Financial Expertise of Directors*

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Abstract

The composition and functioning of corporate boards is at the core of the academic and policy debate about optimal corporate governance. But does board composition matter for corporate decisions? In this paper, we focus on the effect of financial expertise of directors. In a novel data set on board composition, covering 282 companies over 14 years, we find that financial experts significantly affect corporate decisions, but mainly in the interest of their own institutions. We examine separately conflicts of interest due to commercial bank and investment bank affiliation. First, when commercial bankers enter boards, external funding increases and investment-cash flow sensitivity diminishes. However, the increased financing benefits mostly firms with good credit but poor investment opportunities. Commercial bankers appear to offer loans to increase bank profits rather than shareholder value. Second, investment bankers are associated with larger bond issues and worse acquisitions. They appear to maximize the fees accruing to their investment banks. Third, we find little evidence that financial expertise matters for corporate decisions when conflicts of interest are absent. Our findings suggest that requiring financial expertise on boards, as put forward in regulatory proposals, may not benefit shareholders if conflicting interests are neglected.

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Much of the recent corporate-governance debate revolves around the composition of corporate boards. Which types of directors can be expected to actively pursue the interests of shareholders? Following the recent wave of accounting scandals, regulators have stressed the need for more financial experts on boards. The implicit assumption is that "an understanding of generally accepted accounting principles and financial statements" will lead to better board oversight and serve the interest of shareholders.[1]

Financial experts, however, might affect firm policies beyond more accurate disclosure and better audit committee performance. Directors spend a significant portion of their time on advising rather than monitoring (Adams and Ferreira (2003)). This influence is problematic if directors are affiliated with financial institutions and pursue interests other than maximizing shareholder value. Nevertheless, recent regulatory efforts to increase financial expertise on boards do not preclude such conflicts. Sarbanes-Oxley (SOX) targets independent accounting experts but enacts a very broad definition of financial expertise.[2] As a result, bankers are the prevalent type of financial expert on boards.[3] Such affiliation has raised concerns in several areas of financial intermediation, such as analyst recommendations, IPO allocations, and proxy voting of mutual funds.[4]

In this paper, we ask whether directors with financial expertise improve corporate policies. We analyze both internal and external investment decisions. We also isolate experts with conflicts of interest – commercial and investment bankers – and ask whether affiliation hampers the advisory role of these directors. Our analysis complements a growing literature relating board characteristics to firm performance (Fich and Shivdasani (2006); Perry and Peyer (2005)) and extends the analysis to specific corporate policies.

We construct a novel data set on board composition covering 282 companies over

[1] Section 407 of the Sarbanes-Oxley (2002) Act on the definition of audit committee financial experts. Similarly, all major stock exchanges have introduced listing requirements on director financial literacy. See also the governance survey by Jensen, Murphy, and Wruck (2004), e.g. recommendation R-36.

[2] The original SOX proposal had a more restrictive definition of financial expert, which would have only included CPAs and people with direct accounting experience. The objection from the business community (e.g. "Blue Ribbon Commissions"), which led to the softening of the definition, was that the pool of experts is too small, especially if bankers were to be excluded. (See Tenorio, 2003; Stuart, 2005). In our sample, accountants make up only 0.5% of directors. CFOs make up 1%.

[3] According to *CFO Magazine*'s analysis (Stuart, 2005), roughly 30% of boards (among the Fortune 100) identified a director who is "an evaluator of financial statements, such as a banker or investor," an executive who merely supervised the finance or accounting function, or a director with "no discernible professional experience in finance" as their financial expert for the purpose of compliance with SOX.

[4] Malmendier and Shanthikumar (2005); Kim and Davis (2005); Reuter (2005).

14 years. We find that financial experts significantly affect corporate decisions, but only when their influence serves the interest of their own institutions. We find little evidence of offsetting benefits from financial expertise. Our results challenge the view that more expertise will unambiguously improve firm policy. Rather, the potential benefits have to be weighted against the costs due to misaligned incentives.

Our analysis proceeds in three steps. First, we study the effect of financial expertise on internal investment and loan financing. We examine the impact of all financial experts, but focus in particular on commercial bankers, who can affect firms' access to capital. If firms are financially constrained due to information asymmetries (Myers and Majluf (1984); Fazzari, Hubbard, and Petersen (1988)), bankers may enable firms to finance additional value-creating projects and decrease the sensitivity of investment to internal funds.[5] Or, they may provide loans, even when it is not in the interest of shareholders. Lending to unconstrained firms with low default risk, but no value-creating projects, may increase their banks' profits but also enable empire-building or overconfident managers (Jensen and Meckling (1976); Jensen (1986); Malmendier and Tate (2005)) to divert funds or to overinvest.

We investigate whether bankers on corporate boards increase external financing and, if so, whether the affected firms are financially constrained. We find that when commercial bankers enter the board of a firm, the firm displays less investment-cash flow sensitivity and obtains larger loans. Both effects strongly depend on affiliation, i.e., directors whose bank has a lending relationship with the firm. Moreover, lending increases only for firms that are *least* financially constrained, such as firms with investment-grade debt. These firms have worse investment opportunities and lower profitability, even several years after the loan. Constrained firms receive no such assistance. The results suggest that banker directors are guided by creditors' rather than shareholders' interests. We find no measurable impact of other, unconflicted financial experts.

Second, we consider external investment (acquisitions) and financing with public securities, and focus in particular on investment bankers. We find that firms with investment bankers on their boards undertake worse acquisitions. In the 5 days around takeover

[5] Consistent with this story, Hoshi, Kashyap, and Scharfstein (1991) find that investment is less sensitive to cash flow in Japanese firms with keiretsu membership. Ramirez (1995) finds that firms with J.P. Morgan executives on their boards displayed lower investment-cash flow sensitivity at the turn of the 20th century.

bids, they lose 1% more than firms without investment banker directors. They also lose significantly more value over the three years following an acquisition. Firms with investment bankers on their board are also associated with larger bond issues, in particular if the director's bank is involved in the deal. And, while investment bankers on the board generally seem to reduce underwriting fees, this helping hand is not visible when their bank is involved in the deal and collects the fees. Like commercial bankers, investment bankers have a significant impact on corporate decisions, but seem to promote bank profits rather than shareholder value. Again there is little evidence that non-conflicted financial experts improve firm policies (or have any impact at all).

Third, we test for effects of financial expertise when the interests of finance experts and shareholders are not in conflict, such as CEO compensation.[6] We do not find evidence that financial experts impact decisions orthogonal to their institutions' interests.

Financial experts on boards, therefore, exert significant influence on corporate decisions, but mainly in the interest of their financial institutions. The results challenge common justifications for adding financial experts to boards, such as facilitating more efficient access to capital markets or improving compensation policy. Our findings do *not* imply, however, that financial experts destroy shareholder value on net. Our analysis does not examine all the avenues through which companies may benefit from financial expertise on their board. Aggrawal and Chadha (2003), for example, find that having directors with a CPA, CFA, or similar degree on audit committees translates into fewer earnings restatements. DeFond, Hann, and Hu (2005) document a positive stock market reaction to the appointment of directors with accounting knowledge to the audit committee (though not to the appointment of other types of financial experts). Moreover, our findings apply only to our sample of large, mature US firms; smaller, early-stage firms, for example, may benefit from the financial expertise of venture capitalists through higher innovativeness and professionalism (Hellman and Puri (2000, 2002), Kortum and Lerner (2000)). Our results, however, indicate that misaligned incentives (as for affiliated financial experts) and lack of incentives (as for unaffiliated financial experts) undermine the potential for financial expertise to improve these policies.

[6] For a discussion of the role of directors in setting compensation and of financial expertise (e.g. in understanding the value of option grants which are not expensed) see Holmström and Kaplan (2003).

A key concern for any analysis of director effects is the endogeneity of board composition, a point made both theoretically and empirically by Hermalin and Weisbach (1998 and 1988), among others.[7] In particular, the causality may be reverse, and firms' financing needs may determine the board representation of financial institutions.[8]

Our detailed data allows us to better address these concerns. First, the fourteen-year time series provides sufficient variation in board composition to identify commercial banker effects even after controlling for company fixed effects. The estimated impact of commercial bankers does not reflect time-invariant firm characteristics.

Second, we instrument for the board presence of commercial bankers, exploiting pre-sample shocks to the supply of bankers into the pool of directors. During the banking crisis in the late 1970s and early 1980s, executives of failing commercial banks were less attractive as directors. As a result, director positions between 1976 and 1985 were less likely to be filled with commercial bankers than in other decades, while the overall rate of board appointments remained the same. We instrument for the number of commercial bankers on the board with the number of current directors hired during the crisis period. All results replicate. A placebo instrument, the number of directors appointed between 1966 and 1975, fails to replicate the results, corroborating our analysis.

Third, we identify and remove company-year observations in which selection concerns are most severe, such as years with major acquisitions and the first years of a banker's tenure. We show that such years do not drive our results.

For investment bankers and other financial experts, we cannot use fixed effects in most cases. There is, for example, insufficient within-firm variation in acquisitions. We also do not have an instrumental variable strategy. So, as in previous literature, we rely on cross-sectional identification and must be more cautious about the interpretation of the findings. In these cases, the endogeneity concern is, however, ameliorated by the large discrepancy between high-frequency corporate decisions and slow board turnover. In our data, we find that average director tenure is nine years. Costs of termination and search costs make it impractical to adjust board composition at every change in policy. Firms

[7] For an extensive review of the literature see Hermalin and Weisbach (2003).
[8] Stearns and Mizruchi (1993), Pfeffer (1992), and Booth and Deli (1999) interpret the correlation between firm leverage and board presence of bankers as evidence of firms hiring financial directors for their debt market expertise.

must trade off the costs and benefits of adding a particular director type to the board along many policy dimensions, even if they are choosing a director to implement a specific policy. For example, a director hired for her debt market expertise will also decide about executive compensation and acquisition policies. But, her impact on the latter decisions may conflict with the preferences of the CEO or the shareholders.

Our paper relates most closely to Kroszner and Strahan (2001a and b), who also study conflicts of interest when commercial bankers sit on corporate boards. They find that banker directors are less common in smaller, more volatile firms, where conflicts are most severe, and in distressed firms, where legal constraints, such as equitable subordination, deter the bankers. Our results indicate that conflicts of interests still matter in large, stable firms. Consistent with this interpretation, Kracaw and Zenner (1998) find a negative stock price reaction to bank loans if an affiliate of the lending bank sits on the board of the borrower. Morck and Nakamura (1999) show that banker directors emphasize policies that benefit creditors rather than shareholders in a dataset on Japanese bank ties.

The remainder of the paper is organized as follows. First, we describe the data (Section I). In Section II, we investigate the effect of financial expertise on internal investment and financing policies. In Section III, we study acquisition and public issuance decisions. In Section IV, we evaluate the impact of financial expertise on policies which preclude conflicts of interests. In Section V, we conclude.

I. Data

We analyze a sample of publicly traded companies from 1988 to 2001. We build on the dataset of Hall and Liebman (1998) and Yermack (1995), merged with CEO demographics from Malmendier and Tate (2005). To be included in the original Hall-Liebman sample, a firm has to appear at least four times on one of the lists of largest US companies published by Forbes magazine from 1984 to 1994. We exclude financial firms.

We hand-collect biographical information on all board members of these companies using annual proxy statements (1988−1997) and the IRRC database (1998−2001). We code each outside director's main employment into one of the following categories[9]: (1) commercial bank executive, (2) investment bank executive, (3) executive of a non-

[9] The employee falls into more than one category in a few cases, such as banks that are both (1) and (2).

bank financial institution, (4) finance executive (CFO, Accountant, Treasurer, or Vice President for Finance), (5) "finance" professor (including finance, economics, accounting, and business), (6) consultant, (7) lawyer, (8) executive of a non-financial firm that falls outside these categories, and (9) non-corporate worker (including careers in academia, nonprofit or civil activist organizations, and politics).

We take additional steps to refine the first two categories, which play a key role in the analysis. If the description of the director's employer is vague or missing, we identify the bank from the FDIC list of US chartered commercial banks and the Carter–Manaster IPO underwriter reputation rankings updated by Loughran and Ritter (2004). To be considered a banker, the director has to be an executive of the bank, not just a board member. The exception is when the director retains a seat on the bank's board upon retiring from her executive position. Because retired bankers who do not retain their seat on the bank's board should no longer be affected by their previous incentive misalignment, we reclassify these directors in category (8).[10] We do the same for retired executives of non-bank financial institutions. To the extent that the reclassification into the non-banker sample is an "over-adjustment", the resulting measurement error works against finding significant effects in our regression analysis. We classify retired directors of categories (4) to (9) into the category most in line with their pre-retirement work history.

The initial data collection yields 32,943 observations. Panel A of Table 1 presents the summary statistics. Insiders, i.e. current or former employees of the firm or relatives of executives, make up 27% of director years. Outsiders who are former or current executives in non-financial industries account for 44% and directors in non-corporate careers for 10%. Directors with various forms of financial expertise account for 18% of director years, with executives of non-bank financial companies the most common (8%) and accountants the most scarce (0.5%). Directors are on average 60 years old, have served on the board for 9 years, and hold two other directorships. Only 8.5% are served by females.

We transform the sample into firm-years in Panel B. 27% 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 to the firm in the past, as reported

[10] In a small number of cases (particularly in the IRRC data), we know only that the director is retired, but nothing about their past employment. These directors are classified in category (8).

in the Dealscan database. 22% of the commercial banker-years involve an affiliated banker. Financial executives and accountants are present in almost half of firm years (46%) and academics with a financial economics background in 18%. 56% of firm years contain a director who is an executive of a non-bank financial company.

We supplement the director data with accounting and financial information from COMPUSTAT. The resulting sample contains 2910 firm-year observations of 282 different firms. We measure capital as property, plants, and equipment (item 8), investment as capital expenditures (item 128), and cash flow as earnings before extraordinary items (item 18) plus depreciation (item 14). We normalize investment and cash flow by lagged capital.[11] Tobin's Q is the market value of assets normalized by total assets (item 6), where market value is total assets plus market equity (item 25 multiplied by item 199) minus book equity. Book equity is equal to total assets 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. Return on assets (ROA) is income divided by the average of current and lagged total assets, where income is earnings before extraordinary items (item 18) plus interest expense (item 15) plus income statement deferred taxes (data 50), when non-missing, plus investment tax credit (data 51), when non-missing. Return on equity (ROE) is net income (item 172) scaled by the average of current and lagged book equity.[12] Altman's (1968) z-score, as modified by MacKie-Mason (1990), is defined as 3.3 times the difference in operating income before depreciation (item 13) and depreciation and amortization (item 14) plus sales (item 12) plus 1.4 times retained earnings (item 36) plus 1.2 times working capital (data 121), divided by total assets (item 6). Book leverage is long term debt (item 9) plus debt in current liabilities (item 34), divided by long term debt plus debt in current liabilities plus stockholders' equity (item 216). Market leverage is long term debt plus debt in current liabilities, divided by the market value of assets. Board size is the number of directors. Board independence is the number of outside directors scaled by board size. Finally, Panel C shows the distribution across

[11] Cash flow normalized by capital contains a few extreme values. To avoid the confounding effect of outliers on our results, we trim the sample at the 1% level.

[12] Because of extreme outliers, we trim ROE at the 1% level. Winsorizing yields similar results in all regressions.

the 17 Fama-French industries.

We also split the sample into firms with and without financial experts on their board, separately for each type of expert.[13] Comparing the subsamples with and without commercial bankers, we find that firms with commercial bankers on their board are larger (in terms of assets), though not significantly so. They also appear to generate more cash flow and to invest more, but the pattern reverses once we normalize by lagged capital. Interestingly, both average Q and z-score are *higher* in the sample without bankers, and ROA and ROE are not significantly different, nor are market and book leverage. Thus, the summary statistics fail to reveal a systematic pattern of higher profitability or better access to capital markets for firms with commercial bankers, as a sorting argument would suggest. The pattern is more consistent for the subsamples with and without investment bankers. Firms with investment bankers are larger, have a higher investment volume and cash flow (even after normalization), and a higher Q, though all differences but one are insignificant. ROA and ROE are, again, virtually identical. For the subsamples with and without finance executives and accountants, the pattern reverses. Size, investment, cash flow, and Q are larger in the subsamples *without* these types of financial experts. The pattern is similar for the subsamples with and without executives of non-bank financial companies and the subsamples with and without finance professors. The most robust finding is that average ROA and ROE are virtually identical in all sample splits.

Thus, while the subsample differences are not always consistent with the traditional sorting story (bankers sorting into more profitable and less constrained firms), the sample differences do reveal non-random sorting of financial experts. The endogeneity underscores the importance of collecting a panel data set, including fixed effects and, where possible, instrumenting for the board presence of bankers.

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

II. Internal Investment and Loan Financing

The core question of this paper is whether board members with financial expertise affect

[13] Tables with the summary statistics of all subsamples and significance tests are available from the authors. All tests of significant differences in means use standard errors that are clustered at the firm level.

corporate policies and, if so, whether affiliation distorts their impact.

A. Sensitivity of Investment to Cash Flow

We begin our analysis by investigating the impact of finance experts on internal investment and financing decisions. We estimate the standard model of internal investment:

$$I_{it} = \alpha + \beta_1 CF_{it} + \beta'_2 FIN_{it} + \beta'_3 FIN_{it} * CF_{it} + \beta_4 Q_{it-1} + \beta_5 Q_{it-1} * CF_{it} + \beta'_6 X_{it} + \beta'_7 X_{it} * CF_{it} + \varepsilon_{it}$$

The model determines investment as a function of firm and board characteristics. *CF* is cash flow, *FIN* the set of dummies for finance experts, *Q* is Tobin's Q, and *X* an array of other controls, including the natural logarithms of firm and board size, the fraction of outside directors and fixed effects for year, S&P long term debt rating, and firm or industry. Industries are the Fama and French 48 industry groups. We test for the significance of β_3. To correct for heteroskedasticity and correlation of errors within firms, we cluster standard errors at the firm level.

Column I of Table 2 presents the baseline regression without banker indicators. As in prior studies, both cash flow and Q positively predict investment. The ratio of outside directors is negatively related to investment. Column II includes the dummies for financial experts. The cash-flow, Q, and board-independence coefficients vary little, and none of the financial-expert dummies are significant. The interaction of commercial banker and cash flow, however, has a negative coefficient that is statistically significant at the 1% level. The coefficient estimates on the interaction terms of other finance experts are insignificant and much smaller in magnitude. The results are robust to variations in the financial-expert variables such as using fractions or counts instead of dummies. Thus, the presence of commercial bankers is associated with significantly lower investment-cash flow sensitivity, but none of the other types of financial expertise appear to matter.

The main difficulty in interpreting these findings is unobserved firm heterogeneity. One interpretation is that commercial bankers affect corporate decision-making and induce lower investment-cash flow sensitivity. An alternative interpretation is that firms with low investment-cash flow sensitivity appoint bankers as directors, without the bankers directly influencing investment decisions. Or, bankers may decline directorships in firms that are investment-cash flow sensitive. The latter is particularly plausible if firms with higher investment-cash flow sensitivity are less healthy financially or even in finan-

cial distress. In these firms, the legal principles of equitable subordination and lender liability may deter a lending bank from board representation since involvement in active management impairs the bank's claims in case of bankruptcy (Kroszner and Strahan, 2001a). Board representation indicates such management.[14] Those concerns, however, are binding only in the concrete case of bankruptcy procedures. Bankruptcy is unlikely for our sample firms as, for example, indicated by the 2.05 average z-score (and 1.93 median).[15] Moreover, the average z-score is even higher in firms without commercial bankers (2.14) than in those with commercial bankers (1.81). Nevertheless, the broader selection concern remains, and we take several steps to address it.

First, we exploit within-firm variation in the board presence of bankers. In 55 cases, the COMBANKER dummy variable changes from 0 to 1, and in 93 cases from 1 to 0. The value of COMBANKER shows time-series variation in 104 out of 282 firms. In Column III, we add firm fixed effects and in Column IV we also include (firm)*(cash flow) interactions. The decrease in cash flow sensitivity among larger firms now becomes significant. Also, the positive effect of COMBANKER on investment becomes significant. Thus, absent their effect on investment through cash flow, bankers appear to increase investment. The negative effect of COMBANKER on cash flow sensitivity is diminished though still significant at the 5% and 10% level, respectively. As we will see in Section II.B, the reduced magnitude is due to constrained firms in which commercial bankers do little to influence firm policy. Overall, we conclude that investment cash flow sensitivity significantly declines as commercial bankers enter the board of a firm.

The robustness of our findings to the inclusion of firm-fixed effects leaves two possible interpretations. Either commercial bankers on the board reduce the sensitivity of investment to internal funds, or the results reflect time-varying firm characteristics. Firms may ask bankers to join boards precisely when they are seeking external financing and to depart when scaling back investment. And bankers may agree to join boards only if (and as long as) they foresee a profitable financing opportunity.

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[14] Board representation is, however, not sufficient for such impairment; see Sprayregen, Friedland and Mayer (2003) and Douglas (2003).

[15] Though we report the modified z-score of MacKie-Mason (1990), we have also used the formula from Altman (1968) to allow us to place our firms within the standard "zones of discrimination." The overall sample mean under this alternative specification is 3.74 and falls well within the "safe zone" (cutoff = 3). Similarly, the scores for firms with and without commercial bankers are 3.07 and 3.98, respectively.

Before we address the alternative explanation directly, we note that the low degree of variation in board size (within firms) undermines its plausibility. Investment and financing vary a lot within firms, but board size remains constant, from one year to the next, in 45% of all firm-years. The median change in board size from year to year is 0; the mean change is -0.102 (with a standard deviation of 1.296). Figure 1 shows that mean and median board size are, if anything, decreasing over our sample period. Moreover, director tenure is long, with a mean of nine years. Thus, the turnover of directors appears too low and "out of sync" with high-frequency corporate decisions to represent task- or policy-specific entry and exit. If directors are hired to implement specific policy changes, then most of their time on the board is likely to occur after those policies are in effect.

Nevertheless, we address this concern in two ways: excluding the effect of firm-years in which timing is likely and, most importantly, instrumenting for the board presence of commercial bankers. If directors are hired to help implement a specific firm policy, their impact should be mainly felt in the first one or two years of a banker's presence on the board. Thus, as a first robustness check, we remove the effect by recoding the COMBANKER dummy as 0 in those years. We account for data truncation by eliminating the first one or two sample years of each firm. Replicating Table 2, we find that the coefficients on the interaction terms become larger in magnitude and more significant statistically. For example, in the specification with firm fixed effects and their interactions with cash flow, the coefficient is -0.103 and significant at the 5%-level. Second, we identify years with major policy changes that are more plausible candidates for selective board appointments. Specifically, we remove the three years around major acquisitions, i.e. acquisitions with transaction values of at least 15% of the market value of the acquirer's assets. Our results are again unchanged.[16] The robustness checks suggest that timed director selection is unlikely to drive the estimated banker effect.

Finally, we instrument for the board presence of commercial bankers. We exploit the commercial-banking crisis of the late 1970s and early 1980s as a source of exogenous variation in board composition. When legislative changes during the 1970s and 1980s allowed greater competition in the banking industry, banks raised interest rates on demand

[16] Table available from the authors. We also check directly how frequently major acquisitions lead to board restructuring. We find only 6 cases of bankers entering or exiting in the 3 years around the acquisitions.

deposits inducing greater risk taking on the asset side of their balance sheets. Many of these risks failed to pay off. The sovereign debt crises in developing countries like Brazil, Mexico and Argentina and the end of the real estate boom in the 1980s eroded bank profitability. Beginning in the second half of the 1970s and continuing through the 1980s, the commercial banking industry went into crisis. The frequency of bank failure exploded (Park (1994)). As executives of failed commercial banks exited the potential director pool, the number of commercial bankers available to firms appointing new directors declined. As a result, firms that happened to appoint more directors during the 1976-1985 decade are likely to have fewer commercial bankers serving on the board. Our instrument for the number of commercial bankers serving on the board, then, is the number of current directors who were appointed between 1976 and 1985, denoted as "CRISIS."

The validity of the CRISIS instrument relies on the implicit assumption that the rate of board turnover between 1976 and 1985 is not different from other periods. If, instead, firms hired at a higher or lower rate during the crisis period, then the same shock that precipitated board restructuring might also explain changes in investment. We find, however, that the year-by-year distribution of directors' tenure is extremely stable. In every single year, the median is 7 years. In addition, the 25^{th} and 10^{th} percentiles of the tenure distribution are identical in all sample years, and the 75^{th} and 90^{th} percentile vary at most by one year in either direction.

Another potential concern about the CRISIS instrument is that it may capture variation in director tenure across firms. For example, well-run firms have low board turnover, resulting in both low values of the CRISIS instrument and persistently low investment-cash flow sensitivity. We address this concern directly by including mean board tenure and its interaction with cash flow in our regressions.[17] We also account for indus-

[17] Another way to address concerns that the CRISIS variable captures firms that are poorly run is to add additional controls for firm governance and its interaction with cash flow. We re-estimate our regressions including the number of outsiders on the board as an additional control and find little impact on the results. We have also added age and its interaction with cash flow since the definition of CRISIS places restrictions on directors' age. The results are unaffected. Finally, the results are robust to interacting the tenure variable with age and, in turn, with cash flow. This addresses the argument that not only long tenure, but also being young and active affects director effectiveness (and might be captured by the CRISIS variable).
Another concern might be that the tenure control variable is skewed given the slow rate of board turnover. We find, however, that mean board tenure exhibits little skewness in the data, with a mean of 9.82, a median of 9.25, and a standard deviation of 3.91. Moreover, the results of the regression in Table 4 become

try-specific patterns in board restructuring and investment-cash flow sensitivity by including dummies for the 48 Fama-French industry groups and their interactions with cash flow. These controls address, for example, responses to industry-specific takeover pressure.[18] Since our instrument mainly exploits variation in board appointments *across firms*, there is insufficient within-firm variation to include firm fixed effects.

It is important to acknowledge remaining concerns about excludability of the instrument from the investment regression. Ideally, firms would be differently affected by the banking crisis only through the channel of director selection. The banking crisis does not provide such a clean experiment. Director appointments between 1976 and 1985, however, are unlikely to affect investment during our later 1988-2001 sample period.

In Table 3, we present the results of two-stage least squares regressions using CRISIS and CRISIS interacted with cash flow to instrument for the number of commercial bankers and its interaction with cash flow.[19] As with board size, we use the natural logarithms of (one plus) CRISIS and (one plus) the number of commercial bankers on the board. We do not include the other financial experts, whose estimated impact was consistently small and insignificant and for which we do not have additional instruments. Column I replicates the baseline regression using the number of commercial bankers rather than our earlier indicator variable. In Columns II and III, we report the first stage regressions of the number of commercial bankers and its cash-flow interaction on CRISIS and its cash-flow interaction. The instruments are correlated with the variables for which they instrument. Wald tests reject, at the 1% level, that the coefficients on CRISIS and (CRISIS)*(CF) are jointly equal to zero. Column IV shows the investment model after instrumenting for COMBANKER and its cash-flow interaction. As in the baseline regression in Column I, Q is positively related to investment, while board independence is a negative predictor of investment, but a positive predictor of investment-cash flow sensitivity. The estimated effect of board tenure remains small and marginally significant with the opposite pattern: a positive effect on investment and a negative effect on its cash flow sensitiv-

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slightly stronger when using median tenure (and age) and are robust to including quadratic terms in median tenure and age and their interactions with cash flow.

[18] We also address the concern about takeover pressure directly and re-estimate the model starting in 1990 (after the takeover pressure largely subsided). We find again similar results.

[19] We use the number of bankers (rather than the dummy) in the instrument regressions, since a binary endogenous variable would induce non-classical measurement error.

ity. The level effect of COMBANKER loses its significance. Most importantly, the coefficient on (COMBANKER)*(CF) is again significantly negative. Evaluated at the mean and for the baseline year (1988), industry (agriculture), and S&P credit rating (none), investment increases by $0.41 for each dollar of cash flow. Adding a standard deviation of commercial banker presence to the board decreases this sensitivity by 30 cents, meaning that $1 of cash flow increases investment by only $0.11.

As a placebo test, we repeat the two-stage least-squares regressions using directors appointed between 1966 and 1975 in lieu of the instrument. Since this era pre-dated the commercial banking crisis, the results should not replicate. Indeed, we find that both the first and second stages fail. This uniqueness strengthens the argument that the CRISIS variables matter because of the proposed banking crisis channel and enhances the validity of our instrument. Moreover, the placebo instrument provides direct evidence that CRISIS does not simply capture the effect of "stable and long-lasting directorship."

We conclude that commercial bankers significantly reduce companies' sensitivity of investment to internal resources. We detect no such impact for other financial experts.

B. Is Less Investment-Cash Flow Sensitivity More Efficient?

We now ask whether the impact of bankers on investment benefits shareholders or the directors' own banking institution. We also explore the channel of the bankers' influence.

The reduction in investment-cash flow sensitivity is open to different interpretations. If investment-cash flow sensitivity reflects capital market imperfections, then bankers mitigate financing frictions. The boardroom presence of bankers may, for example, reduce information asymmetries and facilitate financing for valuable projects. If investment-cash flow sensitivity is due to a managerial propensity to over-invest out of free cash flow, bankers may increase value by acting as monitors and inducing firms to cut (over-)investment when internal cash flow is high. Alternatively, bankers might destroy value by providing additional funds to (empire-building) managers and allowing them to (over-)invest when cash flow is low. The latter story is plausible since bankers have little incentive to induce efficient investment, given the low shareholdings of U.S. banks relative to their loan volume (Gorton and Winton (2003)). Bankers may back inefficient but low-risk projects to benefit their own bank, possibly against the interest of shareholders.

1. Financing Constraints

To test these hypotheses, we first examine financial constraints. If the decrease in investment-cash flow sensitivity is the result of better access to external financing and less underinvestment, it should be most prominent when firms are financially constrained.

Unfortunately, there is little consensus on the best way to measure financial constraints. We employ several different proxies, proposed in previous literature. First, we construct the Kaplan-Zingles (KZ) index for our sample, following standard practice (Lamont, Polk, and Saá-Requejo, 2001; Baker, Stein, and Wurgler, 2003; Malmendier and Tate, 2005). Kaplan and Zingales (1997) argue that simple proxies like firm size and dividend payout do not correlate well with financing constraints.[20] They measure financial constraints by using both quantitative (accounting variables) and qualitative data (annual proxies, interviews with managers, etc). They estimate a logit regression to construct an index of financial constraints as a weighted average of several firm characteristics. Using the KZ coefficient estimates, 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* is cash flow, *K* capital, *Q* Tobin's Q, and *C* cash and short-term investments. Higher KZ values indicate greater financial constraints. We use sample median of the (lagged) KZ index to split firm years into a constrained and an unconstrained subsample.

The KZ index is not without shortcomings. In particular, it assumes that the index weights generalize beyond the original sample of manufacturing firms. Using the index to split the sample, rather than as a continuous measure, mitigates concerns about measurement error. Nevertheless, to check the robustness of our results, we consider three alternative proxies for financial constraints. First, we use the degree of disagreement among analysts, measured by the standard deviation of quarterly earnings estimates in the quarter ending before the annual proxy meeting. Second, we use the number of analysts following the stock. Both proxies capture informational asymmetries. Third, we use investment-grade long term debt ratings (BBB and above) as an indicator of smooth access to

[20] Using model-generated data, Moyen (2004) shows that firms with low dividends – considered to be more financially constrained in several studies – are in fact more likely to be unconstrained.

external capital.[21] For brevity, we report only the estimates using the KZ index. The alternative proxies lead to largely similar (and sometimes stronger) results.

Before turning to the split-sample regressions, we compare the subsamples of constrained and unconstrained firm-years and calculate differences in means.[22] Interestingly, in the constrained subsample average assets ($8.8bn), capital ($4.7bn) and investment ($0.7bn) are larger than in the unconstrained subsample ($6.9bn, $2.1bn, and $0.4bn respectively). Cash flow is smaller, though not significantly ($0.7bn versus $0.8bn). The difference becomes significant and large after normalizing by lagged capital. Book and market leverage are significantly larger in constrained firms. The average z-score is significantly lower in the constrained subsample (1.53) than in the unconstrained subsample (2.57) confirming, on the one hand, that the KZ index captures constraints. On the other hand, the z-scores illustrate that the differentiation between "constrained" and "unconstrained" is not to be confused with "financially troubled" and "financially healthy." Both z-scores are significantly different, at the 1% level, from 1. Thus, bankruptcy considerations are unlikely to have bite in either subsample.[23]

The summary statistics also allow us address the concern that bankers select into unconstrained firms. Commercial bankers are present on the board in 30% of the constrained subsample and insignificantly less (26%) in the unconstrained sample. In fact, there are no significant differences in the presence of any type of financial expert among the two subsamples of constrained and unconstrained firms. The lack of significant differences may also reflect that about half of the firms switch between the two samples, while bankers appointed to the board remain directors. Out of the 282 firms, 132 firms make at least one switch from "constrained" to "unconstrained" or vice versa.

Table 4 presents the split-sample regressions. In Columns I and II, we replicate the most stringent specification of Table 2 (Column IV, including firm effects and firm-cash flow interactions) for both subsamples. Note that, in this specification, we cannot easily interpret the coefficient of cash flow. It depends on which firm dummy we omit from the regression, and it captures only the sensitivity of that one firm. We find that

[21] When using credit ratings to split the sample, we drop firms that do not have rated debt.
[22] All tests of significant differences in means use standard errors that are clustered at the firm level.
[23] As above, we have also used the formula from Altman (1968) to place our firms within the standard "zones of discrimination." In the constrained subsample, the mean Altman's z-score is 2.47 and in the unconstrained sample it is 5.09. Both scores are well above the 1.8 cutoff for the "distress zone."

bankers significantly reduce the sensitivity of investment to cash flow when firms are *un*-constrained rather than when they are constrained. Also, the positive level effect of COMBANKER is present only in the unconstrained subsample. As before, none of the other financial experts exert a significant level or interaction effect.

These results cast doubt on the hypothesis that commercial bankers help to solve information problems between firms and capital markets. In the subset of firms that most likely affected by informational asymmetries, as indicated by financial constraints, bankers do not exert significant influence on investment and financing. The effect of commercial bankers on corporate boards is entirely driven by unconstrained firms.

The value consequences of reduced investment-cash flow sensitivity in unconstrained firms, however, remain ambiguous. Commercial bankers may prevent the abuse of funds when cash flow is high. Or, they may provide additional funds to empire-building managers when free cash flow is low. In the next subsection, we analyze lending and lending affiliation to disentangle the different interpretations. We will also test for funds flowing to constrained firms that the investment model does not detect.

2. Lending and Lending Affiliation

We start from additional tests for funding provided by banker directors, which the investment variable may fail to capture. We ask whether banker presence on the board increases firms' bank borrowing. As in the previous subsection, we distinguish different interpretations of increased lending (value creation through overcoming informational frictions versus value destruction via financing low-risk but inefficient projects) by differentiating between constrained and unconstrained firms.

Second, we test whether the reduction in investment-cash flow sensitivity is due to affiliated bankers, whose banks originate loans to the firm. A positive result would indicate that bankers on the board favor their banks' interests over shareholders.

We use the Loan Pricing Corporation's Dealscan database to obtain detailed information on loan terms and the names of lenders (see Güner (2006)). Table 5 summarizes the data. We consider a banker-director affiliated if her bank is a member of the lending syndicate. Of the 1,288 loans where the loan size is available, 89 are obtained by firms with an affiliated commercial banker on the board. In 46 of these deals the director's bank acts as a lead manager. 223 deals are obtained by firms with only unaffiliated

commercial bankers and 976 by firms without a commercial banker on the board. The first column of p-values ("p-value (A-U)") reveals that none of the firm variables have significantly different means in the Affiliated and Unaffiliated samples, including the board composition variables. Firms with affiliated commercial bankers have lower Q's than those without commercial bankers (p=0.15), pointing to worse investment opportunities. The statistics on tranche and spreads suggest that affiliated deals are, unconditionally, larger (significant with p = 0.03), but also more expensive (insignificant at p = 0.15) than unaffiliated deals. The same is true comparing affiliated deals to deals in firms without commercial bankers on the board. (Here, both differences in sample means are significant with p-values of 0.03 and 0.05, respectively).

To isolate the banker effect, we regress loan size on the presence of bankers, controlling for an array of firm, board, and deal characteristics. The firm and board controls are the logarithm of firm total assets; Tobin's Q; plant, property, and equipment over assets; stock volatility; leverage; log board size; and the ratio of independent directors on the board. The contract controls are designed to capture borrower risk, which in turn affects loan pricing. As in previous literature[24], we use the logarithm of the days between contract initiation and maturity, a dummy for origination 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 for more details on these variables.) We also include fixed effects for S&P credit ratings, year, and industry or firm.

Table 6 presents the regression results. Column I shows that commercial bankers on the board are associated with an increase in loan size of more than $346.7m, after including all the controls. The coefficient on the investment banker dummy is also positive, though smaller and not significant. The coefficients on all other expertise dummies are much smaller in magnitude and insignificant. Among all firm, board, and deal characteristics, only firm size and the number of lenders are significant (positive). Column II shows that the effect of commercial bankers is driven largely by affiliated deals, with a coefficient of $458.4m. The effects are even larger in magnitude if we include firm fixed effects ($510m and $643m), but have smaller p-values (0.20 and 0.12 respectively).

We also test whether the effects are stronger when the director's bank is the lead

[24] E.g., Kroszner and Strahan (2001b); Hubbard, Kuttner, and Palia (2002).

manager of the syndicate, who typically determines the loan terms. In untabulated regressions, we confirm this hypothesis. In the industry effect specification, Affiliated LEAD COMBANKER has a coefficient of $674m (p-value = 0.08), compared with only $229m for Affiliated PARTICIPANT BANK. The results are similar with firm fixed effects.

Thus, commercial bankers on the board seem to increase firms' borrowing, typically through their own banks rather than a reduction of (potentially wasteful) investment out of free cash flow.[25]

As in the analysis of investment, we check whether the additional lending is directed towards financially constrained or unconstrained firms. We measure the impact of bankers separately in the subsamples of constrained and unconstrained firms, using the overall sample median of the KZ index to split the sample. The results are in Columns III-VI of Table 6. We find that the loan increase is largely driven by unconstrained firms. In the model with industry fixed effects and the unconstrained subsample, affiliated loans are on average $911m larger (p-value = 0.03) than loans obtained by firms without a commercial banker on board. The coefficient estimate on Unaffiliated COMBANKER is $500m (p-value = 0.18). The p-value of the difference is 0.12. The affiliated banker effect is significantly smaller in the constrained subsample: the p-value of the difference in affiliated lending in unconstrained firms ($911m) and constrained firms ($213m) is 0.09. With firm fixed effects (Columns V and VI), the results are similar. Only the difference between affiliated and unaffiliated bankers in unconstrained firms is less pronounced.[26]

Overall, we consistently find larger bank loans when the bank has employees on the board, but only to unconstrained firms. This result is hard to reconcile with either view that interprets reduced investment-cash flow sensitivity as shareholder-value increasing (superior monitoring or overcoming informational asymmetries), but it is consistent with lending in the best interest of the bank.

We also test whether bankers on the board influence the cost of borrowing, drawn and undrawn spread, controlling for deal size.[27] We find no significant effect of commer-

[25] As in Section II.A., we check whether the effects of commercial bankers on loan size are concentrated in the first one or two years of the bankers' tenure on the board. We find some evidence that bankers provide larger (affiliated) loans in their first two years on the board; however, they continue to be associated with larger loans through the remainder of their tenure.
[26] Notably, the investment banker effect also becomes significant in the fixed effects regressions.
[27] Table available upon request.

cial bankers in constrained firms, regardless of affiliation. We also do not find significant price differences among the unconstrained firms. In other words, banker directors do not provide firms with a "price break," as the simple summary statistics seem to suggest.

Finally, we extend the analysis of "affiliation" to our earlier investment results. Merging the earlier firm-year sample and the loan sample allows us to identify lending affiliation and to test whether reduced investment-cash flow sensitivity is most pronounced for affiliated banker-directors. We classify a commercial banker director as "affiliated" if her bank has lent to the firm in the past, including participation in a syndicate.[28] We re-estimate the split sample results of Columns I and II in Table 4 with separate dummies for affiliated and unaffiliated commercial bankers in Columns III and IV of Table 4. This specification includes firm effects and the interactions of firm effects with cash flow. In the constrained subsample, the coefficients on both banker cash flow interactions (affiliated and unaffiliated) are *positive*, though insignificant. In the unconstrained subsample, instead, both coefficients are negative and significant. The affiliated banker interaction (-0.378), however, is significantly larger than the unaffiliated banker interaction (-0.081). The difference is significant with a p-value of 0.05. Thus, the reduction in cash flow sensitivity depends strongly on lending relationship with the director's bank.

Overall, the loan results confirm that bankers on the board reduce sensitivity of investment to cash flow by encouraging additional borrowing, particularly from their own banks. However, the additional finance is not available to the most financially constrained firms (who are most likely to be underinvesting), consistent with banker directors maximizing bank profits rather than shareholder value.

3. Investment Opportunities, Earnings and Capital Structure

To gain additional insights about the value implication, we examine whether firms that receive extra funding from banker directors have profitable investment opportunities. We also ask whether the extra lending provides benefits to shareholders that valuation ratios

[28] We also designed two alternative classification schemes to check whether, instead of capturing the impact of a banker-director who subsequently lends to the firm, the estimated effect is due to a pre-existing bank-firm relationship. First, we create a third category of "grey" commercial bankers who join a firm with a pre-existing lending relationship with their bank. Isolating them does not change the estimated impact of (the remaining) affiliated bankers. Second, we drop firm years that contain banker-directors who we cannot classify due to the censoring of Dealscan before 1988. Our initial classification scheme classifies bankers who are already on the board in 1988 as unaffiliated (until they make their first affiliated loan), to bias against finding an affiliation result. The results are, again, similar.

fail to capture, such as an improved capital structure.

In an ideal empirical analysis, we would evaluate whether the marginal project financed with a director-banker's loan creates or destroys value. Such an analysis, however, is hampered by two data limitations. First, we cannot link a loan to the specific project. Second, we cannot link specific projects to their marginal returns. Thus, we are limited to considering the joint effect of lending on all ongoing projects and the resulting overall performance. Even when the marginal contribution of a loan-financed project is negative, we might find a positive mean performance. In the context of external investments, i.e. acquisitions (see Section III.A), we will be able to cleanly separate those effects since we can identify the timing and return implications of distinct acquisitions. In the context of internal investments, we cannot fully remedy those empirical difficulties.

As a partial remedy, we proxy for the hypothetical counterfactual using industry performance. Firm by firm and year by year, we subtract the median industry value from the performance measure. We use four measures: return on assets (ROA), return on equity (ROE), Tobin's Q, and Altman's z-score. Industry is measured using the 48 Fama and French industry groups unless there are less than 5 sample firms in an industry.[29] We consider a seven-year window around loans (year -3 to year +3, with year 0 indicating the year of borrowing) and calculate the mean industry-adjusted value of each measure, separately for each group of borrowers, in each year.[30] We also evaluate the accounting returns and investment opportunities of firms with affiliated loans relative to borrowers with no or only unaffiliated bankers on their boards.

The left column of Figure 2 displays the performance of unconstrained firms. Starting with accounting performance, we find that firms with affiliated loans perform equal to or insignificantly worse than the industry benchmark in each year prior to lending and significantly worse post lending (in years 1 and 2 for ROA and in years 1 and 3 for ROE). Firms with bank loans but unaffiliated bankers, instead, outperform their industries in every year prior to and post lending, significantly so in most years. The performance of firms without bankers on their boards is indistinguishable from the industry benchmark. These results suggest that the additional lending through affiliated bankers is

[29] If there are fewer than five sample firms in an industry category, the Fama-French 17 group is used. If there are fewer than five sample firms in any of these groups, the Fama-French 12 group is used.
[30] We also confirmed the robustness of our results to using medians.

not justified by better ongoing or subsequent earnings. Affiliated borrowers perform persistently worse than the industry and unaffiliated borrowers.

In addition, the trend in performance post-lending is worse for affiliated borrowers. The difference in industry-adjusted ROA between borrowing firms with affiliated bankers and borrowing firms without bankers is *insignificant* in all years prior to the loan and in the year of the loan, but significantly negative or close to significant in the two years post loan (p=0.09 in year +1 and p=0.11 in year +2). ROE displays a similar trend. The declining trend in performance also emerges from comparing the post-loan performance of affiliated borrowers to their own pre-loan performance. From year –1 to year +1, industry adjusted ROA declines by 0.017 (p = 0.04) and ROE by 0.032 (p = 0.03).

Turning to the next measure, Tobin's Q, we find that the market perceives firms with affiliated loans to have the worst investment opportunities throughout the seven-year window. For affiliated borrowers, Q is insignificantly lower than the industry benchmark in every single year. It is insignificantly larger than the industry Q for unaffiliated borrowers and significantly larger for borrowers without bankers in every year. Affiliated borrowers also have lower Q's than unaffiliated borrowers and borrowers without banker-directors in every year (significantly so in one year and in all years, respectively). There is little evidence of a "correction" in Q post-lending.

Finally, firms with affiliated loans have persistently lower z-scores than the industry norm and than each of the other subgroups of borrowers, though the differences are small and insignificant in most years.

The right column of Figure 2 shows that the performance of constrained firms does not differ across types of lending for any of the four performance measures.

Thus, among financially unconstrained firms the additional bank loans to affiliated borrowers neither reflect superior investment opportunities nor appear to generate higher earnings. Firms that obtain bank loans from their director's bank are significantly worse performers and have worse investment opportunities, both compared to the industry and to other borrowers, and their performance worsens (if anything) post lending.[31]

As a final step, we ask whether affiliated lending provides benefits to sharehold-

[31] Tables of all differences-in-means tests are available from the author.

ers that the valuation ratios fail to capture. In particular, lending might move a firm's capital structure closer to an optimal level. Graham (2000) finds, for example, that firms tend to use debt too conservatively relative to its tax benefits. The pattern is particularly true of large, liquid, and profitable firms with low distress costs, i.e., precisely the type of firm in our unconstrained subsample. This interpretation would require the additional affects the capital structure rather than, e.g., substituting for other types of debt.

We test for significant and persistent increases in firm leverage following (affiliated) loans to unconstrained firms, using two definitions of leverage: (1) the sum of long-term debt and debt in current liabilities divided by long-term debt plus debt in current liabilities plus book equity for book leverage or divided by market capitalization for market leverage; (2) the difference in assets and book equity divided by assets for book leverage and divided by assets minus book equity plus market equity for market leverage. We regress the post-borrowing change in 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. We also include year and the Fama-French 17 industry dummies.[32]

We find that affiliated bankers lead to a significantly larger increase in book leverage (using either measure) from the end of the fiscal year prior to borrowing to the end of the first full fiscal year after borrowing than non-banker directors. The difference between unaffiliated and affiliated bankers, however, is not statistically significant and disappears by the end of the third year following the loan. Moreover, there are few significant estimates if we consider market rather than book leverage. Finally, the results are not robust to minor changes in variable definitions; e.g., the treatment of directors whose bank had a lending relationship with the firm prior to their appointment to the board.

In summary, there is little evidence that the larger loans provided by affiliated bankers carry through to leverage. Even the effect on book leverage appears to be short-lived and not part of a systematic strategy to raise leverage.

In light of these results and the performance results one might wonder whether the extra lending is actually in the interests of creditors. If extra lending induces firms to undertake value-destroying projects, it might also increase the likelihood of default. Figure

[32] The results are also robust to including credit rating dummies, as elsewhere in the paper.

2 reveals that, even post-borrowing, the mean z-score among affiliated borrowers never drops below 1.5. In unreported estimations, we confirm that affiliated lending does not increase default probability relative to unaffiliated lending or lending when banker directors are not present, as measured by changes in S&P credit ratings or distance to default.

The findings overall suggest that bank executives use their directorships to increase lending, but only to firms with low financial constraints and credit risk, coupled with poor internal investment opportunities. Their influence appears more likely to facilitate overinvestment than to correct inefficient underinvestment.

III. External Investment and Public Debt Financing

Turning from internal to external investment decisions, we ask whether directors with financial expertise might affect mergers and acquisitions, especially since major acquisitions require board approval. The type of financial experts most likely to affect acquisition decisions are investment bankers. Investment bankers are also most likely to be involved in public securities issues. Both as underwriters and (potential) advisors to acquisitions, they may need to choose between maximizing bank profits and shareholder value.

A. Acquisitions

First, we ask whether directors with financial expertise help to prevent value-destroying acquisitions or, instead, facilitate overbidding. By analyzing abnormal returns to merger bids, we can assess directly the impact of expertise on shareholder value. We use SDC data on completed mergers in which the acquirer obtains more than 50% of the target shares and with a deal value of more than $5m. Similar to previous literature (e.g. Baker and Savasoglu, 2002), we exclude leveraged buyouts, recapitalizations, self-tenders, acquisitions of subsidiaries, spin-offs, exchange offers, repurchases, minority stake purchases, privatizations, and acquisitions of remaining interests.

The summary statistics are in Panel A of Table 7. About 30% of the target firms are publicly traded, compared to less than 7% in the raw SDC data. The average target value is $214m, 7% of the acquirer's total assets. In 16% of the acquiring companies, an investment banker sits on the board; in 26% commercial bankers. Panel A also shows the differences between acquiring firms with and without investment bankers on the board (and corresponding p-values from t-tests, with clustering at the industry level). Targets

acquired by companies with investment-banker directors are significantly more likely to be public and are larger, both in absolute dollar terms and as a percentage of the acquirer's size. The presence of other (commercial) bankers and executives of non-bank financial institutions do not vary significantly. Companies with investment bankers are, however, significantly less likely to have outside finance executives and accountants or to have finance professors on their board. In untabulated probit regressions, we also find that, controlling for an array of firm characteristics and the usual set of fixed effects (Fama-French 48 industries, year, and credit rating), firms with investment bankers on the board acquire at roughly the same frequency as other firms.

As a first step towards assessing the value implications of mergers with and without investment-banker directors, we analyze the announcement effects of merger bids. We compute cumulative abnormal returns over a [-2,+2] day window around the announcement date as the sum of the daily difference between raw returns and the CRSP value-weighted index returns.[33] The mean return is –1.33% (p = 0.04) in firms with investment bankers and –0.32% (p = 0.25) in firms without investment bankers. The difference in median returns is exactly the same: 1.01 percentage points lower for acquirers with investment bankers on their board. The difference in means is barely insignificant (at a p-value of 0.11). The 1.33% decline is three times as large as in the overall sample.

In Panel B, we take this analysis to the regression framework and relate cumulative abnormal returns to the presence of each type of finance expert on the board: investment bankers, commercial bankers, executives of non-bank financial companies, financial executives and accountants, and finance academics. We control for board size and board independence as well as year, industry and credit-rating fixed effects.

The results confirm the pattern in the means. The estimated impact of investment bankers is –1 ppt, significant at the 10% level. The result loses significance after introducing more merger-specific controls: dummies for the type of financing and whether the acquisition is diversifying (i.e., whether the target and the acquirer share the same 2-digit SIC code). But, splitting the sample into acquisitions with public targets and with private targets, we find the size of the investment-banker effect doubles and becomes significant

[33] We use $\alpha = 0$ and $\beta = 1$ since the market beta is likely close to 1 for our sample firms and because of the short window. The assumption eliminates biases in the returns estimation due to noise in the joint estimation of alphas and betas. However, the market-model results with estimated alphas and betas are similar.

at the 5% level for private targets. There is no effect for public targets. These differences may reflect the more subjective valuation of private targets. The value consequences of mergers with private targets are less obvious, making it easier for investment bankers to direct the board and shareholders towards approval of even value-destroying mergers.

We also estimate significant coefficients for non-bank finance executives and for financial executives and accountants, though the results vary across specifications. In both full-sample regressions, we estimate a significantly positive effect of 0.8 ppt for non-bank finance executives. For private targets, we estimate a significantly positive effect of 1 ppt for financial executives and accountants. Financial executives and accountants display the opposite pattern to investment bankers in the public versus private sample splits. This finding suggests a positive governance role for financial executives and accountants, who are often identified as the "ideal" for directors (Stuart 2005).

We also examine whether the underperformance of mergers in firms with investment-banker directors reverts over longer horizons or whether it persists (or even increases). We analyze the long-run pattern of buy-and-hold returns over a window of +/– 36 months around each acquisition, compounded monthly over the relevant interval. In Figure 3, we display the buy-and-hold returns from month 0 to month x up to $x = 36$. And, for months -36 to 0, we display the buy-and-hold returns from month $-x$ to 0, downward shifted so that the cumulative return as of month 0 is 0.

The left graph in Figure 3 shows monthly raw returns, compounded for each merger event and then averaged across events within the no-ibanker and the ibanker subsamples. Acquirers without investment bankers display similar or better performance in the three years prior to the merger and their performance trend continues smoothly post merger. Acquirers with investment bankers, instead, display a lower rate of performance post merger, both relative to their own prior performance and relative to the performance of acquirers without investment-banker directors. The difference becomes even more striking when turning to abnormal returns. In the right panel, market returns (CRSP value-weighted index) are first subtracted off the monthly raw returns before compounding. As before, firms without investment bankers on their board display a smooth trend of performance both prior to and post merger. Firms with investment bankers, instead, revert from positive abnormal returns prior to the merger to negative abnormal returns after

the merger. We find the same results using alternative models of abnormal returns (e.g., subtracting full-sample industry-mean returns or industry-mean returns and the firm-specific pre-event average difference between firm and industry-mean returns). Thus, the negative announcement returns appear to be reinforces rather than reversed.[34]

As in any long-run event study, our results may be explained by the event or by the (mis-)specification of expected returns. This concern is ameliorated in our context since we observe the same pattern – a kink at the merger month for firms with investment bankers, but none for firms without investment bankers – in the raw returns, i.e. without any (potentially biased) adjustment for expected returns. Moreover, the joint-hypothesis problem is less of a concern for *differences* in CARs. Here, the post-event underperformance of firms with investment bankers relative to those without can be attributed to misspecification only if these firms have different true expected return models.

Our results are consistent with the hypothesis that investment banker directors are more prone to succumb to a CEO's value-destroying acquisitiveness than other directors. They may even induce acquisitions despite the lack of attractive targets, in the hope of increasing profits for their banks through advisory fees. Our dataset does not allow us to differentiate these hypotheses. But, it does allow the conclusion that conflicted investment bank directors are associated with managerial overinvestment in outside targets.

B. Size and Cost of Public Debt Issues

Mirroring our analysis of internal investment, we turn from investment to financing. Given investment bankers' expertise, we analyze focus on public debt issues.[35]

We obtain contractual data on public debt issues for our sample firms from SDC. The summary statistics are in Table 8. The sample includes 202 affiliated debt issuances, where a director's investment bank underwrites the issue, 765 unaffiliated debt issues, where none of the directors' banks are involved in the deal, and 3,147 deals where the firm has no investment banker on the board. As with loans, affiliated debt issues tend to be larger ($176.47m compared to $114.33m for unaffiliated issues and $100.76m for issues to firms without bankers on the board), significantly so when measured as percent-

[34] We also checked the robustness of the results to including firm and merger characteristics in a regression framework. We confirm that the short run decline at merger announcement of firms with investment bankers is not reversed in the long run. Instead, these firms underperform though typically insignificantly.
[35] We also analyzed equity issues, but, given the small sample, did not find significant results.

age of firm value (for affiliated versus unaffiliated, p = 0.06). The average cost of borrowing, measured as at-issue yield spread (spread over the treasury benchmark) and gross spread (underwriter fees as a percentage of the principal amount issued), is lowest for unaffiliated deals. The difference in the spreads obtained by firms for affiliated issuances is significant at the 5%- and 1%-level for at-issue yield and gross spread respectively.

In Table 9, we relate the board presence of financial experts to the size and pricing of debt issues, controlling for firm, board, and contract characteristics. We employ borrower and deal characteristics that are likely to affect debt size and pricing, following previous empirical literature.[36] The firm and board 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. Industries are the 17 Fama-French industry groups. Contractual features are the logarithm of the days between issuance and maturity, the logarithm of the principal (in the pricing regressions), and indicators for over-the-counter listings, for variable-rate coupons, and for covenants on call, put, and sinking funds provisions.

In Columns I and II, we document the size results. The presence of an investment banker is associated with a $20.1m larger deal. This magnitude is economically significant: it is equal to 19% of the average principal in the sample. The effect seems to be driven by affiliated directors, as the coefficient estimate on Affiliated IBANKER is $64.8m (p = 0.09), compared with $4.7m (p = 0.72) for Unaffiliated IBANKER, though the difference lacks significance (p = 0.16).[37] In unreported estimations, we also find that investment bankers are associated with more frequent outside financing. Thus, as in the commercial banker setting, the larger issues lead to more capital inside the firm.

In Columns III and IV, we analyze the pricing of public debt. First, we regress the at-issue yield on board composition and other controls. We observe a negative but insignificant effect of both affiliated and unaffiliated investment bankers on the board. Using gross spread, we find 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 (p = 0.02, and different

[36] E.g., Datta, Iskandar-Datta, and Patel (1999). See the Appendix for further details on these variables.
[37] The result is robust to scaling debt size by total market value. The size and price results are not robust to including firm effects.

from the coefficient on Affiliated IBANKER at the 10% level), which corresponds roughly to 11% of the sample mean of gross spread.

Overall, then, the impact of investment bankers on public debt issues is similar to that of commercial bankers on loans. Investment bankers are associated with larger issues, especially when their bank is underwriting the issue. They are able to obtain lower underwriting fees – possibly due to their negotiation skills and industry networks – but do so only when the objective of maximizing fees to their bank does not get in the way.

IV. Financial Expertise in the Absence of Conflicts of Interests

Our analysis has shown that financial experts affect corporate decisions from which their financial institutions can benefit. Financial experts without such incentives do not exert any measurable impact. As the last step in our analysis, we turn to a corporate decision where the interests of financial institutions and shareholders do not conflict, but financial expertise is still valuable: the design of executive compensation.

The common rationale for performance-based compensation – like stock and options – is to align CEO and shareholder interests. It is, however, debated whether the explosion of option compensation in the 1990s was the solution to or, rather, the result of such agency problems. One view is that the increase in option compensation reflects changing CEO incentives over the last two decades (Gabaix and Landier, 2006). An alternative view is that the emergence of stock options allowed CEOs to extract additional rents since options are less transparent than cash (e.g., they did not need to be expensed in annual reports) and therefore less likely to violate the shareholders' "outrage constraint" (Bebchuk and Fried, 2003). From both perspectives, more financial literacy of directors is desirable – either to implement option compensation or to prevent abuses.

In Table 10, we test whether financial experts on corporate boards affect CEO compensation.[38] First, we ask whether the initiation and size of option compensation is related to the arrival of financial experts on the board. Size is calculated as the natural logarithm of one plus the Black-Scholes value of option grants. We include a standard set of controls (current and lagged stock returns, CEO Age and its square, CEO Tenure and

[38] For this analysis, we supplement the 1988-1994 data from Hall and Liebman with compensation data from ExecuComp for 1995 through 2003. To control for differences in the valuation of CEO option grants between the two data sets, we include an indicator variable for the ExecuComp sample years.

its square, Firm Size, Board Size, Board Independence, and year fixed effects) and firm fixed effects. We find that Finance Professors exert a significantly positive effect (p-value = 0.06) on initiation (Column I) and an insignificantly positive effect (p-value = 0.16) in the grant-size specification (Column II). None of the other types of financial expert exerts a significant effect. In an alternative specification, using the number of financial experts of each type instead of dummies, the impact of Finance Professors becomes significant both in the dummy specification (p=0.02) and in the grant size specification (p=0.06) while the effect of all other types of financial experts remains insignificant.

Second, we ask whether financial expertise affects pay-to-performance sensitivity, measured as the sensitivity of total compensation or cash compensation to current and lagged stock performance (using the empirical specification of Hall and Liebman (1998)).[39] We use changes both in the natural logarithm of one plus total compensation (Column III) and the same for cash compensation (Columns IV) as the dependent variables.[40] We find that finance professors have a negative impact on the sensitivity. Again, for bankers and other finance experts, we do not find significant effects (other than a negative coefficient for the interaction of R_t and investment-banker in one specification).

Surprisingly, finance professors appear to simultaneously increase the size of option grants and to reduce or not affect pay-performance sensitivity. Even though the value consequences of pay-to-performance sensitivity are difficult to assess, the simultaneity with increased grant size is hard to interpret as an "improvement" of CEO incentives. It is consistent with CEO extraction being facilitated by the appointment of finance professors. However, conclusive evidence of CEO extraction or even of a true decrease in overall pay-to-performance sensitivity would require direct measurement of the tradeoff between additional CEO option holdings and reduced sensitivity of total compensation.

Overall, there is little evidence that financial expertise on the board matters at all for compensation policies. Without strong incentives (as in the case of loans for commer-

[39] Ideally, we would measure how changes in performance affect CEO wealth (including existing stock and option holdings). Unfortunately, Execucomp does not provide data on individual option packages.

[40] To construct cash compensation, we splice cash compensation from ExecuComp (TCC) with the sum of salary and bonus from the Hall and Liebman data. To construct total compensation, we splice total compensation from ExecuComp (TDC1) with the sum of salary, bonus, other compensation, restricted stock grants and the Black-Scholes value of options grants from the Hall and Liebman data. We again include an indicator variable for Execucomp sample years to control for differences in the computation of option values in the two data sets.

cial bankers and in the case of security issuances for investment bankers), financial experts appear to exert little detectable influence on firm policies.

V. Conclusion

This paper tests whether directors with financial expertise exert significant influence on corporate decisions and, if so, whether they serve shareholders' interests. We employ a novel dataset on board composition, whose long-term panel structure allows us to move beyond the cross-sectional analysis prevalent in previous literature. We find that finance experts significantly affect the finance and investment policies of firms on whose board they serve. Commercial bankers help reduce the sensitivity of investment to the firm's cash flows by extending large loans, particularly through the director's bank. However, firms that are financially constrained do not benefit from the additional financing. Banker directors increase financing only to firms with good credit and minimal financial constraints, but poor investment opportunities. These results suggest that banker-directors act in the interests of creditors. We also show evidence for the impact of investment banker directors on (external) investment and public financing. Investment bankers appear to induce larger public debt issues, but also poorer firm performance after acquisitions. We conclude that board financial expertise need not be in the best interest of shareholders. Searching for a silver lining, we test whether bankers lead to more efficient policies when shareholder and creditor interests do not conflict. In the context of executive option grants and pay-to-performance sensitivity, we find little evidence to support this hypothesis. If anything, non-conflicted financial experts, like finance professors, appear to reduce the efficiency of compensation contracts.

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 goes beyond mere monitoring, and is affected by director interests that conflict with those of shareholders. Though the overall impact of financial experts on shareholder value is difficult to assess, specific policies – like financing, investment, and compensation – do not seem to improve when financial experts join the board of directors. Firms (and policy makers) must trade off potential improvements in monitoring against potential losses through the advisory channel when appointing (or mandating the appointment of) affiliated financial experts to the board.

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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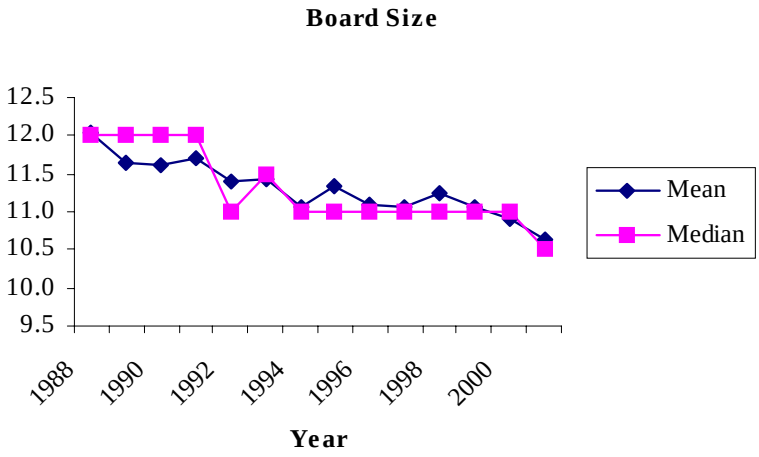

Figure 1. Board Size over the Sample Period

The figure shows the annual mean and median board size (number of directors on the board).

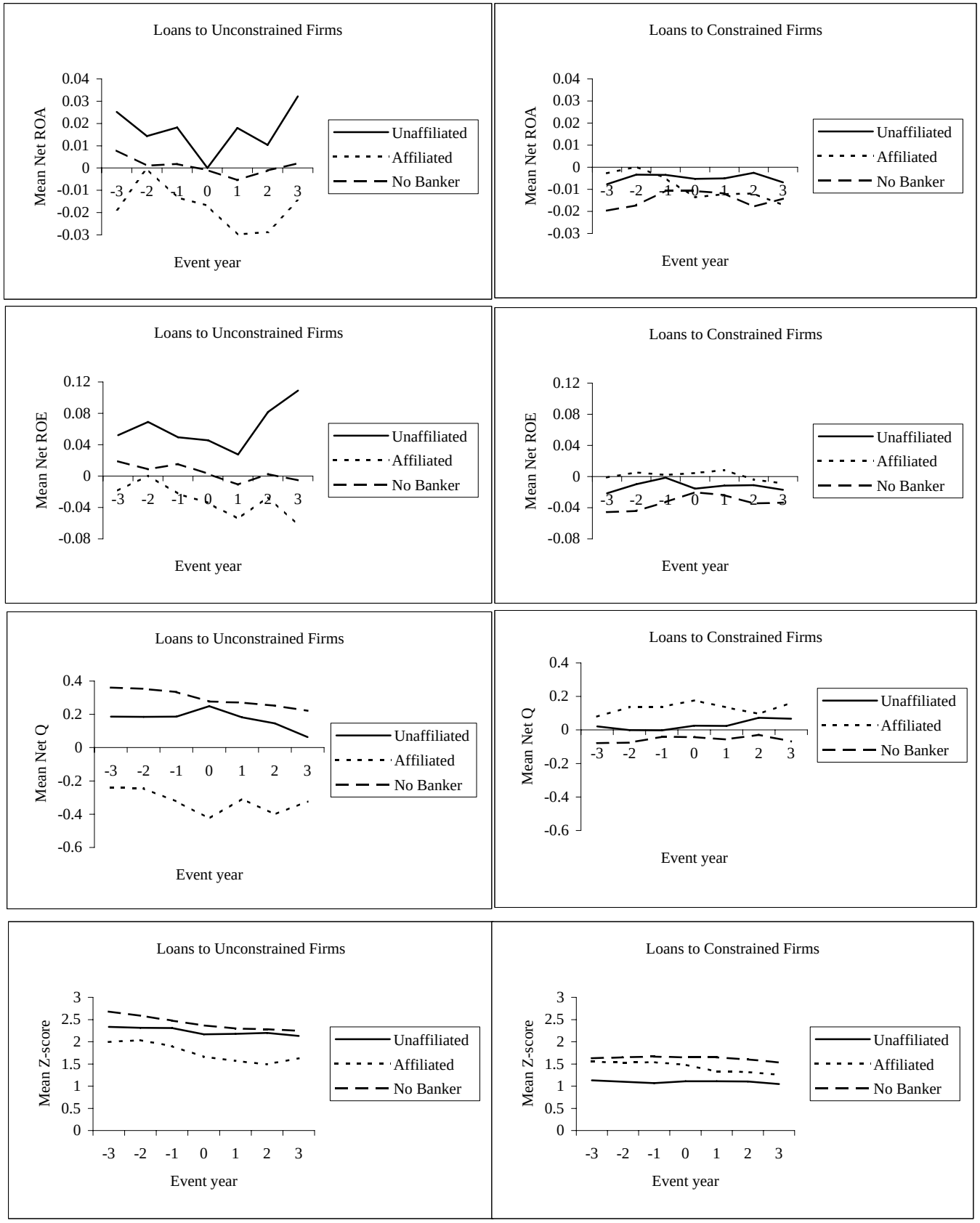

Figure 2. Firm Performance Conditional on Bank Borrowing

The first six panels depict the sample means of ROA, ROE, and Q net of the full sample industry median. Industry is measured using the 48 Fama and French industry groups. If there are less than 5 sample firms in a category, the Fama-French 17 group is used; if there are less than 5 sample firms in this group, the Fama-French 12 group is used. The last two panels depicts unadjusted sample-mean Altman's Z-scores. ROA is income before extraordinary items plus interest expense plus deferred taxes (when available) plus income tax credit (when available), divided by the average of current and lagged book assets. ROE is net income divided by the average of current and lagged book equity. Z-score is 3.3 times the difference in operating income before depreciation and depreciation and amortization plus sales plus 1.4 times retained earnings plus 1.2 times working capital, divided by book assets. Q is the market value of assets divided by the book value of assets. Constrained (unconstrained) firms are those with lagged Kaplan-Zingales index values above (below) the full sample median. Year 0 indicates the fiscal year in which the firm has obtained at least one bank loan.

Affiliated indicates that a commercial banker is present on the board at the time of the loan and that the director's bank is among the loan's originators. Unaffiliated indicates that a commercial banker is present on the board, but his/her bank is not involved in the loan. No banker indicates that no commercial banker sits on the board at the time of the loan.

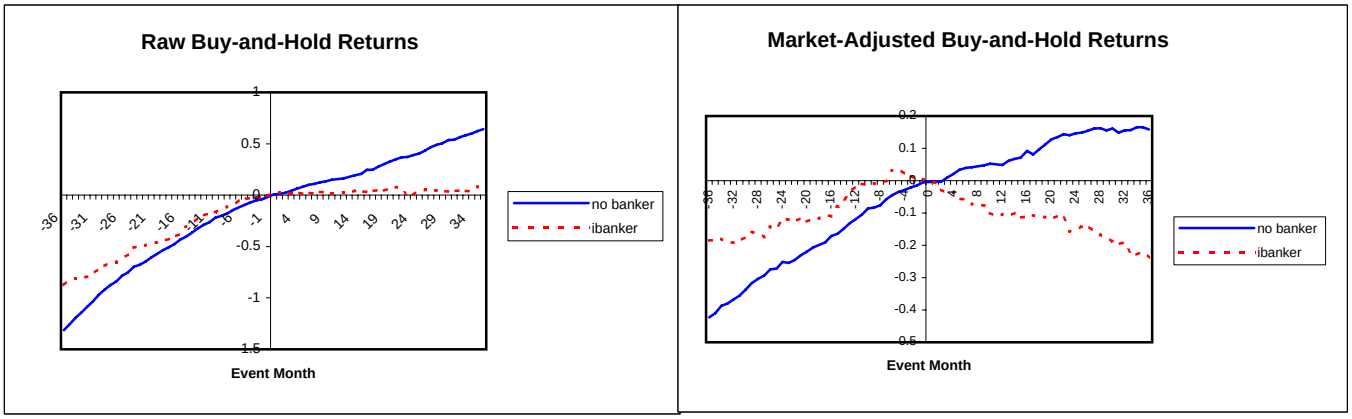

Figure 3. Long Run Stock Performance Around Mergers

The figures show stock performance around mergers in event time. Month 0 is the month in which the firm announced a merger bid. The sample includes all completed deals with target shares acquired > 50% and deal value > $5M. Leveraged buyouts, recapitalizations, self-tenders, acquisitions of subsidiaries, spin-offs, exchange offers, repurchases, minority stake purchases, privatizations, and acquisitions of remaining interests are excluded. In the legend, "ibanker" indicates that an investment banker is present on the board at the time of the merger bid and "no ibanker" indicates the opposite. All returns are buy and hold, i.e. compounded monthly over the relevant interval. For months 0 to 36, the figures display buy and hold returns from month 0 to month x. For months -36 to 0, the figures display buy and hold returns from month -x to 0, downward shifted so that the cumulative return as of month 0 is 0. In the left figure, monthly raw returns are compounded for each merger event and then averaged across events within the no ibanker and ibanker subsamples. In the right figure, market returns (CRSP value-weighted index) are first subtracted off the monthly raw returns before compounding.

Table 1. Summary Statistics

The sample period is 1988-2001. Panel A provides summary statistics for director-years. All variables other than Age, Tenure and Number of Other Directorships are dummy variables indicating the director's career. Panels B and C describe firm-years. Firm characteristics are from Compustat Annual (item numbers in parentheses): Assets are total assets (6), Capital is property, plant, and equipment (8), Investment is capital expenditures (128), Cash Flow is earnings before extraordinary items (18) plus depreciation (14). Tobin's Q is the market value of assets over total assets (6), where market value is total assets plus market equity (25*199) minus book equity (6-181-10+35+79). Return on Assets (ROA) is income (18+15+50+51) divided by the average of current and lagged total assets. Return on Equity (ROE) is net income (172) scaled by the average of current and lagged book equity. Altman's z-score is defined as 3.3 times the difference in operating income before depreciation (13) and depreciation and amortization (14) plus sales (12) plus 1.4 times retained earnings (36) plus 1.2 times working capital (121), divided by total assets (6). Book Leverage is interest bearing debt (9+34) divided by operating assets (9+34+216).
Market Leverage is interest bearing debt divided by the market value of assets. Board Size is the number of directors. Board Independence is the ratio of outside directors over board size. COMBANKER, IBANKER, (Outside) Financial Executives & Accountants, Executives of Non-bank Financial Companies, and Finance Professors in Panel B are dummy variables indicating if at least one director has the corresponding career. In Panel C, industry dummies are based on the 17 Fama-French categories.

	Obs	Mean	Median	Std Dev
Panel A. Director Summary Statistics (Number of Directors = 5,378)				
Insider	32,943	0.267	0	0.442
Finance executive (CFO, Accountant, Treasurer, VP of Finance)	32,943	0.030	0	0.172
CFO	32,943	0.021	0	0.144
Accountant	32,943	0.004	0	0.060
Outsider				
Commercial Banker	32,943	0.030	0	0.171
Investment Banker	32,943	0.017	0	0.129
Executive of Non-Bank Financial Company	32,943	0.080	0	0.271
Finance Executive (CFO, Accountant, Treasurer, VP of Finance)	32,943	0.023	0	0.150
CFO	32,943	0.010	0	0.100
Accountant	32,943	0.005	0	0.073
Finance Professor (includes economics, accounting, business)	32,943	0.017	0	0.129
Lawyer	32,943	0.043	0	0.204
Consultant	32,943	0.028	0	0.165
Other industry career	32,943	0.441	0	0.497
Non-corporate (academic, non-profit, civic leader)	32,943	0.103	0	0.304
Age	32,923	59.581	60	8.004
Tenure	32,682	9.063	7	8.132
Female	32,943	0.085	0	0.280
Number of Other Directorships	32,938	2.008	2	2.090
Panel B. Firm Summary Statistics (Number of Firms = 282)				
Assets ($M)	2910	8185.72	3388.94	18978.52
Capital ($M)	2910	3405.63	1478.30	6074.26
Investment ($M)	2910	586.92	201.45	1760.71
Cash Flow ($M)	2910	735.99	292.29	1566.99
Investment / lagged capital	2910	0.21	0.17	0.16
Cash flow / lagged capital	2910	0.35	0.25	0.37
Q (lagged)	2910	1.74	1.32	1.30
ROA	2868	0.08	0.08	0.06
ROE	2888	0.13	0.11	0.27
Altman's z-score	2705	2.05	1.93	1.14
Book Leverage	2906	0.43	0.45	0.22
Market Leverage	2896	0.23	0.21	0.16
Board Size	2910	11.32	11	2.64
Board Independence	2910	0.73	0.75	0.14
COMBANKER (dummy)	2910	0.27	0	0.44
Affiliated	2910	0.06	0	0.24
Unaffiliated	2910	0.21	0	0.40
IBANKER (dummy)	2910	0.16	0	0.37
Financial Executives & Accountants (dummy)	2910	0.46	0	0.50
Outside Financial Executives & Accountants (dummy)	2910	0.23	0	0.42
Executives of Non-bank Financial Companies (dummy)	2910	0.56	1	0.50
Finance Professors (dummy)	2910	0.18	0	0.38

Panel C. Fama-French 17 Industry Groups (Finance Industry Excluded)

Industry	Mean	Industry	Mean	Industry	Mean	Industry	Mean
Food	0.06	Durables	0.03	Steel	0.02	Transport	0.06
Mining	0.01	Chemicals	0.05	Fab. Prod.	0.01	Utilities	0.15
Oil	0.03	Consumer	0.06	Machine	0.09	Retail	0.07
Textiles	0.02	Construction	0.04	Cars	0.04	Other	0.26

Table 2. Sensitivity of Investment to Cash Flow: Baseline Regressions

OLS regressions with Investment as the dependent variable, defined as capital expenditures normalized by lagged capital. Cash Flow is earnings before extraordinary items plus depreciation, normalized by lagged capital. Q is the (lagged) ratio of market value of assets to book value of assets. Firm Size is the natural logarithm of lagged book assets. Board Size is the natural logarithm of the number of directors on the board. Board Independence is the ratio of the number of outside directors to board size.

COMBANKER is an indicator variable for the presence of a commercial banker on the board; IBANKER indicates an investment banker. Likewise, Executives of Non-bank Financial Companies, Financial Executives & Accountants, and Finance Professors are dummy variables indicating the presence of such a director on the board. All regressions include year fixed effects and their interactions with Cash Flow. All regressions also include S&P credit rating fixed effects (defined using the S&P long term debt rating) and their interactions with Cash Flow. Industry indicators are coded according to the 48 Fama-French industry groups. All standard errors are clustered by firm.

	(I)	(II)	(III)	(IV)
Cash Flow	0.461	0.389	0.382	0.608
	[2.13]**	[1.70]*	[1.43]	[1.85]*
(COMBANKER)*(Cash Flow)		-0.116	-0.085	-0.066
		[3.66]***	[2.47]**	[1.66]*
(IBANKER)*(Cash Flow)		-0.03	-0.086	0.002
		[0.69]	[1.54]	[0.04]
(Executives of Non-bank Financial Cos)*(Cash Flow)		-0.012	-0.066	-0.025
		[0.40]	[1.43]	[0.93]
(Financial Executives & Accountants)*(Cash Flow)		0.007	0.034	0.012
		[0.22]	[1.19]	[0.40]
(Finance Professors)*(Cash Flow)		-0.001	-0.068	-0.075
		[0.03]	[1.23]	[1.55]
COMBANKER		0.017	0.035	0.034
		[1.61]	[2.82]***	[2.62]***
IBANKER		0.026	0.021	-0.011
		[1.49]	[1.13]	[0.54]
Executives of Non-bank Financial Companies		0.001	0.020	0.011
		[0.17]	[1.49]	[1.13]
Financial Executives & Accountants		0.008	-0.001	0.010
		[0.89]	[0.05]	[0.94]
Finance Professors		0.007	0.016	0.009
		[0.44]	[0.75]	[0.46]
Q	0.024	0.029	0.032	0.027
	[2.18]**	[2.48]**	[2.95]***	[2.66]***
(Q)*(Cash Flow)	0.011	0.002	-0.001	-0.007
	[1.24]	[0.23]	[0.10]	[0.70]
Firm Size	0.003	0.005	-0.027	0.008
	[0.55]	[0.80]	[2.16]**	[0.58]
(Firm Size)*(Cash Flow)	-0.017	-0.020	-0.075	-0.130
	[0.68]	[0.85]	[2.87]***	[3.98]***
Board Size	0.034	0.021	-0.039	-0.041
	[1.58]	[0.98]	[0.95]	[1.42]
(Board Size)*(Cash Flow)	-0.065	-0.008	0.087	0.054
	[0.73]	[0.10]	[0.73]	[0.63]
Board Independence	-0.093	-0.096	-0.115	-0.034
	[1.84]*	[2.02]**	[1.88]*	[0.61]
(Board Independence)*(Cash Flow)	0.141	0.206	0.524	0.229
	[0.92]	[1.37]	[2.76]***	[1.67]*
Industry Fixed Effects	yes	yes	no	no
(Industry Fixed Effects)*(Cash Flow)	yes	yes	yes	no
Firm Fixed Effects	no	no	yes	yes
(Firm Fixed Effects)*(Cash Flow)	no	no	no	yes
Observations	2910	2910	2910	2910
R-squared	0.48	0.49	0.69	0.80

Robust t-statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 3. Sensitivity of Investment to Cash Flow: Instrumental Variable Estimation

Investment is capital expenditures normalized by lagged capital. Cash Flow is earnings before extraordinary items plus depreciation, normalized by lagged capital. Q is the (lagged) ratio of market value of assets to book value of assets. Firm Size is the natural logarithm of lagged book assets. Board Size is the natural logarithm of the number of directors on the board. Board Independence is the ratio of the number of outside directors to board size. Board Tenure is the mean tenure of directors on the board. COMBANKER is the natural logarithm of one plus the number of commercial bankers on the board. CRISIS is the natural logarithm of one plus the number of directors who joined the board between 1976 and 1985. Column I shows the baseline OLS regresssion; Columns II and III the first-stage OLS regressions, using CRISIS and its interaction with Cash Flow to instrument for COMBANKER and its interaction with Cash Flow; the second stage is in Column IV.

All regressions include year fixed effects, industry fixed effects, and their interactions with Cash Flow. All regressions also include S&P credit rating fixed effects (using the S&P long term debt rating categories) and their interactions with Cash Flow. Industry indicators are coded according to the 48 Fama-French industry groups. All standard errors are clustered by firm.

	(I)	(II)	(III)	(IV)
	Baseline	**First Stage**		**2SLS**
Dependent Variable	Investment	COMBANKER	(COMBANKER)*(CF)	Investment
Cash Flow	0.480	0.355	-0.327	0.256
	[2.27]**	[0.95]	[1.35]	[0.94]
(COMBANKER)*(Cash Flow)	-0.163			-0.820
	[4.09]***			[1.91]*
COMBANKER	0.023			0.202
	[1.86]*			[1.09]
(CRISIS)*(Cash Flow)		0.193	0.149	
		[3.03]***	[3.97]***	
CRISIS		-0.095	-0.040	
		[2.03]**	[3.93]***	
Q	0.028	0.025	0.030	0.043
	[2.52]**	[1.29]	[2.40]**	[2.50]**
(Q)*(Cash Flow)	0.001	-0.040	-0.056	-0.028
	[0.14]	[2.64]***	[2.70]***	[1.08]
Firm Size	0.004	0.002	0.012	0.011
	[0.65]	[0.06]	[1.36]	[1.04]
(Firm Size)*(Cash Flow)	-0.018	-0.003	-0.030	-0.033
	[0.79]	[0.06]	[0.83]	[1.09]
Board Size	0.031	0.378	0.001	-0.031
	[1.59]	[3.68]***	[0.02]	[0.45]
(Board Size)*(Cash Flow)	-0.028	-0.127	0.282	0.182
	[0.38]	[0.88]	[2.33]**	[1.20]
Board Independence	-0.095	0.304	0.006	-0.153
	[1.97]**	[2.11]**	[0.12]	[1.97]*
(Board Independence)*(Cash Flow)	0.158	-0.089	0.253	0.361
	[1.10]	[0.38]	[1.36]	[1.97]*
Board Tenure	0.001	0.001	0.001	0.001
	[1.86]*	[2.09]**	[1.46]	[1.83]*
(Board Tenure)*(Cash Flow)	-0.004	-0.005	-0.003	-0.004
	[1.90]*	[2.21]**	[1.53]	[1.88]*
Observations	2907	2907	2907	2907
R-squared	0.49	0.23	0.41	0.36

Robust t-statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4. Sensitivity of Investment to Cash Flow: Split-Sample Results

OLS regressions with Investment as dependent variable, defined as capital expenditures normalized by lagged capital. Constrained (unconstrained) firms are those with lagged Kaplan-Zingales index values above (below) the sample median. Cash Flow is earnings before extraordinary items plus depreciation, normalized by lagged capital. Q is the (lagged) ratio of market value of assets to book value of assets. Firm Size is the natural logarithm of lagged book assets. Board Size is the natural logarithm of the number of directors on the board. Board Independence is the ratio of the number of outside directors to board size.

COMBANKER is an indicator variable for the presence of a commercial banker on the board; IBANKER indicates an investment banker. Likewise, Executives of Non-bank Financial Companies, Financial Executives & Accountants, and Finance Professors indicate the presence of such a director on the board. Affiliated COMBANKER indicates the presence of a commercial banker whose bank has a prior lending relationship with the firm. Unaffiliated COMBANKER indicates that commercial banker directors are present, but none have lending relationships. All regressions include firm and year fixed effects and their interactions with Cash Flow. All regressions also include S&P credit rating fixed effects (using the S&P long term debt rating categories), and their interactions with Cash Flow. All standard errors are clustered by firm.

	(I) Constrained	(II) Unconstrained	(III) Constrained	(IV) Unconstrained
Cash Flow	0.675	0.811	0.414	0.772
	[0.53]	[2.05]**	[0.30]	[1.94]*
(COMBANKER)*(Cash Flow)	0.150	-0.090		
	[1.30]	[2.24]**		
(Affiliated COMBANKER)*(Cash Flow)			0.200	-0.378
			[1.30]	[2.54]**
(Unaffiliated COMBANKER)*(Cash Flow)			0.137	-0.081
			[1.08]	[1.94]*
(IBANKER)*(Cash Flow)	0.058	0.016	0.058	0.022
	[0.35]	[0.24]	[0.35]	[0.33]
(Execs of Non-bank Fin Cos)*(Cash Flow)	0.050	-0.011	0.049	-0.011
	[0.61]	[0.34]	[0.59]	[0.33]
(Fin Execs & Accountants)*(Cash Flow)	0.001	0.03	-0.002	0.029
	[0.01]	[0.71]	[0.02]	[0.67]
(Finance Professors)*(Cash Flow)	0.231	-0.114	0.229	-0.119
	[1.37]	[1.81]*	[1.35]	[1.91]*
COMBANKER	-0.016	0.055		
	[0.80]	[2.36]**		
Affiliated COMBANKER			-0.027	0.139
			[1.14]	[3.23]***
Unaffiliated COMBANKER			-0.013	0.055
			[0.63]	[2.22]**
IBANKER	-0.005	-0.003	-0.005	-0.008
	[0.18]	[0.09]	[0.19]	[0.26]
Executives of Non-bank Financial Companies	-0.004	0.006	-0.004	0.006
	[0.27]	[0.28]	[0.26]	[0.29]
Financial Executives & Accountants	0.01	-0.007	0.011	-0.009
	[0.56]	[0.33]	[0.58]	[0.43]
Finance Professors	-0.049	0.046	-0.049	0.049
	[1.93]*	[1.29]	[1.90]*	[1.35]
Q	0.060	0.008	0.060	0.009
	[2.33]**	[0.56]	[2.31]**	[0.64]
(Q)*(Cash Flow)	-0.034	-0.001	-0.034	-0.001
	[0.88]	[0.04]	[0.87]	[0.09]
Firm Size	0.015	0.021	0.015	0.020
	[0.49]	[0.90]	[0.48]	[0.86]
(Firm Size)*(Cash Flow)	-0.228	-0.114	-0.227	-0.112
	[1.93]*	[3.36]***	[1.92]*	[3.21]***
Board Size	0.078	-0.034	0.080	-0.027
	[1.26]	[0.48]	[1.28]	[0.41]
(Board Size)*(Cash Flow)	-0.475	0.002	-0.483	0.007
	[1.29]	[0.02]	[1.30]	[0.06]
Board Independence	-0.087	-0.082	-0.087	-0.074
	[0.93]	[0.79]	[0.93]	[0.73]
(Board Independence)*(Cash Flow)	0.723	0.075	0.726	0.065
	[1.95]*	[0.43]	[1.93]*	[0.38]
Observations	1350	1364	1350	1364
R-squared	0.89	0.84	0.89	0.84

Robust t-statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 5. Summary Statistics: Bank Loans

Stock volatility is 12-month trailing standard deviation of CRSP monthly returns. Other firm variables are total book assets, Tobin's Q, plant, property, and equipment over assets, book leverage and market leverage, all defined using Compustat annual items. Board size is the number of directors, Board independence is the number of outside directors scaled by the number of directors. COMBANKER, IBANKER, (Outside) Financial Execs & Accountants, Execs of Non-bank Fin. Companies, and Finance Professors are dummy variables that indicate the board presence of at least one director with the corresponding career. Affiliated indicates that a commercial-banker director's bank is among the originators of the loan. Affiliated Lead indicates that the director's bank is the lead lender. Unaffiliated indicates that a commercial banker is present on the board, but his/her bank is not involved in the loan. p-value (A-U) gives the p-value of a t-test that the differences in means between the Affiliated Combanker subsample and Unaffiliated Combanker subsample is 0. Standard errors for this test are clustered at the firm level. Likewise, p-value (A-N) tests the differences between the Affiliated Combanker and No Combanker subsamples.

All Loan Variables are from LPC Dealscan. Tranche is loan size (in $M). Drawn Spread is the annual fee per dollar that the borrower pays the lender for a term loan. Un-drawn Spread is the annual fee per dollar to keep the credit line active. Both rates are quoted in basis points as a spread over a bench-mark such as LIBOR. Maturity is the number of years between signing of the loan contract and 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. Number of Lenders denotes the number of banks involved. Senior indicates that the debt has a priority over other debt obligations of the company. Secured indicates that the deal involves a lien on borrower assets (e.g., assets, guarantees, or other collateral).

	Full Sample			**Affiliated Commercial Banker**			**Unaffiliated Commercial Banker**			p-value	**No Commercial Banker**			p-value
	Obs	Mean	Std Dev	Obs	Mean	Std Dev	Obs	Mean	Std Dev	(A - U)	Obs	Mean	Std Dev	(A - N)
Firm Variables														
Assets ($M)	1288	8724.82	17515.22	89	14602.66	32802.22	223	10490.25	22940.14	0.24	976	7785.46	13537.57	0.14
Q	1288	1.61	1.15	89	1.46	0.59	223	1.49	1.13	0.85	976	1.65	1.19	0.15
PPE over Assets	1288	0.42	0.22	89	0.54	0.23	223	0.52	0.24	0.77	976	0.39	0.20	0.00
Stock Volatility	1288	0.08	0.04	89	0.07	0.03	223	0.07	0.03	0.75	976	0.09	0.04	0.03
Book Leverage	1288	0.49	0.19	89	0.47	0.20	223	0.51	0.19	0.29	976	0.49	0.19	0.68
Market Leverage	1288	0.26	0.17	89	0.24	0.13	223	0.29	0.17	0.16	976	0.26	0.17	0.55
Board Size	1288	11.20	2.57	89	12.19	2.47	223	11.52	2.34	0.19	976	11.04	2.61	0.03
Board Independence	1288	0.73	0.14	89	0.77	0.09	223	0.76	0.12	0.38	976	0.72	0.14	0.01
COMBANKER	1288	0.24	0.43	89	1	0	223	1	0	n.a.	976	0	0	n.a.
Affiliated	1288	0.07	0.25	89	1	0	223	0	0	n.a.	976	0	0	n.a.
Unaffiliated	1288	0.17	0.38	89	0	0	223	1	0	n.a.	976	0	0	n.a.
Affiliated Lead	1288	0.04	0.19	89	0.52	0.50	223	0	0	n.a.	976	0	0	n.a.
IBANKER	1288	0.21	0.41	89	0.20	0.40	223	0.11	0.32	0.17	976	0.23	0.42	0.71
Fin Execs & Accountants	1288	0.45	0.50	89	0.42	0.50	223	0.39	0.49	0.75	976	0.47	0.50	0.52
Accountants	1288	0.12	0.33	89	0.01	0.11	223	0.07	0.25	0.09	976	0.14	0.35	0.00
CFOs	1288	0.32	0.47	89	0.31	0.47	223	0.29	0.45	0.73	976	0.33	0.47	0.82
Outside Fin Execs & Accountants	1288	0.23	0.42	89	0.22	0.42	223	0.21	0.41	0.80	976	0.24	0.43	0.82
Outside Accountants	1288	0.06	0.24	89	0	0	223	0.05	0.22	0.14	976	0.07	0.26	0.00
Outside CFOs	1288	0.12	0.33	89	0.16	0.37	223	0.10	0.30	0.34	976	0.13	0.33	0.59
Execs of Non-bank Fin Cos	1288	0.56	0.50	89	0.49	0.50	223	0.55	0.50	0.52	976	0.57	0.49	0.40
Finance Professors	1288	0.14	0.34	89	0.13	0.34	223	0.12	0.33	0.87	976	0.14	0.35	0.94
Loan Variables														
Tranche ($M)	1288	644.24	1254.56	89	1408.93	2993.20	223	649.42	1588.62	0.03	976	573.33	797.43	0.03
Tranche / Market Value of Firm	1288	0.08	0.10	89	0.11	0.12	223	0.07	0.10	0.08	976	0.08	0.10	0.20
Drawn Spread (basis points)	1024	81.94	85.42	78	57.79	57.56	155	80.38	88.59	0.15	791	84.62	86.77	0.05
Un-drawn Spread (basis points)	817	18.24	14.26	69	15.30	12.12	126	18.72	14.70	0.15	622	18.47	14.37	0.15
Maturity	1108	3.54	2.58	85	3.68	2.28	185	3.77	3.58	0.86	838	3.47	2.34	0.47
Credit Line	1288	0.60	0.49	89	0.63	0.49	223	0.57	0.50	0.40	976	0.61	0.49	0.69
Syndicated	1288	0.85	0.36	89	0.94	0.23	223	0.81	0.40	0.02	976	0.85	0.36	0.02
Number of Lenders	1288	12.33	12.84	89	19.35	17.10	223	8.46	9.22	0.00	976	12.58	12.80	0.03
Senior	1288	0.87	0.34	89	0.84	0.37	223	0.83	0.38	0.76	976	0.88	0.32	0.47
Secured	1288	0.13	0.34	89	0.13	0.34	223	0.10	0.30	0.62	976	0.14	0.35	0.94

Table 6. Loan Size Regressions

OLS regressions with Loan Size (Tranche) in $ millions as the dependent variable. Firms are constrained (unconstrained) when their lagged Kaplan-Zingales index is above (below) the full sample median.COMBANKER is an indicator variable for the presence of a commercial banker on the board; IBANKER indicates an investment banker. Executives of Non-bank Financial Companies, Financial Executives & Accountants, and Finance Professors are dummy variables indicating the presence of such a director on the board. Affiliated COMBANKER indicates that a commercial-banker director's bank is among the originators of the loan. Unaffiliated COMBANKER indicates that commercial bankers are present on the board, but their banks are not involved in the loan. Controls for firm characteristics are Q (market value of assets over the book value of assets), Firm Size (natural logarithm of total book assets), PPE/Assets (plants, property and equipment scaled by assets), Leverage (long term debt plus debt in current liabilities, divided by long term debt plus debt in current liabilities plus stockholders' equity), Stock Volatility (measured over the 12 months preceding the loan initiation), and S&P credit rating fixed effects, using the S&P long-term debt rating-categories.
Controls for board characteristics are Board Size (natural logarithm of number of directors on the board) and Board Independence (ratio of outside directors to board size). Controls for deal characteristics are Maturity (natural logarithm of the days to maturity), Senior (dummy indicating that the debt has a priority over other debt obligations of the company), Secured (dummy indicating that the deal involves a lien on borrower assets, guarantees, or other collateral), Number of Lenders (number of banks involved), Syndicated (dummy indicating whether the loan comes from a syndicate of banks) and indicators for loan style, loan purpose, and missing observations for the maturity and secured variables. Industry indicators are coded according to the 48 Fama-French industry groups. All standard errors are clustered by firm.

	(I) Full Sample	(II) Full Sample	(III) Constrained	(IV) Unconstrained	(V) Constrained	(VI) Unconstrained
COMBANKER	346.729					
	[1.86]*					
Affiliated COMBANKER		458.393	213.364	910.576	47.226	1,464.07
		[2.18]**	[1.86]*	[2.25]**	[0.38]	[2.14]**
Unaffiliated COMBANKER		295.692	121.316	500.442	-17.887	1,341.58
		[1.57]	[1.78]*	[1.35]	[0.20]	[1.29]
IBANKER	203.157	200.727	73.851	365.428	119.679	886.125
	[1.17]	[1.16]	[1.03]	[1.51]	[1.17]	[1.81]*
Executives of Non-bank Financial Cos	-17.069	-13.146	-106.732	-6.420	-0.991	-71.075
	[0.35]	[0.27]	[1.68]*	[0.07]	[0.01]	[0.24]
Financial Executives & Accountants	23.054	21.396	112.679	214.156	264.817	402.142
	[0.36]	[0.34]	[1.51]	[1.03]	[2.29]**	[1.53]
Finance Professors	-28.430	-27.157	-102.41	206.814	22.525	-264.967
	[0.32]	[0.31]	[1.53]	[0.84]	[0.18]	[0.79]
Controls for firm characteristics	yes	yes	yes	yes	yes	yes
Controls for board characteristics	yes	yes	yes	yes	yes	yes
Controls for deal characteristics	yes	yes	yes	yes	yes	yes
Year Fixed Effects	yes	yes	yes	yes	yes	yes
Industry Fixed Effects	yes	yes	yes	yes	no	no
Firm Fixed Effects	no	no	no	no	yes	yes
Observations	1288	1288	658	493	658	493
R-squared	0.43	0.43	0.61	0.51	0.70	0.60

Robust t-statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 7. Acquisitions

Panel A. Summary Statistics

SDC data of completed mergers of sample firms, with > 50% target shares acquired and > $5m deal value. Leveraged buyouts, recapitalizations, self-tenders, subsidiary acquisitions, spin-offs, exchange offers, repurchases, minority stake purchases, privatizations, and remaining-interest acquisitions are excluded. The Cash Only dummy is 1 if the deal payment is 100% cash. The Public Target dummy is 1 if the target is a public company. COMBANKER, IBANKER, (Outside) Financial Execs & Accountants, Execs of Non-bank Financial Companies, and Finance Professors are dummy variables indicating the board presence of at least one director with the corresponding career. Board Size is the number of directors. Board Independence is the ratio of outside directors to board size. CAR is the cumulative abnormal return over the (-2,+2) window around the merger bids, computed as raw returns minus CRSP value-weighted index returns. The p-values (last column) are from t-tests that the differences in means between firms with and without investment-banker directors at the time of their merger bids is 0, with standard errors clustered at the industry level (17 Fama-French industries).

	Full Sample				Investment Bankers				No Investment Bankers				
	Obs	Mean	Median	Std Dev	Obs	Mean	Median	Std Dev	Obs	Mean	Median	Std Dev	p-value
% owned after transaction	526	98.76	100	7.15	83	98.59	100	7.31	443	98.79	100	7.12	0.76
% of target acquired	526	96.42	100	11.65	83	96.54	100	11.59	443	96.40	100	11.68	0.90
Target Value ($M)	526	214.04	128.92	227.76	83	261.62	164	263.91	443	205.12	122	219.52	0.05
Cash Only (dummy)	526	0.63	1	0.48	83	0.59	1	0.49	443	0.63	1	0.48	0.75
Public Target (dummy)	526	0.30	0	0.46	83	0.37	0	0.49	443	0.29	0	0.45	0.08
IBANKER	526	0.16	0	0.36	83	1	1	0	443	0	0	0	n.a.
COMBANKER	526	0.26	0	0.44	83	0.34	0	0.48	443	0.25	0	0.43	0.42
Executives of Non-bank Financial Cos	526	0.65	1	0.48	83	0.64	1	0.48	443	0.65	1	0.48	0.86
Finance Executives & Accountants	526	0.33	0	0.47	83	0.23	0	0.42	443	0.35	0	0.48	0.20
Outside Finance Executives & Accountants	526	0.18	0	0.39	83	0.06	0	0.24	443	0.21	0	0.41	0.00
Finance Professors	526	0.14	0	0.35	83	0	0	0	443	0.17	0	0.38	0.00
Board Independence	526	0.72	0.73	0.12	83	0.76	0.78	0.11	443	0.72	0.73	0.12	0.21
Board Size	526	10.98	11	2.81	83	12.04	12	2.45	443	10.79	11	2.84	0.02
CAR [-2,+2]	526	-0.48%	-0.51%	0.05	83	-1.33%	-1.41%	0.05	443	-0.32%	-0.42%	0.05	0.11

Panel B. Market Reaction to Merger Bids

OLS regressions with CAR as the dependent variable. Board Size is the natural logarithm of number of directors. Cash Only (Stock Only) is equal to 1 if the acquisition is financed with cash (stock) and is 0 otherwise. Mixed financing is the omitted category. Diversifying is equal to 1 if the acquiror and target do not share the same 2 digit SIC code. All other variable definitions and sample restrictions are described in Panel A. All regressions include industry and year fixed effects. All regressions include Board Independence, the natural logarithm of Board Size, and S&P credit rating fixed effects, using the S&P long-term debt rating categories. Industry indicators are coded according to the 17 Fama-French industry

	All Bids	All Bids	Public Targets	Private Targets
IBANKER	-0.010	-0.009	0.010	-0.021
	[1.91]*	[1.71]	[0.86]	[2.35]**
COMBANKER	0.000	-0.001	0.018	-0.013
	[0.02]	[0.26]	[1.29]	[1.43]
Executives of Non-bank Financial Companie	0.008	0.008	0.005	0.007
	[1.82]*	[1.76]*	[0.54]	[0.59]
Financial Executives & Accountants	0.004	0.003	-0.007	0.010
	[1.06]	[0.75]	[0.53]	[2.91]**
Finance Professors	0.003	0.005	0.006	0.003
	[0.93]	[1.45]	[0.61]	[0.25]
Cash Only		-0.003	0.011	-0.011
		[0.36]	[1.17]	[1.26]
Stock Only		-0.005	-0.012	-0.001
		[0.65]	[1.77]*	[0.15]
Diversifying		0.014	0.028	0.006
		[2.62]**	[1.81]*	[0.51]
Observations	526	526	160	248
R-squared	0.08	0.09	0.28	0.16

Robust t-statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 8. Summary Statistics: Public Debt

Data on public debt issues are from SDC. Stock volatility is 12-month trailing standard deviation of CRSP monthly returns. Other firm variables are total book assets, Tobin's Q, plant, property, and equipment over assets, book leverage and market leverage, all defined using Compustat annual items. Board size is the number of directors, Board independence is the number of outside directors scaled by the number of directors. COMBANKER, IBANKER, (Outside) Financial Execs & Accountants, Execs of Non-bank Fin. Companies, and Finance Profs are dummy variables that indicate the board presence of at least one director with the corresponding career

Affiliated (Unaffiliated) IBANKER indicates that an investment-banker director's bank is (not) among the underwriters of the debt. Principal is debt size in $m. At-Issue Yield Spread is the yield to maturity at issuance (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 a variable coupon rate. Puttable, Callable, and Sinking funds indicate the presence of call, put, and sinking funds provisions in the debt contract. The p-values (A-U) are based on t-tests that the differences in means between the Affiliated IBANKER subsample and Unaffiliated IBANKER subsample are 0; p-values (A-N) test the differences between the Affiliated IBANKER and No IBANKER subsamples. Standard errors are clustered at the firm level.

	Full Sample			**Affiliated IBANKER**			**Unaffiliated IBANKER**			p-value	**No IBANKER**			p-value
	Obs	Mean	Std Dev	Obs	Mean	Std Dev	Obs	Mean	Std Dev	(A - U)	Obs	Mean	Std Dev	(A - N)
Firm Variables														
Assets ($m)	4114	38016.56	56925.63	202	50143.42	76247.55	765	86796.97	89629.05	0.01	3147	25380.20	34153.52	0.39
Q	4114	1.43	0.73	202	1.36	0.69	765	1.33	0.57	0.74	3147	1.46	0.76	0.46
PPE over Assets	4114	0.38	0.23	202	0.32	0.17	765	0.32	0.17	0.97	3147	0.40	0.24	0.25
Stock Volatility	4114	0.08	0.03	202	0.08	0.03	765	0.07	0.02	0.03	3147	0.08	0.03	0.39
Book Leverage	4114	0.59	0.17	202	0.60	0.21	765	0.65	0.17	0.15	3147	0.58	0.17	0.76
Market Leverage	4114	0.30	0.13	202	0.32	0.17	765	0.33	0.15	0.73	3147	0.29	0.12	0.58
Board Size	4114	12.22	2.19	202	12.37	2.33	765	13.19	2.22	0.01	3147	11.97	2.10	0.53
Board Independence	4114	0.80	0.12	202	0.75	0.15	765	0.79	0.15	0.05	3147	0.81	0.11	0.26
IBANKER	4114	0.24	0.42	202	1	0	765	1	0	n.a.	3147	0	0	n.a.
Affiliated	4114	0.05	0.22	202	1	0	765	0	0	n.a.	3147	0	0	n.a.
Unaffiliated	4114	0.19	0.39	202	0	0	765	1	0	n.a.	3147	0	0	n.a.
COMBANKER	4114	0.26	0.44	202	0.27	0.44	765	0.48	0.50	0.02	3147	0.21	0.41	0.74
Execs of Non-bank Fin Cos	4114	0.52	0.50	202	0.30	0.46	765	0.34	0.47	0.72	3147	0.57	0.49	0.06
Fin Execs & Accountants	4114	0.32	0.47	202	0.50	0.50	765	0.44	0.50	0.64	3147	0.28	0.45	0.18
Outside Fin Execs & Accountants	4114	0.20	0.40	202	0.33	0.47	765	0.22	0.41	0.25	3147	0.19	0.39	0.41
Finance Professors	4114	0.12	0.32	202	0.13	0.34	765	0.05	0.23	0.47	3147	0.13	0.34	0.98
Debt Variables														
Principal ($m)	4114	107.00	171.12	202	176.47	197.64	765	114.33	211.15	0.24	3147	100.76	156.84	0.18
Principal / Firm Value	4114	0.01	0.02	202	0.01	0.03	765	0.01	0.01	0.06	3147	0.01	0.02	0.41
At-Issue Yield Spread	2194	103.21	75.87	104	116.74	64.65	354	95.20	76.41	0.05	1736	104.03	76.25	0.38
Gross Spread	2258	0.58	0.39	125	0.59	0.38	386	0.48	0.32	0.01	1747	0.60	0.40	0.86
Maturity	4114	8.36	8.30	202	7.29	7.97	765	5.98	6.74	0.41	3147	9.01	8.55	0.34
OTC	4114	0.00	0.05	202	0	0	765	0.00	0.04	0.32	3147	0.00	0.06	0.17
Floating Rate	4114	0.14	0.34	202	0.15	0.36	765	0.24	0.43	0.00	3147	0.11	0.31	0.41
Puttable	4114	0.04	0.19	202	0.04	0.20	765	0.04	0.19	0.98	3147	0.04	0.19	0.96
Callable (Make Whole Call)	4114	0.07	0.25	202	0.07	0.25	765	0.03	0.17	0.16	3147	0.08	0.27	0.81
Sinking Funds	4114	0.02	0.15	202	0.01	0.10	765	0.02	0.15	0.57	3147	0.02	0.15	0.28

Table 9. Cost and Size of Public Debt Issues

OLS regressions with dependent variables Principal (amount of debt issue in $m) in Columns I and II, At-Issue Yield spread (in bp as spread over the benchmark treasury rate) in Column III, and Gross Spread (underwriter fees as a percentage of the issue) in Column IV. Indicators for put, call, and sinking fund covenants, and variable coupon rates are included in all estimations, but not shown in the table. Q is the market value of assets over the book value of assets. 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 ratio of outside directors to board size. PPE/Assets is plants, property and equipment scaled by assets.
Leverage is long term debt plus debt in current liabilities, divided by long term debt plus debt in current liabilities plus stockholders' equity. Stock Volatility is measured over the 12 months preceding the debt issue. Maturity is the natural logarithm of the days to maturity. COMBANKER is an indicator variable for the presence of a commercial banker on the board; IBANKER indicates an investment banker; Executivess of Non-bank Financial Companies, Financial Executives & Accountants, and Finance Professors are dummy variables indicating the presence of such a director on the board. Affiliated IBANKER indicates that the investment banker director's bank is among the underwriters of the issue. Unaffiliated IBANKER indicates that an investment banker is present on the board, but his/her bank is not involved in the issue. All regressions include industry and year fixed effects as well as S&P credit rating fixed effects, using the S&P long-term debt rating categories. Industry indicators are coded according to the 17 Fama-French industry groups. All standard errors are clustered by firm.

Dependent Variable	(I) Principal ($m)	(II) Principal ($m)	(III) At-issue Yield	(IV) Gross Spread
IBANKER	20.144			
	[1.81]*			
Affiliated IBANKER		64.822	-4.396	-0.007
		[1.69]*	[0.57]	[0.18]
Unaffiliated IBANKER		4.720	-2.075	-0.063
		[0.36]	[0.31]	[2.29]**
COMBANKER	8.869	10.524	-0.043	0.041
	[0.74]	[0.85]	[0.01]	[1.69]*
Executives of Non-bank Financial Companies	1.201	1.606	-2.337	0.033
	[0.11]	[0.15]	[0.49]	[1.63]
Financial Executives & Accountants	9.649	9.488	3.536	0.029
	[0.95]	[0.93]	[0.78]	[1.55]
Finance Professors	4.548	3.645	-15.004	-0.051
	[0.27]	[0.21]	[3.07]***	[2.08]**
Q	17.730	18.280	-10.192	-0.027
	[1.88]*	[1.92]*	[3.71]***	[1.37]
PPE/Assets	-57.395	-60.696	-9.849	-0.122
	[1.30]	[1.39]	[0.66]	[1.41]
Stock Volatility	291.26	256.331	571.468	1.552
	[2.13]**	[1.85]*	[5.78]***	[2.94]***
OTC	-2.439	0.019	-12.516	0.261
	[0.06]	[0.00]	[0.43]	[1.73]*
Leverage	-178.011	-169.661	28.433	0.087
	[3.48]***	[3.16]***	[1.39]	[1.22]
Firm Size	53.274	53.555	-11.212	-0.052
	[6.08]***	[6.01]***	[4.15]***	[4.06]***
Maturity	38.909	38.298	4.239	0.073
	[4.71]***	[4.82]***	[1.74]*	[4.69]***
Principal (log)			7.337	0.028
			[5.95]***	[2.54]**
Board Size	-51.815	-51.163	17.008	-0.021
	[0.97]	[0.96]	[1.55]	[0.37]
Board Independence	-148.903	-145.326	30.914	0.250
	[2.97]***	[2.85]***	[1.49]	[2.32]**
Observations	4114	4114	2194	2258
R-squared	0.34	0.34	0.51	0.45

Robust t statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 10. Financial Experts and Executive Compensation

OLS regressions with the following dependent variable: an indicator equal to 1 if the CEO receives any option grant in Column I; the natural logarithm of one plus the Black-Scholes value of option grants in Column II; the change in the natural logarithm of one plus total compensation in Column III; and the change in the natural logarithm of one plus cash compensation in Column IV. Compensation data is from the Hall-Liebman (1998) for 1988 to 1994 and from ExecuComp from 1995 forward. All regressions include a dummy variable which takes the value 1 in the Execucomp sample years. R is common stock returns over the fiscal year. Column I includes controls for Board Independence, Board Size, and their interactions with R_t and R_{t-1}, as well as controls for Firm Size, CEO Age, CEO Tenure, year fixed effects and firm fixed effects. Financial expertise variables are dummies which take the value 1 when a director of the type in question is present. Board Size is the natural logarithm of number of directors on the board. Board Independence is the ratio of outsiders to board size. Firm Size is the natural logarithm of assets at the beginning of the year. Columns III and IV also include the interactions of Board Independence and Board Size with R_t and R_{t-1}.

	(I)	(II)	(III)	(IV)
Dependent Variable	Any Options	ln(1+BSV)	Δln(1+Total Comp)	Δln(1+Cash Comp)
R_t	0.022	0.486	1.224	0.136
	(0.95)	(2.47)**	(1.50)	(0.50)
R_{t-1}	0.005	0.073	-0.454	-0.018
	(0.84)	(2.73)***	(0.65)	(0.07)
Finance Professors	0.081	0.432	0.026	0.116
	(1.86)*	(1.41)	(0.27)	(2.14)**
(Finance Professors)*R_{t-1}			-0.689	-0.380
			(1.95)*	(1.72)*
(Finance Professors)*R_t			0.056	-0.308
			(0.31)	(2.07)**
Fin Execs & Accountants	-0.010	-0.064	0.054	-0.033
	(0.45)	(0.42)	(0.76)	(0.99)
(Fin Execs & Accountants)*R_{t-1}			-0.078	0.016
			(0.49)	(0.20)
(Fin Execs & Accountants)*R_t			0.110	-0.033
			(0.61)	(0.44)
COMBANKER	0.034	0.199	0.035	0.033
	(0.94)	(0.76)	(0.42)	(1.22)
(COMBANKER)*R_{t-1}			0.094	0.033
			(0.34)	(0.38)
(COMBANKER)*R_t			0.080	-0.006
			(0.35)	(0.10)
IBANKER	0.029	0.12	-0.061	0.049
	(0.77)	(0.50)	(0.63)	(1.74)*
(IBANKER)*R_{t-1}			-0.229	-0.021
			(0.93)	(0.38)
(IBANKER)*R_t			0.113	-0.132
			(0.53)	(1.73)*
Execs of Non-bank Fin Cos	0.038	0.25	0.006	0.004
	(1.44)	(1.44)	(0.09)	(0.21)
(Execs of Non-bank Fin Cos)*R_{t-1}			-0.383	0.028
			(1.58)	(0.36)
(Execs of Non-bank Fin Cos)*R_t			0.109	0.017
			(0.73)	(0.25)
Additional Controls (see Caption)	yes	yes	yes	yes
Observations	2909	2909	2471	2487
R-squared	0.10	0.18	0.09	0.14

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