	yes	yes
(Firm fixed effects)*(Cash flow)	no	no	no	yes
Observations	2888	2888	2888	2888
R-squared	0.40	0.41	0.66	0.80

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

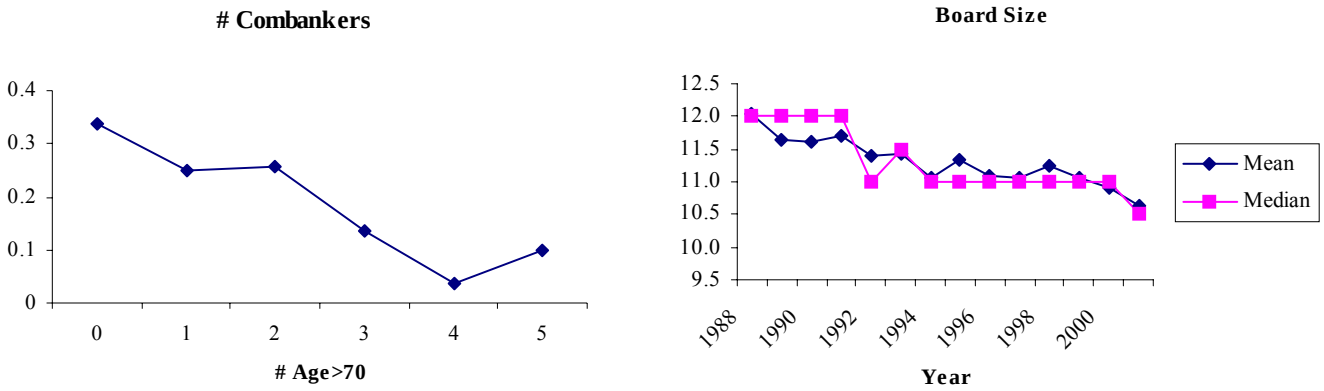

Figure 1. Directors older than 70 as an instrument for commercial bankers. On the left, the figure shows the current number of commercial bankers on the board as a function of the number of directors older than 70. On the right, the figure shows the annual mean and median board size, the number of directors on the board.

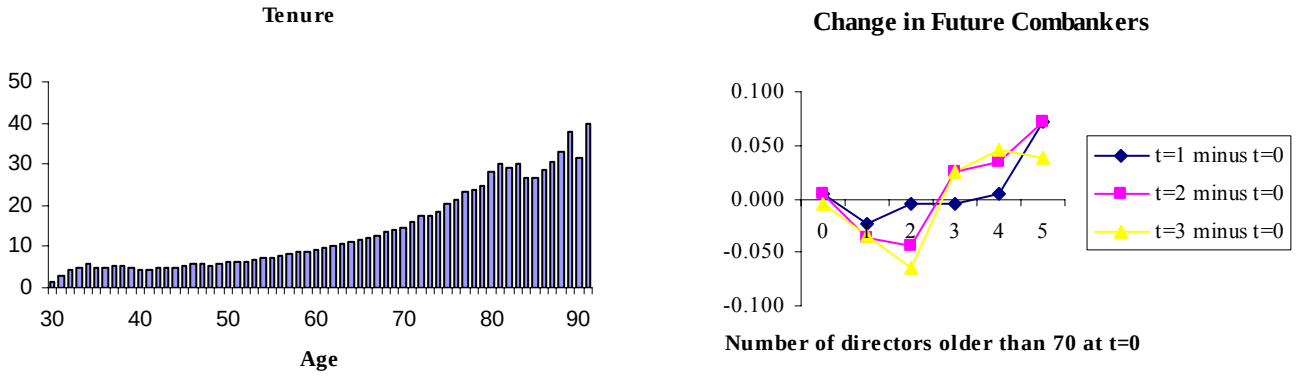

Figure 2. Directors older than 70 as an instrument for commercial bankers. The figure on the left shows mean tenure as a function of director age. The figure on the right displays the future change in the average number of commercial bankers as a function of the current number of directors older than 70.

Table IV

Sensitivity of Investment to Cash Flow (Instrumental Variables Approach)

The dependent variable is Investment in Column I, COMBANKER in Column II, and (COMBANKER)*(Cash flow) in Column III. COMBANKER is the number of commercial bankers on the board. In Column IV, the dependent variable is Investment, and COMBANKER and (COMBANKER)*(Cash flow) are instrumented with (#Age>70) and (#Age>70)*(Cash flow), where #Age>70 denotes the number of directors that are older than 70. Board tenure is the mean tenure of the directors on the board. Year, industry, and S&P credit rating fixed effects, as well as their interactions with cash flow, are included in all estimations.

	(I)	(II)	(III)	(IV)
	Baseline	**First Stage**		**2SLS**
	Investment	COMBANKER	(COMBANKER)*(CF)	Investment
Cash flow	0.461	1.088	0.764	0.633
	(2.36)**	(2.00)**	(1.80)*	(1.98)**
(COMBANKER)*(Cash flow)	-0.086			-0.48
	(3.01)***			(2.03)**
COMBANKER	0.009			0.173
	(1.27)			(1.87)*
Q	0.04	0.056	0.038	0.048
	(3.63)***	(1.86)*	(2.14)**	(3.21)***
(Q)*(Cash flow)	-0.02	-0.064	-0.068	-0.039
	(2.01)**	(2.72)***	(2.79)***	(1.99)**
Firm size	0.005	-0.015	0.006	0.009
	(0.76)	(0.33)	(0.36)	(1.08)
(Firm size)*(Cash flow)	-0.013	0.006	-0.017	-0.02
	(0.56)	(0.08)	(0.23)	(0.74)
Board size	-0.022	0.679	0.14	-0.071
	(1.02)	(4.38)***	(2.40)**	(1.14)
(Board size)*(Cash flow)	0.044	-0.501	-0.064	0.084
	(0.71)	(2.27)**	(0.26)	(0.92)
#Age>70		-0.052	0.011	
		(2.01)**	(0.99)	
(#Age>70)*(Cash flow)		-0.017	-0.092	
		(0.38)	(2.15)**	
Board tenure	0.016	-0.026	0.001	0.022
	(2.63)***	(0.83)	(0.05)	(2.62)***
(Board tenure)*(Cash flow)	-0.042	0.031	0.005	-0.049
	(2.31)**	(0.60)	(0.14)	(2.22)**
Board tenure^2	-0.001	0.001	0.000	-0.001
	(2.39)**	(0.56)	(0.49)	(2.48)**
(Board tenure^2)*(Cash flow)	0.002	-0.001	0.000	0.002
	(2.21)**	(0.42)	(0.20)	(2.16)**
Observations	2885	2926	2926	2885
R-squared	0.41	0.15	0.3	0.22

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table V
Regressions of Investment on Cash Flow: Split-Sample OLS Results

The specification shown in Table III, Column II is re-estimated in each subsample. Coefficient estimates of variables other than the banker and cash flow interactions are not shown for brevity. In Column I, the sample is split according to the median value of the Kaplan-Zingales index (KZ). In Column II, the sample is split into investment grade firms (those with S&P ratings BBB and above) and non-investment grade firms. Those with missing ratings are excluded. In Column III, the sample is split according to the sample median of the number of analysts covering the stock during the quarter before the directors are elected. In Column IV, the sample is split according to the median of the standard deviation of the quarterly earnings forecasts. The source for analyst coverage is I/B/E/S.

	(I)		(II)	
	Constrained	Unconstrained	Constrained	Unconstrained
	KZ> median	KZ< median	Non-Inv. grade	Investment grade
(COMBANKER)*(Cash flow)	0.106	-0.082	0.151	-0.13
	(1.01)	(2.07)**	(0.60)	(1.94)*
(IBANKER)*(Cash flow)	0.075	-0.011	0.097	-0.069
	(0.55)	(0.20)	(0.78)	(1.15)
COMBANKER	-0.031	0.016	0.014	0.017
	(1.88)*	(0.91)	(0.39)	(0.99)
IBANKER	0.027	0.003	-0.055	0.048
	(1.03)	(0.15)	(1.78)*	(1.87)*
Cash flow	0.287	0.365	-1.238	0.18
	(0.63)	(1.65)	(1.30)	(0.68)
Observations	1349	1344	326	2100
R-squared	0.53	0.37	0.69	0.41

	(III)		(IV)	
	Constrained	Unconstrained	Constrained	Unconstrained
	#Analysts< median	#Analysts> median	SD(estimates)> median	SD(estimates)< median
(COMBANKER)*(Cash flow)	-0.023	-0.16	-0.053	-0.11
	(0.59)	(2.87)***	(1.07)	(2.31)**
(IBANKER)*(Cash flow)	0.062	0.097	-0.013	0.127
	(0.63)	(1.57)	(0.23)	(1.23)
COMBANKER	-0.025	0.051	-0.009	0.02
	(1.86)*	(2.38)**	(0.63)	(0.85)
IBANKER	0.024	-0.03	0.006	0.027
	(0.62)	(1.39)	(0.40)	(0.52)
Cash flow	0.159	0.152	0.184	0.314
	(0.43)	(0.53)	(0.59)	(1.00)
Observations	1195	958	1026	1047
R-squared	0.44	0.50	0.44	0.47

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table VI
Bankers at Work: Investment-Cash Flow and Affiliated vs. Unaffiliated Directors

The dependent variable is Investment. A commercial banker is considered affiliated if her bank has lent to the firm in the past (and if the Dealscan database reports the loan.) Constrained (unconstrained) firms are those with a Kaplan-Zingales index that is above (below) the sample median. Firm size is the natural logarithm of lagged total book assets. Board size is the natural logarithm of number of directors on the board.

	(I) Full Sample	(II) Constrained	(III) Unconstrained
Cash flow	0.436	0.075	0.262
	(1.73)*	(0.14)	(1.05)
(Affiliated C.B.)*(Cash flow)	-0.25	0.004	-0.225
	(3.14)***	(0.03)	(2.50)**
(Unaffiliated C.B.)*(Cash flow)	-0.07	0.08	-0.07
	(2.00)**	(1.09)	(1.62)
(IBANKER)*(Cash flow)	-0.092	-0.092	-0.095
	(1.40)	(0.91)	(1.26)
Affiliated COMBANKER	0.05	0.004	0.024
	(2.39)**	(0.13)	(0.56)
Unaffiliated COMBANKER	0.022	-0.018	0.037
	(1.83)*	(1.18)	(1.57)
IBANKER	0.025	0.017	0.049
	(1.18)	(0.79)	(1.40)
Q	0.033	0.022	0.014
	(3.01)***	(1.25)	(1.46)
(Q)*(Cash flow)	-0.011	0.043	-0.003
	(1.05)	(1.84)*	(0.41)
Firm size	-0.031	-0.059	-0.032
	(2.39)**	(2.68)***	(1.85)*
(Firm size)*(Cash flow)	-0.069	0.08	-0.075
	(2.51)**	(1.70)*	(2.32)**
Board size	-0.043	0.042	-0.109
	(1.27)	(1.09)	(1.45)
(Board size)*(Cash flow)	0.136	-0.165	0.197
	(1.13)	(0.79)	(1.36)
Year fixed effects	yes	yes	yes
(Year fixed effects)*(Cash flow)	yes	yes	yes
Industry fixed effects	no	no	no
(Industry fixed effects)*(Cash flow)	yes	yes	yes
S&P rating fixed effects	yes	yes	yes
(S&P rating fixed effects)*(Cash flow)	yes	yes	yes
Firm fixed effects	yes	yes	yes
Observations	2888	1349	1344
Observations with (Affiliated C.B.)	171	97	61
Observations with (Unaffiliated C.B.)	563	258	287
R-squared	0.66	0.83	0.67

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table VII
Summary Statistics: Bank Loans

Loan data come from the LPC Dealscan. Tranche is loan size in USD millions. Drawn spread is the fee per dollar that the borrower pays the lender each year for a term loan. Un-drawn spread is the annual fee per dollar to keep the credit line active. Both rates are in basis points and are quoted as a spread over a benchmark like the LIBOR. Maturity is the number of years between the signing of the loan contract and the maturity. Credit line is a dummy that indicates whether the tranche is a credit line. A typical deal involves a term loan (active immediately) and a credit line that gives the borrower the option to obtain loans at predetermined contract terms. Syndicated is a dummy that indicates whether the loan comes from a syndicate of banks, and the syndicate size denotes the number of banks involved. Senior indicates that the debt has a priority of claim ahead of other debt obligations in a company's total debt structure. Secured indicates that the deal involves a lien on borrower assets (e.g., assets, guarantees, or other collateral).

	Full Sample			**Affiliated Combanker**			**Unaffiliated Combanker**			**No Combanker**		
	# Firms = 191			# Firms = 39			# Firms = 55			# Firms = 175		
Firm Variables	**Obs**	**Mean**	**Std Dev**	**Obs**	**Mean**	**Std Dev**	**Obs**	**Mean**	**Std Dev**	**Obs**	**Mean**	**Std Dev**
Assets ($ millions)	1,500	9,589	22,196	113	15,484	36,592	218	10,212	23,258	1,169	8,903	20,003
Q	1,477	1.61	1.12	113	1.48	0.65	214	1.53	1.17	1150	1.64	1.14
PPE over assets	1,492	0.42	0.22	113	0.49	0.23	218	0.48	0.22	1161	0.4	0.21
Stock Volatility	1,504	0.09	0.04	113	0.08	0.03	220	0.08	0.04	1171	0.09	0.04
Book Leverage	1,477	0.49	0.19	109	0.45	0.16	213	0.51	0.19	1155	0.50	0.20
Market Leverage	1,473	0.26	0.17	112	0.25	0.13	213	0.27	0.17	1148	0.26	0.17
Board size	1,507	11.15	2.50	113	12.27	2.40	220	11.58	2.26	1174	10.96	2.52
Board independence	1,507	0.73	0.14	113	0.78	0.10	220	0.76	0.12	1174	0.72	0.14
Commercial banker	1,507	0.22	0.41	113	1	0	220	1	0	1174	0	0
Affiliated C.B.	1,507	0.07	0.26	113	1	0	220	0	0	1174	0	0
Unaffiliated C.B.	1,507	0.15	0.35	113	0	0	220	1	0	1174	0	0
Affiliated lead C.B.	1,507	0.04	0.20	113	0.55	0.50	220	0	0	1174	0	0
Investment banker	1,507	0.20	0.40	113	0.20	0.41	220	0.15	0.36	1174	0.21	0.41
Loan Variables												
Tranche ($ millions)	1,314	631	1,229	99	1,321	2,858	200	644	1,606	1,015	561	787
Tranche / Market Value of Firm	1,285	0.08	0.10	98	0.11	0.12	193	0.07	0.10	994	0.08	0.10
Drawn spread (bps)	1,045	82.69	85.74	88	61.38	63.98	138	83.89	88.24	819	84.77	87.11
Un-drawn spread (bps)	983	18.31	15.04	90	14.51	11.64	124	18.67	14.58	769	18.70	15.41
Maturity	1,318	3.37	2.61	109	3.66	2.36	185	3.67	3.47	1024	3.28	2.43
Credit Line?	1,507	0.57	0.50	113	0.6	0.49	220	0.54	0.50	1174	0.57	0.50
Syndicated?	1,507	0.87	0.34	113	0.96	0.21	220	0.83	0.38	1174	0.86	0.34
Syndicate size	1,507	12.42	12.51	113	19.08	15.23	220	8.59	9.23	1174	12.49	12.51
Senior	1,507	0.88	0.32	113	0.87	0.34	220	0.85	0.36	1174	0.90	0.30
Secured	1,507	0.13	0.34	113	0.12	0.32	220	0.13	0.33	1174	0.13	0.34

Table VIII PANEL A
Loan Size and Commercial Bankers on Board

This table presents OLS regression results, where the dependent variable is loan size (tranche) in USD millions. COMBANKER and IBANKER indicate the presence of a commercial and investment banker on the board, respectively. Affiliated indicates that the director's bank is among the originators of the loan. Q denotes Tobin's q, PPE/Assets denotes plan, property and equipment scaled by assets, and leverage is total liabilities scaled by assets. Firm size is the natural logarithm of total book assets. Board size is the natural logarithm of number of directors on the board. Maturity is the natural logarithm of the days to maturity. Stock volatility is measured over the 12 months preceding the loan initiation. Indicators for loan style and loan purpose, missing observations for the maturity and secured variables are included in all estimations, but not shown in the table. See the appendix for descriptions of the loan contract variables.

	(I)	(II)	(III)	(IV)
			Constrained	Unconstrained
	Tranche	Tranche	Tranche	Tranche
COMBANKER	256.098			
	(1.79)*			
Affiliated COMBANKER		351.251	-79.845	552.788
		(1.92)*	(0.44)	(2.17)**
Unaffiliated COMBANKER		207.232	27.654	187.929
		(1.49)	(0.60)	(0.87)
IBANKER	268.564	264.988	62.854	444.802
	(1.50)	(1.49)	(0.86)	(1.65)
Q	6.267	8.12	81.585	-14.183
	(0.22)	(0.28)	(1.47)	(0.37)
PPE / Assets	-370.41	-389.821	-68.104	412.047
	(1.84)*	(1.89)*	(0.32)	(1.12)
Stock volatility	-469.91	-469.568	-3,429.28	1,980.82
	(0.36)	(0.36)	(2.86)***	(0.84)
Board size	87.973	86.195	160.056	-38.403
	(0.57)	(0.56)	(1.35)	(0.11)
Firm size	398.66	401.452	210.417	584.196
	(5.56)***	(5.56)***	(4.72)***	(5.04)***
Leverage	-153.939	-151.211	-306.647	-134.116
	(0.46)	(0.46)	(1.58)	(0.17)
Board independence	189.325	176.774	215.971	125.448
	(0.81)	(0.76)	(0.73)	(0.26)
Senior	-38.421	-32.701	10.643	-66.205
	(0.41)	(0.35)	(0.17)	(0.39)
Secured	-146.791	-145.362	-65.217	-163.623
	(1.20)	(1.20)	(0.49)	(0.73)
Maturity	-95.141	-96.51	-11.376	-182.272
	(0.97)	(0.99)	(0.26)	(0.88)
Number of lenders	26.26	25.818	17.805	33.404
	(4.05)***	(3.98)***	(4.61)***	(2.26)**
Syndicated	-95.137	-94.726	-22.519	-101.944
	(1.27)	(1.27)	(0.37)	(0.62)
S&P Rating fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
Observations	1281	1281	575	575
R-squared	0.61	0.61	0.61	0.69

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table VIII PANEL A, Continued

In Column V, COMBANKER is instrumented with the number of directors over the age of 70. In Columns VI and VIII, the model includes firm fixed effects. Affiliated LEAD (PARTICIPANT) CB indicates that the director's bank plays a lead manager (participant) role in the syndicate. The sample includes loans to the KZ-unconstrained firms only.

	(V) 2SLS	(VI) Firm FE	(VII) No Firm FE	(VIII) Firm FE
	Sample: KZ-Unconstrained Firms			
	Tranche	Tranche	Tranche	Tranche
COMBANKER	1,237.91			
	(2.05)**			
Affiliated COMBANKER		938.871		
		(1.63)		
Affiliated LEAD CB			754.118	1,105.20
			(1.90)*	(1.80)*
Affiliated PARTICIPANT CB			87.799	513.667
			(0.40)	(1.04)
Unaffiliated COMBANKER		568.348	184.225	543.113
		(0.86)	(0.86)	(0.83)
IBANKER	597.607	994.566	434.425	970.231
	(2.31)**	(1.68)*	(1.68)*	(1.67)*
Q	0.256	-269.73	-16.972	-272.641
	(0.01)	(1.25)	(0.44)	(1.25)
PPE / Assets	210.387	761.507	505.993	773.422
	(0.45)	(0.51)	(1.40)	(0.52)
Stock volatility	1,091.65	7,074.88	1,894.94	7,252.06
	(0.44)	(1.40)	(0.83)	(1.44)
Board size	-249.768	-59.148	-89.902	-79.254
	(0.63)	(0.08)	(0.28)	(0.10)
Firm size	544.783	1,235.68	571.431	1,234.12
	(4.05)***	(2.07)**	(5.30)***	(2.07)**
Leverage	284.863	-1,134.78	-128.968	-1,181.66
	(0.34)	(0.85)	(0.17)	(0.88)
Board independence	-277.534	-692.632	119.076	-618.246
	(0.44)	(0.81)	(0.25)	(0.74)
Senior	-95.045	-482.631	-62.912	-484.24
	(0.52)	(1.19)	(0.37)	(1.19)
Secured	-270.606	-62.682	-140.185	-72.23
	(1.26)	(0.26)	(0.66)	(0.30)
Maturity	-202.878	-123.951	-172.569	-119.89
	(0.98)	(0.67)	(0.86)	(0.64)
Number of lenders	33.805	50.429	34.768	50.578
	(2.45)**	(1.90)*	(2.24)**	(1.90)*
Syndicated	-141.685	-266.731	-115.107	-269.737
	(0.85)	(0.84)	(0.69)	(0.85)
S&P Rating fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	no	yes	no
Firm fixed effects	no	yes	no	yes
Observations	575	575	575	575
R-squared	0.41	0.59	0.45	0.59

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table VIII PANEL B
Loan Pricing and Commercial Bankers on Board

This table presents the results of regressing the cost of bank loans on firm, contract, and board characteristics. In Columns I through III, the dependent variable is the drawn all-in spread, which is the amount that the borrower pays the lender each year for each dollar borrowed in the case of a term loan, and for each dollar drawn off a credit line in the case of a loan commitment. In Columns IV through VI, the dependent variable is the un-drawn spread, which is the fee the borrower pays the lender each year to keep the credit line active. Constrained (unconstrained) firms are those with a Kaplan-Zingales index that is above (below) the sample median. Firm and board size, and maturity are in logarithms. Indicators for loan style and loan purpose, missing observations for maturity and secured variables are included in all estimations, but not shown in the table. See the appendix for descriptions of the loan contract variables.

	(I) Full Sample spread drawn	(II) Constrained spread drawn	(III) Unconst. spread drawn	(IV) Full Sample spread un-drawn	(V) Constrained spread un-drawn	(VI) Unconstrained spread un-drawn
Affiliated Combanker	3.394	14.576	-5.741	0.98	3.695	0.453
	(0.41)	(1.27)	(0.56)	(0.77)	(1.62)	(0.28)
Unaffiliated Combanker	-3.481	6.539	-10.064	-0.647	3.216	-0.945
	(0.38)	(0.55)	(1.07)	(0.37)	(1.16)	(0.72)
Investment Banker	-15.958	-19.642	-11.126	-0.524	0.866	-1.235
	(2.42)**	(1.58)	(1.63)	(0.50)	(0.35)	(0.87)
Q	-0.683	-12.804	1.763	-0.121	0.016	0.986
	(0.21)	(1.84)*	(0.73)	(0.23)	(0.01)	(2.24)**
PPE / Assets	-8.532	-45.574	-31.928	-4.181	-15.346	-2.885
	(0.50)	(1.57)	(1.76)*	(1.31)	(2.49)**	(0.62)
Stock volatility	326.915	360.029	388.756	35.412	87.768	-3.485
	(3.83)***	(1.68)*	(3.28)***	(2.03)**	(2.81)***	(0.13)
Board size	-2.464	-4.577	-5.742	-2.094	1.838	-3.906
	(0.14)	(0.18)	(0.50)	(0.90)	(0.46)	(1.22)
Firm size	-8.38	0.642	-16.97	-1.867	-1.327	-3.041
	(2.18)**	(0.10)	(4.23)***	(2.03)**	(0.91)	(2.32)**
Leverage	77.423	43.29	25.304	14.015	9.452	10.253
	(3.70)***	(1.53)	(1.25)	(3.36)***	(1.91)*	(1.54)
Board independence	16.208	-12.468	50.485	4.91	8.458	0.79
	(0.66)	(0.33)	(1.86)*	(1.44)	(1.42)	(0.20)
Senior	0.37	-14.264	-0.958	0.686	1.206	0.149
	(0.05)	(0.86)	(0.13)	(0.47)	(0.38)	(0.09)
Secured	64.177	73.133	50.601	10.571	10.25	9.39
	(4.63)***	(3.98)***	(3.61)***	(4.56)***	(3.46)***	(2.59)**
Maturity	5.922	-5.456	7.389	-0.484	-2.226	1.077
	(1.47)	(0.85)	(1.14)	(0.53)	(1.52)	(0.80)
Number of lenders	-0.154	-0.258	-0.165	0.02	0.047	-0.016
	(0.70)	(0.62)	(0.55)	(0.50)	(0.81)	(0.29)
Syndicated	-7.481	-6.479	-17.708	1.094	1.178	-1.537
	(0.92)	(0.44)	(1.98)*	(0.69)	(0.48)	(0.85)
Deal size	1.314	-5.531	11.483	0.219	-1.297	2.573
	(0.40)	(1.02)	(3.13)***	(0.27)	(1.03)	(2.27)**
S&P Rating fixed effects	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes	yes
Observations	1017	448	459	811	372	347
R-squared	0.58	0.65	0.67	0.56	0.61	0.59

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

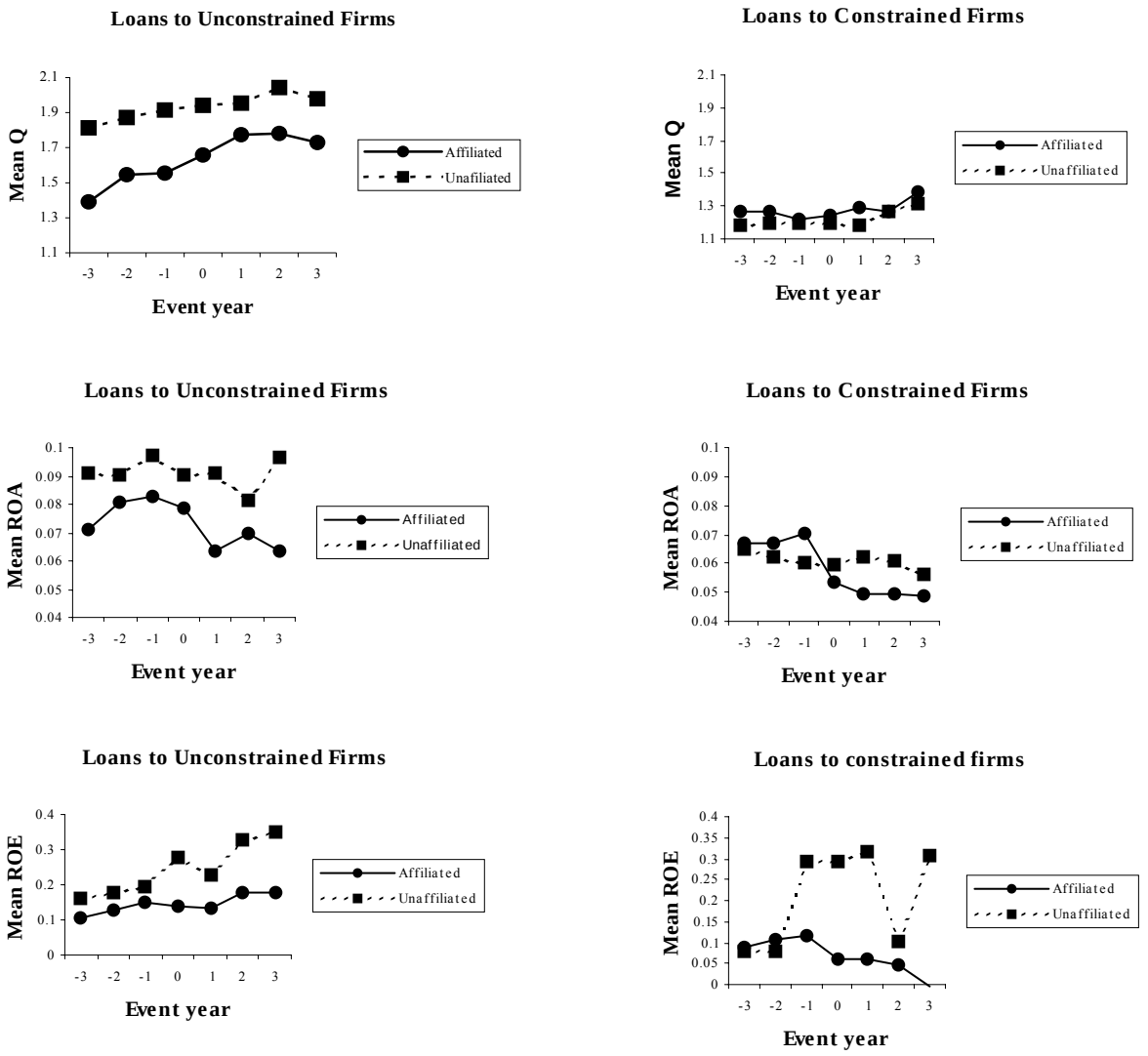

Figure 3. Firm Performance Conditional on Bank Borrowing. The figures depict the sample means of Tobin's q, ROA and ROE among KZ-unconstrained and KZ-constrained firms. Year 0 denotes the year in which the firm has obtained at least one bank loan.

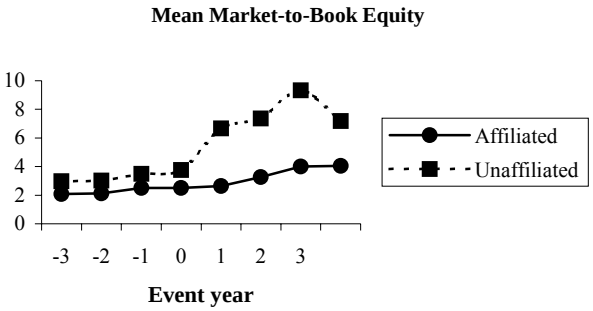

Figure 4. Market-to-Book Equity Conditional on Bank Borrowing. This figure illustrates the sample mean of the ratio of the market value of equity to book value of equity among unconstrained firms.

Table IX
(KZ-Unconstrained) Firm Performance Conditional on Bank Borrowing

The sample includes only KZ-unconstrained firms that obtained at least one bank loan. Subscript t denotes the fiscal year that ends before the borrowing; t+1 denotes the fiscal year that starts after the borrowing. Due to outliers, ROE is censored at –0.25 and +0.25 for the tobit models. In the probit models shown on the right hand columns, the dependent variable indicates an upgrade in the S&P credit rating, the reported coefficient estimates are marginal probabilities, and the numbers in parentheses are z-statistics. Observations with missing ratings are dropped from the sample. Affiliated CB denotes the presence of an affiliated commercial banker, and NO CB denotes the absence of any commercial banker on board. The omitted category is unaffiliated commercial banker. Firm size is the natural logarithm of total book assets. Board size is the natural logarithm of the number of directors on the board. Stock volatility is measured over the twelve months preceding the first loan of the year.

	OLS Models			**OLS Models**			**Tobit Models**			**Probit Models**		
	Q_{t+1}	Q_{t+2}	Q_{t+3}	ROA_{t+1}	ROA_{t+2}	ROA_{t+3}	ROE_{t+1}	ROE_{t+2}	ROE_{t+3}	$Upgrade_{t+1}$	$Upgrade_{t+2}$	$Upgrade_{t+3}$
Affiliated CB	-0.152	-0.175	-0.127	-0.03	-0.008	-0.031	-0.041	-0.016	-0.056	0.182	0.289	0.361
	(0.84)	(0.74)	(0.54)	(2.20)**	(0.63)	(1.84)*	(1.43)	(0.51)	(1.79)*	(1.04)	(1.82)*	(2.65)***
No CB	-0.19	-0.22	-0.13	-0.023	-0.009	-0.019	-0.042	-0.026	-0.046	0.073	0.079	0.1
	(1.33)	(0.97)	(0.53)	(1.97)*	(0.84)	(1.34)	(2.07)**	(1.17)	(2.11)**	(0.73)	(0.83)	(1.29)
Board size	0.134	-0.268	-0.812	-0.003	0.007	0.014	-0.063	-0.008	-0.006	-0.166	-0.287	0.094
	(0.44)	(0.64)	(1.37)	(0.17)	(0.29)	(0.69)	(1.80)*	(0.20)	(0.15)	(0.86)	(1.65)*	(0.43)
Board indep.	0.055	0.078	-0.258	0.002	0.048	0.029	-0.018	0.059	0.07	-0.106	-0.264	-0.077
	(0.16)	(0.16)	(0.52)	(0.06)	(1.54)	(0.91)	(0.30)	(0.89)	(1.09)	(0.33)	(1.05)	(0.30)
Firm Size	0.058	0.084	0	-0.003	-0.003	-0.014	-0.006	-0.002	-0.021	0.007	0.031	0.076
	(0.92)	(1.00)	(0.00)	(0.83)	(0.72)	(3.19)***	(0.75)	(0.26)	(2.39)**	(0.18)	(0.74)	(1.76)*
Stock vol.	-4.456	-3.242	-4.191	-0.171	-0.144	0.063	-0.447	-0.429	-0.378	0.068	0.07	0.492
	(2.70)***	(1.26)	(0.89)	(0.95)	(0.91)	(0.36)	(1.53)	(1.33)	(1.19)	(0.04)	(0.05)	(0.32)
Q_t	0.933	1.039	0.999	0.008	0.01	0.002	0.015	0.02	0.015	0.007	0.025	0.07
	(8.87)***	(6.53)***	(4.46)***	(1.41)	(1.36)	(0.29)	(1.91)*	(2.40)**	(1.96)*	(0.15)	(0.52)	(1.45)
ROA_t				0.534	0.423	0.496						
				(2.60)**	(1.71)*	(2.76)***						
ROE_t							0.45	0.239	0.172			
							(5.66)***	(3.25)***	(2.29)**			
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
S&P Rating FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	303	298	285	303	302	292	304	300	289	166	198	195
R-sq. (*p*-value)	0.78	0.68	0.61	0.43	0.35	0.38	(0.00)	(0.00)	(0.00)	(0.08)	(0.00)	(0.00)

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table X
Summary Statistics
Public Debt

Data on public debt issues come from the SDC database. Principal is the amount of debt issued in USD millions. At-issue yield spread is the yield-to-maturity at the issue date, quoted as a spread over the relevant treasury benchmark. Gross spread is the underwriting fees as a percentage of the principal. Maturity is the number of years to maturity. OTC indicates whether the issue is listed over the counter. Floating rate indicates that the coupon rate is variable. Puttable, callable, and sinking funds are indicators on the presence of call, put, and sinking funds provisions in the debt contract. Combanker and Ibanker indicate the presence of a commercial and investment banker on the board, respectively. Affiliated indicates that the director's bank is among the underwriters of the debt.

	Full Sample # Firms = 192			**Affiliated Ibanker** # Firms = 24			**Unaffiliated Ibanker** # Firms = 42			**No Ibanker on Board** # Firms = 172		
Firm Variables	Obs	Mean	Median	Std Dev	Obs	Mean	Std Dev	Obs	Mean	Std Dev	Obs	Mean	Std Dev
Assets ($ millions)	4,159	37,859	17,943	56,820	217	47,481	74,210	693	87,889	94,249	3,249	26,545	34,727
Q	4,151	1.44	1.27	0.75	217	1.35	0.67	689	1.34	0.66	3,245	1.47	0.77
PPE over assets	4,154	0.38	0.30	0.23	214	0.33	0.17	693	0.32	0.18	3,247	0.40	0.23
Stock Volatility	4,158	0.08	0.07	0.03	217	0.08	0.03	693	0.07	0.02	3,248	0.08	0.03
Book Leverage	4,143	0.59	0.58	0.17	217	0.59	0.21	689	0.64	0.19	3,237	0.58	0.17
Board size	4,159	12.22	12.00	2.20	217	12.31	2.27	693	13.03	2.15	3,249	12.04	2.17
Board independence	4,159	0.80	0.82	0.12	217	0.75	0.15	693	0.79	0.14	3,249	0.81	0.11
Commercial banker	4,159	0.23	0	0.42	217	0.20	0.40	693	0.39	0.49	3,249	0.20	0.40
Investment banker	4,159	0.22	0	0.41	217	1	0	693	1	0	3,249	0	0
Affiliated Ibanker	4,159	0.05	0	0.22	217	1	0	693	0	0	3,249	0	0
Unaffiliated Ibanker	4,159	0.17	0	0.37	217	0	0	693	1	0	3,249	0	0
Debt Variables													
Principal ($ millions)	4,138	107.56	45.00	170.97	217	166.03	194.83	693	102.46	130.60	3,228	104.72	176.15
Principal/ Firm Value	4,130	0.009	0.002	0.018	217	0.013	0.028	689	0.006	0.012	3,224	0.009	0.018
At-issue yield spread	2,237	104.71	85.00	77.63	107	117.09	63.79	328	94.12	75.77	1,802	105.90	78.54
Gross spread	2,303	0.59	0.60	0.41	128	0.60	0.37	365	0.48	0.30	1,810	0.61	0.43
Maturity	4,159	8.38	5.02	8.27	217	7.02	7.80	693	6.58	6.84	3,249	8.85	8.51
OTC?	4,159	0.00	0.00	0.05	217	0.00	0.00	693	0.00	0.00	3,249	0.00	0.06
Floating rate?	4,159	0.13	0.00	0.34	217	0.14	0.35	693	0.23	0.42	3,249	0.11	0.32
Puttable?	4,159	0.04	0.00	0.19	217	0.04	0.20	693	0.04	0.20	3,249	0.04	0.19
Callable?	4,159	0.85	1.00	0.36	217	0.91	0.29	693	0.92	0.27	3,249	0.83	0.38
Sinking funds?	4,159	0.02	0.00	0.15	217	0.01	0.10	693	0.02	0.15	3,249	0.02	0.15

Table XI
Cost and Size of Public Debt and Investment Bankers on Board

The dependent is at-issue yield spread (in basis points as a spread over the benchmark treasury rate) in Column I, the gross spread (underwriter fees as a percentage of the issue) in Column II, and the principal amount of debt issue (in USD millions) in Columns III and IV. Indicators for put, call, and sinking fund covenants, and variable coupon rates are included in all estimations, but not shown in the table. Firm size is the natural logarithm of total book assets. Board size is the natural logarithm of number of directors on the board. Maturity is the natural logarithm of the days to maturity.

	(I) At-issue Yield	(II) Gross Spread	(III) Principal ($ millions)	(IV) Principal ($ millions)
IBANKER			21.471	
			(2.18)**	
Affiliated IBANKER	-3.7	-0.002		59.648
	(0.49)	(0.05)		(1.53)
Unaffiliated IBANKER	-3.932	-0.063		6.268
	(0.58)	(2.50)**		(0.51)
COMBANKER	1.707	0.035	11.277	12.814
	(0.32)	(1.62)	(0.85)	(0.94)
Q	-10.272	-0.029	17.829	18.333
	(3.74)***	(1.50)	(1.85)*	(1.90)*
PPE / Assets	-11.379	-0.117	-55.918	-58.353
	(0.79)	(1.38)	(1.26)	(1.32)
Stock volatility	573.11	1.563	287.188	256.375
	(5.98)***	(3.05)***	(2.09)**	(1.82)*
Over the counter	-12.941	0.248	-1.532	-0.231
	(0.44)	(1.64)	(0.04)	(0.01)
Leverage	31.789	0.12	-168.958	-158.778
	(1.68)*	(1.75)*	(3.42)***	(3.06)***
Firm size	-10.564	-0.053	52.291	52.326
	(3.86)***	(4.24)***	(5.79)***	(5.77)***
Maturity	3.922	0.072	38.643	38.571
	(1.60)	(4.56)***	(4.73)***	(4.80)***
Principal	7.733	0.03		
	(5.81)***	(2.59)**		
Board size	12.741	-0.049	-50.884	-51.849
	(1.23)	(0.91)	(0.98)	(0.99)
Board independence	23.879	0.229	-160.248	-154.908
	(1.24)	(2.14)**	(3.32)***	(3.11)***
S&P Rating fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes
Observations	2203	2267	4123	4123
R-squared	0.51	0.45	0.34	0.34

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table XII
Frequency of Outside Financing

This table presents probit regression results. The reported coefficients are marginal probabilities, rather than coefficient estimates. External finance indicates that the firm obtained financing in the form of bank loan, public debt or equity at least once during the year. Similarly, bank loan indicates a year with bank borrowing, and capital markets financing indicates a year with public debt or equity issuance. In Column I through V, all firm-years with available data are used. In Column VI only firm-years with an external finance event are used; the dependent variable is public financing (i.e., indicator for public debt or equity issuance.) Firm size is the natural logarithm of total book assets. Board size is the natural logarithm of number of directors on the board.

	(I) External Finance	(II) Bank Loan	(III) Capital Markets	(IV) Public Equity	(V) Public Debt	(VI) Public vs. Bank Finance
IBANKER	0.10	0.099	0.06	0.015	0.04	-0.07
	(2.74)***	(2.85)***	(2.04)**	(1.21)	(1.52)	(1.23)
COMBANKER	0.02	0.021	0.011	0.012	-0.002	-0.018
	(0.56)	(0.70)	(0.37)	(1.17)	(0.08)	(0.34)
Firm Size	0.091	0.027	0.105	0.004	0.114	0.1
	(4.76)***	(1.44)	(6.47)***	(0.65)	(7.26)***	(2.94)***
PPE / Assets	-0.108	-0.254	0.111	-0.023	0.141	0.522
	(1.11)	(2.69)***	(1.40)	(0.78)	(1.82)*	(3.38)***
Q	0.009	0.004	0.01	0.01	-0.009	0.016
	(0.80)	(0.42)	(1.00)	(3.73)***	(0.79)	(0.63)
Leverage	0.345	0.204	0.225	0.077	0.16	0.062
	(4.24)***	(2.80)***	(3.09)***	(2.93)***	(2.19)**	(0.42)
Board size	0.052	-0.048	0.155	0.011	0.196	0.285
	(0.70)	(0.74)	(2.25)**	(0.47)	(3.16)***	(2.29)**
Board independence	0.017	-0.074	0.025	-0.024	0.005	0.235
	(0.14)	(0.74)	(0.27)	(0.83)	(0.06)	(1.33)
KZ	0.006	0.004	0.009	0.004	0.006	0.003
	(1.94)*	(1.44)	(3.02)***	(2.36)**	(1.92)*	(0.84)
S&P Rating F.E.	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes	yes
Pseudo R-squared	0.12	0.11	0.17	0.08	0.20	0.20
Observations	2810	2810	2802	2747	2751	1001

Constant included. Z-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table XIII
Summary Statistics on Acquisitions

	Obs	Mean	Median	Min	Max	Std Dev
% owned after	1547	98.3	100	50	100	8.64
% of target acquired	1547	97.7	100	50	100	12.02
Target value ($ million)	554	191.5	116.5	0.3	939.8	220.20
Target value over acquirer total assets	554	0.07	0.02	0.0004	1.81	0.13
Number of banks advising target	532	1.2	1	1	5	0.46
Number of banks advising acquirer	318	1.2	1	1	4	0.44
Target public?	1547	0.21	0	0	1	0.38
Announcement return	532	-0.52%	-0.58%	-20.70%	17.85%	0.052

Table XIV
Stock Performance on Acquisition Announcement Days

The dependent variable is the cumulative abnormal return for our sample firms around a (-2, +2) day event window of acquisition announcements available in the SDC database. We exclude mergers with deal values lower than $1 million. We assume an alpha of zero and a market beta of one for computing the abnormal returns. Cash Only is equal to 1 if the acquisition is financed with cash only. Similarly, Stock Only indicates that a stock financing. The omitted category indicates a merger with mixed financing. Diversify is equal to 1 if the acquirer and the target do not share the same 2-digit SIC code.

	OLS Models		
	Ret(-2, +2)	Ret(-2, +2)	Ret(-2, +2)
Ibanker	-0.012	-0.013	-0.012
	(1.78)*	(1.83)*	(1.76)*
Cash Only		-0.003	-0.002
		(0.45)	(0.32)
Stock Only		-0.0002	-0.002
		(0.03)	(0.25)
Diversify			0.014
			(2.96)***
Year FE	yes	yes	yes
Industry FE	yes	yes	yes
S&P Rating FE	yes	yes	yes
Observations	532	532	532
R-sq.	0.07	0.07	0.08

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

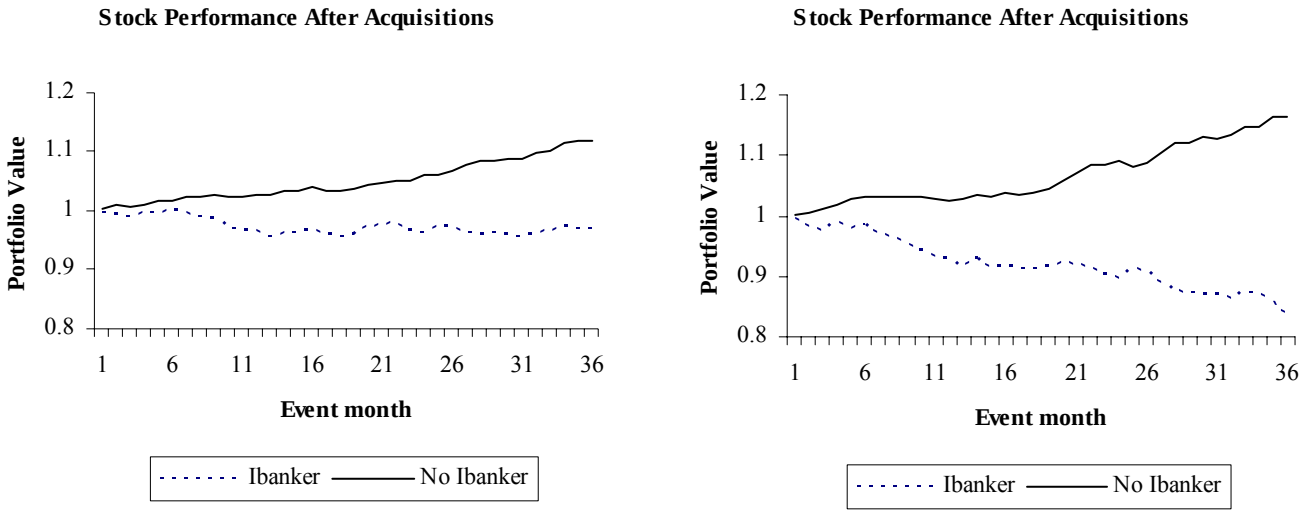

Figure 5. Stock Performance After Acquisitions. Starting the month following the acquisition, stock returns (net of the market return) are averaged for each group of firms for each "event" month during the 36-month period. The monthly averaged returns are then compounded separately among the firms with and without an investment serving on the board. The figure on the right requires that the acquired firm has a minimum value of $5 million.

Table XV
Firm Performance Conditional on Acquisitions

The sample includes only those firm-years in which the firm announced and completed at least one acquisition, where subscript t denotes the event year. R_{t+i} denotes buy-and-hold stock returns over the i months following the acquisition. ΔQ_{t+i} and ΔMB_{t+i} denote the change in market-to-book ratio of assets and equity, respectively, from year t-1 to t+i. ROA_{t+i} denotes earnings before extraordinary items plus interest expenses scaled by total assets in year t+i. Book-to-market is the ratio of book value of equity to its market value. Market equity is the natural logarithm of market equity. Volatility is measured over the twelve months before the acquisition. Firm size is the natural logarithm of total book assets. Board size is the natural logarithm of number of directors on the board. Board independence is the number of outside directors scaled by board size.

	R_{t+12}	R_{t+24}	R_{t+36}	ΔQ_{t+1}	ΔQ_{t+2}	ΔQ_{t+3}	ΔMB_{t+1}	ΔMB_{t+2}	ΔMB_{t+3}	ROA_{t+1}	ROA_{t+2}	ROA_{t+3}
IBANKER	-0.086	-0.173	-0.181	-0.229	-0.265	-0.222	-0.445	-0.665	-0.506	0.002	-0.011	-0.018
	(2.42)**	(2.58)**	(1.86)*	(1.86)*	(1.74)*	(1.43)	(1.87)*	(2.43)**	(1.50)	(0.22)	(1.33)	(1.89)*
BM equity	0.014	-0.001	-0.014									
	(0.43)	(0.01)	(0.11)									
Market Equity	0.007	-0.146	-0.239									
	(0.10)	(1.05)	(1.28)									
Board size	0.012	0.039	0.113	-0.059	0.077	-0.128	0.093	0.331	-0.002	0.007	0.016	-0.001
	(0.84)	(1.25)	(2.84)***	(0.24)	(0.26)	(0.36)	(0.23)	(0.67)	(0.00)	(0.63)	(1.04)	(0.10)
Board indep.	-0.163	-0.346	-0.445	0.057	0.157	-0.006	0.677	0.103	-0.444	-0.018	-0.001	-0.002
	(2.19)**	(2.36)**	(2.11)**	(0.16)	(0.41)	(0.01)	(0.69)	(0.14)	(0.42)	(1.22)	(0.08)	(0.08)
Firm Size				0.085	0.108	0.142	-0.137	-0.029	0.05	-0.005	-0.009	-0.006
				(1.39)	(1.67)*	(1.97)*	(0.78)	(0.20)	(0.24)	(2.34)**	(3.51)***	(2.46)**
Stock vol.				0.686	-0.806	-3.361	-2.938	-3.998	-6.151	-0.018	-0.112	-0.302
				(0.20)	(0.33)	(1.53)	(0.38)	(0.87)	(1.59)	(0.13)	(0.97)	(2.16)**
ΔQ_t				-0.334	-0.394	-0.464						
				(2.50)**	(3.89)***	(3.67)***						
ΔMB_t							0.193	-0.269	-0.505			
							(0.33)	(2.69)***	(4.82)***			
ROA_t										0.346	0.23	0.163
										(2.71)***	(2.24)**	(1.82)*
Year, industry, and S&P credit rating fixed effects included in all models.												
Observations	1263	1142	969	598	593	579	598	593	579	593	586	574
R-squared	0.06	0.1	0.2	0.12	0.17	0.19	0.04	0.16	0.18	0.37	0.31	0.29

Constant included. T-statistics (in parentheses) are heteroskedasticity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table XVI
Firm Performance Conditional on Acquisitions

This table replicates the results of the regressions reported in Table XIV with further controls for the type of financing, using the subsample where the type of financing is available. For comparison, baseline models without the financing dummies are also reported. Cash Only is equal to 1 if all acquisitions in a given year are financed with cash only. Similarly, Stock Only indicates that all acquisitions in a given year are financed with stock only. The omitted category indicates years with mergers with mixed financing or multiple mergers with different means of financing. The same set of control variables presented in Table XV is also included in all regressions here, even though not tabulated for brevity.

	R_{t+24}	R_{t+24}	R_{t+36}	R_{t+36}	ΔQ_{t+1}	ΔQ_{t+1}	ΔQ_{t+2}	ΔQ_{t+2}	ΔMB_{t+1}	ΔMB_{t+1}	ΔMB_{t+2}	ΔMB_{t+2}
IBANKER	-0.115	-0.100	-0.145	-0.126	-0.293	-0.332	-0.327	-0.335	-0.372	-0.416	-0.525	-0.531
	(1.30)	(1.11)	(1.00)	(0.88)	(2.00)**	(2.18)**	(1.66)*	(1.69)*	(1.31)	(1.41)	(1.74)*	(1.73)*
Cash Only		-0.015		0.019		-0.204		-0.06		-0.136		-0.125
		(0.12)		(0.12)		(1.14)		(0.32)		(0.46)		(0.44)
Stock Only		-0.123		-0.116		0.141		0.009		0.271		-0.091
		(1.04)		(0.84)		(0.41)		(0.04)		(0.52)		(0.23)
Year, industry, and S&P credit rating fixed effects included in all models.												
Observations	526	526	438	438	343	343	340	340	343	343	340	340
R-squared	0.13	0.13	0.22	0.23	0.15	0.15	0.2	0.2	0.15	0.15	0.21	0.21

Constant included. T-statistics (in parentheses) are heteroscedasticidity-corrected and clustered by firm.
* significant at 10%; ** significant at 5%; *** significant at 1%