

# **The Benefits of Investment Banker Directorships**

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# **The Benefits of Investment Banker Directorships**

## **ABSTRACT**

We document that investment banker directorships are mutually beneficial to the investment bank and the firm. Investment bankers serve on boards of larger, higher growth firms. These firms benefit from lower gross spreads and smaller underpricing when issuing equity, and raise more external capital. The benefits are often larger when top-tier investment bankers serve as directors. Firms with investment bankers are also less financially constrained. This result is robust to controlling for self-selection. The affiliated investment bank benefits by underwriting a larger fraction of the firms' securities issues, but does not appear to extract monopoly rents in the form of higher fees. Our results are consistent with firms selecting specialist directors with complementary expertise that benefits both the firm and the investment bank.

## **The Benefits of Investment Banker Directorships**

Investment bankers have served on the boards of directors of several US corporations for over a hundred years. At the turn of the twentieth century, J. P. Morgan and other investment banks such as Kuhn Loeb, Goldman Sachs, and Lehman Brothers, had directorships in many firms that they underwrote (Ramirez (1995)). Annual surveys of corporate boards by Korn/Ferry International document that during the period 1985-1989, investment bankers served on the boards of about 23 percent of the firms (Directors and Boards, Spring 1990, pg. 56). In 1995, more than 18% of the firms had an investment banker on the board of directors. Despite their presence on boards in large numbers over a long span of time, there is little empirical evidence on the role of investment bankers as directors and how their continued presence on corporate boards benefits the firm and the investment bank. Our paper addresses this gap in the literature.

While it is conceivable that firms and investment banks benefited from relationships in the pre-Glass-Steagall era, as documented in Ramirez (1995), it is not clear whether they continue to benefit from directorships in the current environment of more disclosure and easier access to information. Ritter (2003) suggests that in recent times, underwriting activities have become more transaction oriented rather than relationship oriented. A firm in need of underwriting services can competitively select the best provider for each transaction, since several investment banks have similar underwriting capabilities and compete fiercely to obtain underwriting business. But, Crane and Eccles (1993, p. 132) state that investment banking relationships have become more important in the 1990s than before. They note that investment bankers view a relationship as 'strong' when they have regular access to the CFO and/or CEO of a firm, with whom there can be an exchange of information. A relationship at the board level facilitates the exchange of firm-specific information, allowing the investment bank to better structure deals and/or price securities. Hence, whether or not investment banker directorships continue to be beneficial is an empirical issue that we address in this paper.

In addition to underwriting securities issues, investment banks provide a variety of other services to the firm. They may provide advice about takeovers (Servaes and Zenner (1996)), provide earnings forecasts and stock recommendations (Michaely and Womack (1999)), make a market for the company's securities (Ellis, Michaely and O'Hara (2000)), etc. In our empirical work, we concentrate on the benefits of investment banker directorships related to securities issuances and underwriting activities. We also document the aggregate benefits to the firm using measures of financing constraints.

Many of the investment banking activities mentioned above are information intensive in nature. Typically, during the initial engagement with the firm, investment banks incur significant setup costs in acquiring firm-specific information. If the relationship at the board level implicitly guarantees the affiliated bank a large fraction of the firm's future business, the investment bank may be more inclined to invest in producing durable information that it can use over multiple transactions. The information that they gather, or have access to, may also assist them in providing services to other firms.

The firm can also benefit from board relationships with investment banks. An investment bank with access to more timely information and with incentives to produce more durable information can better certify offer prices in securities issues. If so, this improves the firm's access to external capital markets and *ceteris paribus*, the firm can raise more external capital and can sell securities at higher prices. Additionally, if the investment bank could amortize the fixed information costs over several transactions, they can charge a lower underwriting fee. On the other hand, the relationship can be costly, since the firm risks being informationally captured by the investment bank. The investment bank could use its information monopoly to extract rents in the form of high underwriting fees.

Prior literature (e.g., James (1992), Burch, Nanda and Warther (2004)) has focused on the benefits arising from prior underwriting relationships. An underwriting relationship develops when a firm continues to use the same investment bank in successive underwriting transactions. However, the interaction between a firm and its underwriter is limited to a short time period around the transactions and implicit guarantees to ensure future deal flow may not be tenable. In contrast, we focus on the potential benefits from board relationships. A relationship at the board level represents a continuous interaction and information exchange between the firm and the investment bank. Superior access to credible firm specific information, and the higher likelihood of receiving future underwriting business, makes it likely that the impact on fees is more significant when investment bankers serve on boards. In our empirical work, we document the effect of investment banker directorships on underwriting fees, after controlling for the existence of prior underwriting relationships.

We measure the overall impact of investment banker directorships by analyzing whether the firms that choose them to serve on their boards are less financially constrained. The investment banker director's access to information may allow the investment bank to better certify firm value. This enables the firm to access external markets more easily, and at a lower cost. Hence, the wedge between costs of external and internal funds would be lower, i.e., these firms will face fewer financing constraints.

We document the benefits of investment banker directors using a sample of 1440 firms, of which 257 firms had an investment banker on the board of directors in 1995. Like commercial bankers, investment bankers serve on the boards of larger firms. But, unlike commercial bankers who serve on the boards of more stable firms with lower market-to-book ratio (Kroszner and Strahan 2001), investment banker directors serve on the boards of firms with higher growth opportunities. Presumably, these firms are likely to raise more capital, more often, and hence stand to benefit from the capital markets expertise of investment banker directors. Also, unlike commercial banks, many investment banks have representatives on boards of firms spread out over several industries, which suggests that access to industry specific information may not be their motivation to serve on boards.

We find that for firms with investment banker directors, both the underwriting fees and underpricing of seasoned equity issues are significantly lower than for other firms that do not have an investment banker director. The average equity and debt offer size is also larger for these firms. In multivariate tests, the percentage gross spread in seasoned equity issues is significantly lower by 18 basis points for firms with investment banker directors. The reduction in gross spread is about 30 basis points if top-tier investment bankers serve as directors. The savings constitute about 5 to 10 percent of the average gross spread in equity issues. This result holds even after we control for the effect of prior underwriting relationships.

We also document that firms with investment banker directors are less financially constrained. Compared to other firms, we find that several measures of financing constraints used in prior literature are lower for firms with investment bankers on the board of directors. These firms are more likely to pay dividends, have a credit rating, and issue commercial paper. They also pay out a larger fraction of their earnings in the form of dividends and repurchases. Consistent with the predictions of Almeida, Campello and Weisbach (2004), we find that firms with investment banker directors do not systematically save a fraction of their operating cash flow to finance future expenditures. This evidence is consistent with our hypothesis that the presence of investment banker directors alleviates financing constraints and improves firms' access to capital markets.

We investigate whether the inferences from our analysis of financing constraints are affected by selection bias that arises if investment bankers selectively choose to serve on boards of firms that have lower financing constraints. We find that they are not. Even if investment bankers prefer to serve on boards of financially unconstrained firms, their selection is by no means guaranteed since the final choice of directors rests with the firm. We find that size-matched control firms without investment banker directors are also financially unconstrained.

This suggests that unconstrained firms may not select investment bankers to serve as directors, presumably because the benefits of investment banker directors are small for these firms. Even though self-selection seems unlikely, we address this issue in our empirical work. First, we use a two-step estimation procedure (similar to Heckman (1979)), where we include the Inverse Mills Ratio (computed from the first stage probit estimation of the determinants of investment banker directorships) as an additional explanatory variable in the second stage OLS regressions. Second, we align the sample observations in event time and investigate whether the constraints are mitigated after the investment banker joins the firm's board of directors. We find that our earlier result, that the presence of investment banker directors alleviates financing constraints, is robust to these alternative specifications.

Investment banks also gain from their board representation in the form of increased deal flow. Board affiliated top-tier investment banks lead underwrite about half the equity issues and a third of the debt issues for firms on which they have board representation. This is significantly higher than what they are able to get in other firms. The advantage is less significant for other investment banks. Since firms with investment banker directors also raise more equity from external capital markets, the affiliated investment banks benefit by receiving large deal flows.

Our paper contributes to the limited amount of literature on the advisory role of directors and the benefits that accrue to the director's employer. Our results are consistent with the view that investment banker directorships occur when it is mutually beneficial to the investment bank and the firm, i.e., when firms need the advice of investment banker directors and the investment banks can secure a large deal flow. Some financially constrained firms may benefit from having investment banker directors, but an investment bank may not be interested in directorships in these firms if the expected deal flow is small (e.g., small firms). Similarly, investment banks may desire directorships in some unconstrained firms, but these firms may not choose them if the benefit they expect to receive from the advice of investment banker director is low (e.g., large firms).

We organize the rest of the paper as follows. In Section 1 we discuss the prior literature and develop hypotheses linking the presence of investment banker directors to potential benefits and costs to the firm and the investment bank. Section 2 discusses our data and Section 3 presents the summary characteristics. Section 4 presents our main results on the magnitude and costs of raising external equity and financing constraints and Section 5 concludes the paper.

## 1. Prior literature and hypotheses

The board of directors has the responsibility to monitor all major managerial actions and provide valuable expert advice to management. Hence, choosing board members appropriately can enhance firm value.<sup>1</sup> Fama and Jensen (1983) state that boards could include outside directors with knowledge (e.g. expertise in capital markets, corporate law, etc.) that is complementary to that of inside board members. As experts in their fields, it is expected that these outside directors will play an advisory role and guide the firm's top management in areas such as adopting or changing strategic plans, reviewing and/or approving the firm's financial objectives, resource allocation, etc. (Monks and Minow (1995, pg. 183)).<sup>2</sup> Thus, a firm in need of capital markets expertise may include specialist financial directors such as commercial and investment bankers on the board. Consistently, financial directors are not classified as independent directors in the literature (e.g. Rosenstein and Wyatt (1997)), suggesting that their primary role may not be to monitor management. In the following sections, we draw upon prior literature that investigates the role of financial directors and develop our hypotheses.

### 1.1 Related literature

#### 1.1.1 Commercial banker directorships

Prior research on financial directors focuses primarily on the role of commercial banker directors. Kroszner and Strahan (2001) find that bank executives do not sit on boards to monitor lending relationships due to concerns about lender liability. Instances where the affiliated bank is also the main lender to the firm comprise only 18% of their sample. They also show that the affiliated banks have significant exposure to other firms in the same industry, suggesting that the banks gain industry-specific knowledge from their directorships.<sup>3</sup> Booth and Deli (1999) also conclude that bank executives do not sit on boards to monitor lending relationships. Kracaw and Zenner (1998) show that the abnormal return around loan announcements is significantly negative when a firm has a commercial banker director, suggesting that firms may not benefit from the monitoring and information transfer resulting

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<sup>1</sup> For example, extant literature investigates the effectiveness of outsider-dominated boards in monitoring management (Weisbach (1988), Cotter, Shivdasani and Zenner (1997), among many others)

<sup>2</sup> In a field study, Mace (1971) interviewed directors and executives and concluded that the board both provides advice to top management and monitors them. An article for the executive search firm Korn/Ferry International by King and Nahas states "... a board of directors is the best bargain in modern business because it represents a cadre of expert consultants to management ...".

<sup>3</sup> We find few instances (about 2%) where an investment bank both has a significant stake and is represented on the board of a firm. Thus, the concerns of commercial banker directors about lender liability and monitoring of management are likely to be of low relevance for investment banker directors.

from bank directorships. In contrast, we focus on the benefits to the firm from the advisory role of investment banker directors.

### *1.1.2 Underwriting Relationships*

An investment bank can also establish a relationship with a firm due to its underwriting activities. Underwriting relationships develop when the firm continues to use the same investment bank to underwrite its equity issues. During the securities issuance process, the underwriter obtains durable information about the issuing firm that could be useful in subsequent underwriting transactions (Boot (2000), James (1992)). The underwriter can amortize the fixed costs of producing durable information over subsequent transactions. Consistent with the notion that relationships with underwriters lowers information production costs, a majority of firms do not switch underwriters for subsequent securities issues (e.g., Krigman, Shaw and Womack (2001), Ellis, Michaely, and O'Hara (2004), Fernando, Gatchev and Spindt (2004)). As a condition of establishing a relationship, the investment bank and the firm would have to implicitly agree that the firm will not switch underwriters subsequently. But, it is not clear how such an implicit contract is enforced in such a relationship. Such implicit contracts are more likely tenable when the investment banker serves on the board, and this forms the main focus of our paper. Further more, a relationship at the board level may enhance the investment bank's credibility in certifying value. Thus, the potential benefits of board relationships are likely to be significantly higher than the benefits due to just underwriting relationships alone.

## *1.2 Investment banker directorships*

### *1.2.1 Benefits to the firm*

Affiliated investment banks have access to better quality and more timely information due to their board membership. Board membership is expected to span multiple time periods and allows the affiliated investment banks access to information on a continuing basis. The firm may also be more inclined to reveal sensitive information to the affiliated investment bank, rather than revealing it publicly. Investment banker directors with potential access to information can thus gather firm-specific information at a lower cost and better certify value. The benefits of any information transfer that is facilitated via a board relationship would be apparent in several aspects of a firm's capital market activities.<sup>4</sup> When these firms need to fund

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<sup>4</sup> We focus on a limited set of a firm's capital market activities – raising external capital. Investment banker directors may also provide assistance in other activities such as corporate restructuring.

their investments, they can more easily access external capital markets, rather than having to rely primarily on internally generated funds. Furthermore, the lower information asymmetry and/or more credible certification allows the firm to price equity issues closer to the prevailing market price. Corwin (2003) finds that the degree of underpricing for seasoned equity offers is positively related to uncertainty about firm value. In a similar vein, Schenone (2004) documents that IPO underpricing is lower when the firm has a pre-IPO banking relationship with a prospective underwriter. If affiliated investment banks can better certify firm value, the underpricing would be smaller. In particular, since equity issues are more subject to the information asymmetry problem than debt issues, we expect these benefits to apply more for external equity financing.

As stated earlier, firms could also develop relationships with investment banks due to activities requiring underwriting services. The existing literature documents that firms with underwriting relationships pay lower fees (Ellis, Michaely, and O'Hara (2004), Calomiris (1993), Burch, Nanda and Warther (2004)). Since a board relationship indicates a closer link between the firm and the investment bank than an underwriting relationship, the investment bank is more likely to receive future business as a result of having board representation. We expect that the higher certainty of securing future business would better enable the investment bank to lower fees by spreading out the fixed costs of producing durable information. We estimate the effect of board relationships on fees after controlling for prior underwriting relationships.

But relationship investment banking may also have its costs. Including investment bankers on the board of directors could detrimentally lock the firm into utilizing the services of these directors' firms, rather than competitively determining the best provider of these services. Relatedly, in the presence of high setup costs, a close relationship may give the investment bank an information monopoly, and allow it to charge higher rates (as in Rajan (1992)). Whether or not investment banker directorships lower underwriting fees is thus an empirical issue.

We then analyze whether the presence of investment banker directors eases firms' financing constraints. A financially constrained firm faces a wedge between the costs of internal versus external funds (Kaplan and Zingales (1997)). The higher costs of external funds may arise due to moral hazard (as in Jensen and Meckling (1976)) or adverse selection problems (as in Myers and Majluf (1984)). Faced with higher costs of external funds, constrained firms prefer to use internally generated cash flow to fund investments.

While the above definition of financing constraints is not controversial, there is considerable debate in the current literature on how best to empirically measure the existence and impact of financial constraints. Fazzari, Hubbard and Petersen (1988) suggest that

constrained firms will tend to primarily finance their capital expenditures using internally generated funds, leading to a high correlation between capital expenditures and cash flow. Unconstrained firms will have relatively easier access to capital markets, and hence need not rely as much on internal funds. Kaplan and Zingales (1997) contend that the cash flow sensitivity of investment is not a valid measure of financing constraints. They argue that since cash flow may proxy for investment opportunities not captured by Tobin's Q for certain types of firms, it may appear as though investment cash-flow sensitivity is higher for these firms, whether or not these firms are financially constrained. Almeida, Campello and Weisbach (2004) model a firm's demand for liquidity and suggest that constrained firms will systematically conserve cash out of its current cash flow. An unconstrained firm, on the other hand, can access external markets to raise capital and would not need to conserve cash out of its cash flow on a regular basis.

We test whether investment banker directors lower financing constraints using measures that have been used in the prior literature. The univariate measures we use to classify firms as unconstrained are: if they (a) payout cash-flow (Fazzari et. al. (1988)), (b) are large (Gilchrist and Himmelberg (1995)), (c) have a bond rating (Gilchrist and Himmelberg (1995)), (d) have a commercial paper rating (Calomiris, Himmelberg and Wachtel (1995)), or (e) rank low on the KZ Index (Lamont, Polk, and Saa-Requejo (2001)). We also use the Almeida, Campello and Weisbach (2004) model of a firm's demand for liquidity, which predicts that constrained firms will save cash from their cash flows, while unconstrained firms will not.

### *1.2.2. Benefits to the affiliated investment bank*

Investment banks may pursue several strategies to ensure continuing deal flow. One strategy is to obtain board membership, which could signal to other investment banks that the affiliated investment bank has a lock on the firm's business, and dissuade them from competing for the firm's business. In interviews, Mace (1971) finds similar statements made by executives. The President of one company stated "... Having a senior partner of an investment-banking firm on our board is notice to the world that we are his captive client. .... They (the investment bankers) think of board memberships as a very good way of assuring that the business of the company goes only to them." Additionally, the model in James (1992) suggests that an investment bank might agree to lower the underwriting fees only if it can expect to earn some rents on subsequent securities issues. Thus, affiliated investment banks can implicitly agree to charge lower fees both for current and repeat business, if it is reasonably assured of getting adequate deal flow over which it can amortize its fixed costs.

Firms may also find it beneficial to continue choosing the affiliated investment bank for a large part of its external market transactions, if the affiliated investment bank charges a lower underwriting fee. Affiliated investment banks are thus more likely to obtain the firms' capital markets related business. This is attractive to affiliated investment banks if firms issue large amounts of equity, more often.

Related to our study, DeLong (1995) shows that during the early 20<sup>th</sup> century, the presence of directors affiliated with J.P. Morgan increased firm value. Ramirez (1995) shows that these firms also had lower sensitivity of investments to cash flow. He documents that a Morgan affiliation usually resulted in the presence of a Morgan employee on the board of directors, and concludes that this affiliation lowered financing constraints for the firms. But, several recent papers show that inferring financing constraints from the sensitivity of investments to cash flows is problematic. We employ multiple measures of financing constraints, including a more recently developed empirical methodology (Almeida, Campello and Weisbach (2004)) that circumvents the problems associated with the investment cash-flow sensitivity measure. Furthermore, since capital markets have developed significantly from the early 1900s, our work allows us to test whether the evidence documented for firms during the early 1900s obtains in a more contemporaneous time period. We also utilize a large cross-section of firms that includes investment banker directors who are associated with a wide variety of investment banks, not just J.P.Morgan. This allows us to investigate whether the benefits and costs are different for top-tier versus other investment banker directors.

## **2. Data**

Our initial sample includes all US firms on COMPUSTAT with at least \$100 million in total assets as of fiscal-year end 1994. We focus on one year to economize on data collection, since the director characteristics need to be hand collected from proxy data. From this we delete regulated firms (two-digit SICs 48, 49, 60-69) and firms for which we could not identify the primary occupation of all the directors using proxy statements from July 1994 to June 1995.

We match the identity of the affiliated investment bank, as stated in the proxy statements, with Thomson Financial's SDC new issues database. We classify a director as an investment banker if the investment bank is identified in the SDC new issues database as a lead underwriter during the period 1992-1995. We do not classify directors affiliated with boutique investment banks, self-employed investment bankers and retired investment bankers as investment banker directors. This is appropriate since we expect the affiliated investment bankers to lower transactions costs through better certification and reduce financing constraints

by facilitating access to capital markets, benefits that may be best served by investment bankers whose employers are active in capital raising.<sup>5</sup> We exclude 38 firms that could not be clearly classified as either having an investment banker director or not. These firms had an investment banker director where the investment bank (a) was involved in lead underwriting, but not during the time period of interest in our study, 1992-1995, and/or (b) was a merger advisor during 1992-1995 but did not lead underwrite equity issues during this period. This leaves us with a final sample of 1440 firms that we use in this study. Nearly 18% of the firms in our sample (257 out of 1440) have at least one investment banker on its board of directors. Unlike commercial banks, affiliated investment banks generally do not hold significant financial stakes in the firms in which they hold directorships. We only find five instances where an investment bank has a directorship and owns five-percent or more of the same firm's shares.

We also obtain data on board size, directors' professional affiliation and their board tenure from the proxy statements. All data on security issues and fees are from SDC, analyst following data from IBES, financial data is from COMPUSTAT, and stock return data is from CRSP. The Spectrum 13f filings reported in August 1995 Compact Disclosure is used to obtain institutional ownership. The investment bank reputation measure is from Jay Ritter's website.<sup>6</sup>

### **3. Director and firm characteristics**

Our sample consists of 280 investment banker directorships in 257 firms representing seventy-five different investment banks (Table 1).<sup>7</sup> The directors are usually CEOs, vice-presidents, managing directors or other senior level managers at their investment bank. There are 11 top-tier investment banks (investment bank ranking of 9) whose employees are represented on the boards of 110 firms. As of 1995, these top-tier investment banker directors have been serving on the board of directors for an average (median) of 7.7 years (5 years). There are 64 other investment banks whose employees serve as directors in 147 firms. Their average (median) tenure is 9.6 years (7 years), suggesting that investment banker directorships are long, continuing relationships between investment banks and firms rather than short-term transaction-based arrangements. The directorships are not concentrated among a few investment banks. We compute a Herfindahl-type concentration index by summing the squares of the fraction of investment banker directorships held by employees of each individual

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<sup>5</sup> We also do not classify directors as investment bankers if their primary affiliation is with the parent of an investment bank. For example, we do not classify directors employed by Travelers Corp. as investment bankers, even though it owned Shearson Lehman (later called Smith Barney Shearson).

<sup>6</sup> <http://bear.cba.ufl.edu/ritter/rank.htm>

<sup>7</sup> In instances where more than one director from the same investment bank serves on the firm's board, we count them as one directorship.

investment bank, and find that it averages 0.0367 for the full sample. If each of the 75 investment banks held the same fraction of directorships this index should average 0.0133. Seventeen different investment banks each have directorships in five or more firms. Each investment bank's directorships do not seem to be concentrated in any particular industry, suggesting that access to industry specific information may not be an important motive.

In Panel A of Table 2, we report the financial characteristics of firms with and without investment banker directors. All financial ratios are winsorized at the 1 and 99 percentile levels. Investment bankers serve on the boards of larger, higher growth firms. The average total assets for firms with an investment banker director are \$3.9 billion, which is significantly higher than the \$1.8 billion for firms without investment banker directors. Top-tier investment bankers serve on even larger firms with average total assets of \$6.4 billion. However, the medians are much smaller suggesting that investment bankers serve on the boards of both large and some relatively smaller firms. These firms also have higher growth opportunities since they have significantly lower book to market ratio of equity (mean 0.48 versus 0.55). Firms with top-tier investment banker directors hold smaller cash balances (9.5%) as compared to the average cash balance of 13.4% for firms without investment banker directors. The other financial variables such as profitability, leverage, and capital expenditures are not significantly different between firms with and without investment banker directors.

Firms with investment banker directors do not have weaker governance structures in place as compared to firms that do not have investment banker directors (Panel B). The average institutional ownership is 51.2%, whereas it is significantly lower at 47.8% for the other firms. The median institutional ownership displays a similar pattern (54.9% versus 48.9%). They also have significantly higher analyst following (average 6.44 analysts versus 5.83 analysts for the other firms). The fraction of independent outside directors on the board is similar across all subsets of firms. Taken together, this suggests that monitoring by institutional investors, stock analysts or independent outside directors, may not be lower in these firms. Interestingly, the median board size of firms with investment banker directors is larger by exactly one member than other firms. If investment bankers primarily perform an advisory function on the board, firms may increase their board size to accommodate them. The board size result is very similar to the findings of Agrawal and Knoeber (2001) about political directors.

In Table 3, we present the results of logistic regressions where the dependent variable takes the value '1' for firms with investment banker directors and '0' otherwise (models 1-3). We include firm size as an independent variable since investment bankers may be more willing to serve on boards of larger firms with potentially larger deal flow. We include book to market ratio

since high-growth firms are more likely to access external markets. We include other measures such as industry return and average firm deficit as additional measures of firm's likelihood to raise external capital. We also include number of analysts and the likelihood of survival as control variables, since Fernando, Gatchev, and Spindt (2004) use these variables as indicators of an underwriter's motivation to underwrite a firm's issue. The only variables that are statistically significant in all the regressions are firm size and the book-to-market-ratio. Consistent with our univariate results in Table 2, investment banker directors are more likely to serve on boards of larger, higher growth firms. This result is unchanged if we use an ordered logistic approach to estimate the model, ordered as follows: top-tier investment banker director, other (not top-tier) investment banker director and no investment banker director. In models 4-6, we find that the coefficient on firm size remains significantly positive and that on the book-to-market ratio remains significantly negative.

#### **4. Results**

We report our results pertaining to capital market activities in this section. Our findings suggest that the presence of an affiliated investment banker director allows the firm to raise more capital and at a lower cost. Their presence also alleviates other measures of financing constraints. We find that board representation enables the affiliated investment bank to capture a larger fraction of the underwriting business of the firm.

##### *4.1 Capital market activities, underpricing and underwriting fees*

###### *4.1.1 Univariate results*

Since our hand-collected director data is for the year 1995, we use public issues of seasoned equity and debt during the seven-year period centered around 1995 from Thomson Financial's SDC new issues database. We use this extended period since not all firms issue securities every year and directorships are relatively stable. Consistent with the discussion in Section 1.2, we find that firms with investment banker directors raise more external funds, and are able to do so at a lower cost. In Panel A of Table 4, we report that firms with investment banker directors make larger equity issues. The average gross proceeds for equity issues made by these firms is about \$181 million, which is significantly larger, at the one-percent level, than that for the other firms (\$109 million). A similar trend is apparent in the median gross proceeds also (\$122 million versus \$65 million). They select more reputed investment banks to underwrite these issues. The average underwriter ranking is 8.65, which is significantly higher than the average ranking of 8.38 for the other firms. The average dollar gross spread is higher

for the equity issues made by firms with investment banker directors (\$6.1 million versus \$4.1 million). However, the percentage gross spread averages 4.31 percent for equity issues made by these firms, which is significantly lower than the average gross spread of 4.76 percent for equity issues made by the other firms. The median gross spread also exhibits a similar trend. This is consistent with our hypothesis, which posits a lower spread for equity issues made by firms with investment banker directors.<sup>8</sup> All these differences are larger and statistically significant when we compare firms with top-tier investment banker directors and other firms. For example, the average equity issue raises \$227 million, and the average percentage spread is 3.95 percent.

If a board directorship allows the investment bank to more credibly certify value, seasoned equity offers by these firms would be priced at a smaller discount to the prevailing market price. Consistent with this expectation, we document that equity issues made by firms with investment banker directors are priced closer to the previous day's closing market price. The mean close to offer returns is -1.55 percent, which is significantly different from the return of -2.39 percent for seasoned equity issues made by firms without investment banker directors. We find a similar difference in the medians (-0.92 percent versus -1.64 percent). The underpricing is lower in magnitude when a top-tier investment banker serves as a director. Our inferences are similar when we estimate the return from the offer price to the closing price on the offer date. Both the average and median returns are significantly more positive for firms without investment banker directors.

The benefits of information exchange facilitated by a relationship at the board level should be less important for debt issues. Independent debt rating agencies are an alternative source that can credibly certify debt issues. Therefore, we expect smaller or insignificant differences in debt issue characteristics between firms with and without investment banker directors. In Panel B, we report the statistics for debt issues. On average, firms with investment banker directors make slightly larger issues than other firms (\$189 million versus \$161 million). The average maturity is about 13 years and is similar across both sets of firms. The percentage gross spread is smaller by an average of 18 basis points (median is 10 basis points) when the issuing firm has investment banker directors. The percentage gross spread is lower by 22 basis points for firms with top-tier investment banker directors. The average issue size and debt maturity for firms with top-tier investment banker directors is similar to that of other firms (\$170 million, about 12 years).

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<sup>8</sup> Since this is also consistent with economies of scale in seasoned equity issues, we present the results of multivariate tests later in the paper.

The evidence of lower spreads for both equity and debt issues and smaller underpricing is consistent with investment banker directors being able to reduce the costs of raising external capital. Since these results could be driven by factors such as firm and/or issue size, we explore the robustness of this finding in a multivariate framework. Our multivariate framework on seasoned equity underpricing is similar to Corwin (2003). He finds that issues of seasoned equity are underpriced. The underpricing is related to measures of uncertainty about firm value and temporary price pressure. Our analysis of underwriting fees utilizes the models from prior literature that suggest the existence of economies of scale ((e.g. Bhagat and Frost (1986)) and the model predicting U-shaped spreads by Altinkilic and Hansen (2000). We discuss the results from these models below.

#### *4.1.2 Multivariate results*

##### *Underpricing*

We examine whether the magnitude of underpricing (or discount) in seasoned equity offers is smaller for firms with investment banker directors using a multivariate regression framework, after including several control variables that have been suggested in the prior literature. Our main explanatory variables of interest are three dummy variables that take the value '1' for firms that have an investment banker director, or a top-tier investment banker director, or if the affiliated investment bank also underwrote the seasoned equity offer, and '0' otherwise. We expect the return from closing price on the day prior to the offer date to the offer price to be less negative (return from offer price to closing price on offer date to be less positive) for these firms.

We draw upon the prior literature to identify control variables that affect underpricing. Several models (e.g., Rock (1986), Benveniste and Spindt (1989)) suggest that IPO underpricing is positively related to the degree of uncertainty about firm value. Although the degree of uncertainty may be lower for firms making seasoned equity issues, it still exists (Corwin (2003)). We include the standard deviation of returns calculated using daily returns over the 250 days prior to the offer date as a control variable. We expect it to be negatively (positively) related to the previous day's close to offer returns (offer to offer day close returns), i.e. higher underpricing for firms with higher degree of uncertainty. Prior literature (e.g., Scholes (1972)) documents evidence consistent with the existence of downward sloping demand curves for stocks. If so, investors would require compensation for absorbing this liquidity shock caused by a sudden increase in the company's float. In either case, this suggests that larger issues would be more underpriced. We include relative offer size (gross proceeds scaled by market

capitalization) as another control variable. The underwriter may also set the offer price by rounding down the previous day's closing price to the nearest even tick (Corwin (2003)). The effect of this rounding down would be more severe for firms with lower prices. We expect a positive coefficient if the close to offer returns is more negative for firms with smaller prices. Since our results may be driven by firm size, we include firm size (natural logarithm of market capitalization) as a control variable.

The results in Table 5 support our hypothesis. The dependent variable in models 1 to 3 is the return from the closing price on the date prior to the offer date to the offer price. In model 1, the coefficient on the investment banker director dummy variable is 0.006 and is significantly positive at the ten-percent level, suggesting that the underpricing is smaller (less negative return) for these firms. The coefficient on log of price is positive and significant at the one-percent level, consistent with the underwriters rounding down the offer price to the nearest even tick. The coefficients on the relative offer size and standard deviation of returns are both negative as predicted, but are not statistically significant at conventional levels. Model 2 substitutes the top-tier investment banker director dummy variable (in place of the investment banker director dummy variable) as the primary explanatory variable of interest. Our results are similar, since the coefficient on the dummy variable is positive and significant at the ten-percent level. When we use the affiliated investment banker as underwriter dummy variable, the coefficient on the dummy variable is positive, but statistically insignificant. Models 4-6 replicate models 1-3, but use the return from the offer price to the closing price on the offer date as the measure of underpricing. The results are similar, the return is significantly smaller (less positive) for firms with investment bankers or with top-tier investment bankers. The coefficients on these two dummy variables are significant at the five-percent level.

### *Underwriting fees*

Table 6 presents the results of regressions investigating whether underwriting spreads are lower for securities issues made by firms with investment banker directors. The results from models 1-4, Panel A, indicate that controlling only for gross proceeds, the presence of an investment banker director does not reduce the spread significantly. However, the presence of a top-tier investment banker director leads to a significant reduction of 16 basis points in the spread. If the affiliated investment bank also serves as the lead underwriter for the equity issue, the spread is reduced by 19 basis points (28 basis points for top-tier affiliated investment bank). In Panel B (models 1-4), we include the inverse of proceeds, proceeds as a fraction of market capitalization, prior capital market activity and the standard deviation of returns as control

variables (as in Altinkilic and Hansen (2000)). The sign and magnitude of these coefficients are similar to those in Altinkilic and Hansen (2000), except that the coefficient on prior market activity is not statistically significant in our tests. The coefficient on the dummy variable indicating the presence of an investment banker director is  $-0.186$ , and is significant at the one-percent level. Hence, the gross spread in seasoned equity issues is lower by about 19 basis points when a firm has an investment banker director. If the director's investment bank also underwrites the issue, the reduction in the gross spread is 23 basis points. The corresponding savings when a top-tier investment banker is present are 31 and 32 basis points respectively.

While this evidence is suggestive, it is possible that they are driven by prior underwriting relationships, rather than directorial affiliations. Specifically, some firms may choose their relationship underwriters to serve as directors on their board, even if they are not of any additional benefit to the firm. In models 5-8 in Panels A and B, we include a dummy variable that takes the value '1' if the lead underwriter for the current SEO was also the lead underwriter for the immediately preceding SEO (within the previous five years), and '0' otherwise. Our inferences are unchanged, the magnitude and significance levels on the four underwriter dummy variables are similar to those in models 1-4. The estimated savings from prior underwriting relationships is 5 to 7 basis points (not statistically significant), which is similar in magnitude to the increased cost from switching underwriters documented in Ellis, Michaely, and O'Hara (Table 6, 2004). Consistent with the expectation that the benefits are more likely to be observed for equity issues, we find in unreported tests that for debt issues, controlling for debt rating, the coefficients on the presence of an investment banker director are not statistically significant.

To summarize, these results corroborate the univariate results from Table 4 and confirm that the presence of an investment banker director enables the firm to access external capital markets and raise capital to a larger extent, at a smaller discount to the prevailing market price, and with lower underwriting fees.<sup>9</sup> These effects are stronger for equity issues rather than debt issues, consistent with information asymmetry being more of an issue for equity rather than debt issues. These results should be interpreted cautiously, since it is possible that affiliated investment banks are able to capture some monopolistic rents from their board presence. The true cost savings of producing and processing information that accrues from board affiliation is unobservable. If the investment bank shares only a part of the cost savings with the firm, it may still earn monopoly rents. In any case, the firm gains from board relationships, since controlling

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<sup>9</sup> Interestingly, Altinkilic and Hansen (2000) estimate fixed underwriting costs to be about 35 basis points, which is close to the estimated savings that we document.

for other factors, we find that the underwriting spread is significantly lower. We next analyze whether the presence of an investment banker director mitigates financing constraints.

## *4.2 Financing constraints*

### *4.2.1 Univariate results*

The results documented thus far suggest that the presence of investment banker directors lowers firms' costs of external financing. Consequently, we expect that these firms should face fewer financing constraints. Consistent with this observation, the univariate statistics in Table 7 indicate that firms with investment banker directors may be less financially constrained. They are more likely to pay dividends and pay a larger fraction of their earnings as dividends and repurchases. For example, almost 60 percent of firms with investment banker directors pay dividends, but only 51 percent of firms without investment bankers do. They are also more likely to have a commercial paper and bond rating. These are the same characteristics that prior research has used to classify firms as unconstrained. But, the KZ index measure is not statistically different between firms with and without investment banker directors.<sup>10</sup> To investigate whether these univariate differences in the measures of financing constraints are an artifact of firm size, we select a control firm that is closest on the basis of total assets, but is larger. Compared to size matched controls, firms with investment banker directors are more likely to pay dividends, have a larger payout ratio and have a lower KZ index measure. But, the proportion of firms with commercial paper and bond ratings is not significantly different across these two sets of firms.

We define an index incorporating five of these univariate measures of financing constraints as follows. We create five binary variables that each take the value of '1' if the firm pays dividends, has a bond rating, has a commercial paper rating, acquires another firm, and repurchases or not, and take the value '0' otherwise. Thus, the aggregate index takes a value between 0 and 5. The average value for firms with investment banker directors is 2.46, which is significantly higher than the average of 2.14 for the other firms (t-value of 3.36). The average for firms with top tier investment banker directors is even higher at 2.59. A similar pattern is evident when we examine the medians also. This suggests that firms with investment banker directors are less constrained than firms without them. However, we find that the average value of the aggregate index is 2.32 for the size-matched control firms, and this is not significantly

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<sup>10</sup> As in Lamont et.al (2001) and Almeida et al. (2004), we compute KZ index as  $-1.002 \times \text{Cash-Flow} + 0.283 \times Q + 3.139 \times \text{Leverage} - 39.368 \times \text{Dividends} - 1.315 \times \text{Cash Holdings}$ . An earlier version of Almeida et al. (2004) estimates the index as  $-.126961 \times \text{Cash Flow} + 0.2643228 \times Q + 3.4080773 \times \text{Leverage} - 5.78327 \times \text{Dividends}$ . This measure is significantly smaller for firms with investment banker directors.

different from that for firms with investment banker directors. This suggests that otherwise unconstrained firms may not select investment bankers as directors.

As a further check, we analyze whether financing constraints are relaxed after the investment banker joins the board. Using 116 firms that have investment banker directors with non-missing data for years  $-1$  through year  $+1$ , we test whether financing constraints are lowered following the appointment of investment banker directors (year 0). Each firm appears only once since we only include the first appointment of an investment banker. This specification assumes that the firm did not have an investment banker representative on the board before the appointment of the current investment banker director. For example, the current investment banker director could have replaced another incumbent investment banker director. In this case, contrary to our expectation, there would not be any change in the degree of financing constraints before and after, and hence would bias against us finding any results. We expect financially constrained firms to select investment bankers as directors, and that these constraints are mitigated after they join the board. However, we caution that even analyzing whether financing constraints change from before to after the investment bankers join the board may not be conclusive. It is conceivable that investment bankers would choose to join the boards of those firms where they expect the financing constraints to be lower in the future and are unlikely to be the source of lower financial constraints for the firm.

We align the sample observations in event time and create an aggregate index of changes in the univariate measures of financing constraints from before to after the appointment of these directors (year  $-1$  to year  $+1$ ). Similar to the index measures defined earlier, we create five binary variables based upon *changes* in either the dividend policy, existence of a bond rating, commercial paper rating, acquisition activity or repurchases. Each of the five variables takes the value '1' if the variable indicates lowered constraints, '0' for no change and '-1' if it indicates increased constraints. If the firm initiated dividends after the director's appointment, then the value would be '1'. Similarly, if the firm had a bond rating both before and after the appointment year, then it would take the value '0'. If the firm repurchased more equity in the year before the appointment than in year  $+1$ , it would take the value '-1'. Thus, the index can take values between  $-5$  to  $+5$ . If there is no change (lower) in financing constraints, this index value should be zero (positive). The average value of this index is 0.284, and this is significantly different from zero at the five-percent level. We replaced the dividend initiation or omission dummy variable by another variable that takes the value '1', '0' or '-1' corresponding to whether the firm increased, maintained or decreased its dividend payout ratio. The results are stronger; the mean change is 0.362 and is statistically significant at the one-percent level. In contrast, we do not

find any significant changes for the size-matched control firms. This indicates that compared to year  $-1$ , financing constraints are lowered in the year after the appointment of investment banker directors.

#### *4.2.2 Multivariate results*

As discussed earlier in Section 1.2, current literature is divided on how best to infer financing constraints. Since many papers challenge the validity of using the cash-flow sensitivity of investment to infer financing constraints (as in Fazzari, Hubbard and Petersen (1988)), we base our multivariate analysis on the methodology developed by Almeida et al. (2004).

We report the results of regressions using the Almeida et al. (2004) methodology where the dependent variable is annual change in cash holdings, deflated by total assets. Our main explanatory variable of interest is cash flow (deflated by total assets). The expectation is that financially constrained firms would systematically build financial slack by saving a fraction of their current cash flow, leading to a positive regression coefficient on the cash flow variable. In contrast, unconstrained firms need not systematically save out of their current cash flow and their cash policy would be indeterminate. Thus, we would not expect to find a statistically significant coefficient on the cash flow variable for a set of unconstrained firms.

We include capital expenditures, acquisitions, change in working capital, and change in short term debt as additional control variables (deflated by total assets). These variables are designed to control for sources and competing uses of cash. Since a firm's desire to conserve cash would also be affected by the profitability of its investment opportunities, we include Tobin's  $Q$  (measured as the ratio of market value to book value of total assets) as an explanatory variable in our regressions. We also include firm size (the natural logarithm of total assets) as a control variable. This specification closely follows that in Almeida et al. (2004).

We report the results of this regression for several different sub-samples in Table 8. First, for firms without an investment banker director, we find that the coefficient on the cash flow variable is 0.239, and it is statistically significant at the one-percent level (model 1). This is consistent with the hypothesis that these firms are financially constrained. The coefficients on capital expenditures, acquisitions and net working capital are negative as would be expected, but are not statistically significant at conventional levels of significance. Importantly, consistent with our hypothesis, the coefficient on the cash flow variable is not statistically significant for firms with investment banker directors (model 2). This is as expected, since these firms are not expected to systematically save a fraction of their current cash flow. Similar results hold when

we analyze only those firms that have directors affiliated with the top-tier investment banks (model 3).

We also run the same regression for the size-matched control firms (model 4). We find that the coefficient on the cash flow variable for these firms is also statistically insignificant for these firms. This suggests that some firms without investment banker directors are also unconstrained. Thus, investment bankers do not self-select and sit on the boards of all unconstrained firms. Self-selection is unlikely to drive our results since the firm's management chooses these specialist directors, presumably for their capital market expertise. It seems improbable that they would select investment banker directors when their services are less valuable, since these firms face fewer financing constraints and can choose the best provider of underwriting services competitively.

#### *4.2.3 Self-selection of investment banker directors*

Even though this self-selection seems unlikely, we address this potential endogeneity in two different ways. First, we use a two-stage Heckman (1979) type procedure to control for the potential self-selection problem. Specifically, we estimate a first stage probit model, where the dependent variable is a dummy variable that takes the value '1' for firms with an investment banker director and '0' otherwise. Similar to Table 3, the explanatory variables include firm size, the average book to market ratio of equity, average deficit in the prior three years and the equally weighted buy and hold return during 1993-95 for firms in the same industry (two-digit SIC). We include the Inverse Mills Ratio estimated from this first stage probit regression as an additional explanatory variable to the regression model 2 in Table 8. Our main result (model 6 in Table 8) is unchanged. Specifically, the coefficient on the cash flow variable is not statistically significant for firms that have investment banker directors. As an additional check, we run the first stage probit model estimating the likelihood of *not* having an investment banker director. In the second stage regression, we include the Inverse Mills Ratio from this probit model to the other explanatory variables in model 1. The results in model 5 are unchanged since the coefficient on cash flow remains significantly positive, suggesting that firms without investment banker directors are financially constrained.

As an alternative technique to address potential self-selection issues, we show in Table 9 that the sensitivity of changes in cash to cash flow is significantly positive before the investment banker joins the board, and is insignificant after. We estimate annual regressions for the three-year period  $-1$  to  $+1$ . The tests indicate that the cash-flow sensitivity of cash is about 0.23 (significant at the ten-percent level) in the year before the appointment of the investment

banker director. The magnitude of the coefficient is similar to that for constrained firms in Table 8 (0.24 in model 1). In years 0 and 1, the coefficient on the cash flow variable is not significant as would be expected if the appointment of investment banker directors relaxes financing constraints for these firms.

Our results thus far suggest that the presence of an investment banker director mitigates financing constraints. These firms are less likely to systematically set aside a part of their cash flow to finance future expenditures. We address concerns about self-selection in two different ways – using a Heckman type two-stage estimation process, and estimating the financing constraints models before and after an investment banker joins the board. We find that our findings are unchanged.

#### *4.3 Do affiliated investment banks gain?*

The discussion in Section 1.2 suggests that investment banks will be better positioned to lead underwrite equity issues of affiliated firms. Consistently, we find that investment banks gain a larger fraction of the underwriting business of affiliated firms than what they are able to get in other firms. Together with the earlier result that firms with investment banker directors also issue more equity, board memberships assist the investment banks in receiving a large amount of deal flow. We find that these benefits are larger for top-tier investment banks.

In Panel A of Table 10, we compare the fraction of equity issues where the investment bank is the lead underwriter for affiliated firms where they have board representation and for other, unaffiliated firms.<sup>11</sup> Specifically, for each investment bank, we compute the average fraction of seasoned equity issues that they underwrite in affiliated firms and in other, unaffiliated firms. To abstract from the impact of mergers between investment banks, we consider all merged entities as a single investment bank. To ensure that the comparisons are appropriate, we only include issues made by the 1440 sample firms that are underwritten by one of the 75 investment banks that have any board affiliation among our sample firms. This restriction reduces the sample from 939 equity issues and 1829 debt issues to 799 equity issues and 1709 debt issues. Since we do not find any seasoned equity issues made by firms in which 37 investment banks serve as directors, we cannot compute the fraction of issues these investment banks lead underwrote among affiliated firms. Our analysis thus includes 38 investment banks, of which ten are classified as top-tier. On average, affiliated investment banks lead-underwrite

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<sup>11</sup> The sum of the fraction underwritten in affiliated firms and the fraction underwritten in unaffiliated firms by all the underwriters does not sum up to 100% because the numbers are calculated at the investment bank level, and an investment bank's potential opportunity set includes firms with other investment bankers on the board.

21 percent of all equity issues that are made by firms on which they have board representation. This is significantly greater (18 percent greater) than the percentage of lead underwriting they perform in other, unaffiliated firms. When we examine the top-tier investment banks separately, we find that the benefits are larger. They lead underwrite 53 percent of the equity issues made by affiliated firms, and this is greater than the fraction of lead underwriting in other firms by 45 percent. The other (non top-tier) investment banks do not fare as well, since they get a much smaller benefit (an increase of about 9 percent) from their board position. We find a similar pattern both in total proceeds and the gross spread. This provides confirmatory evidence that the ability to strengthen their competitive position and get a larger share of the underwriting business of the affiliated firms serves as a motivation for investment bankers to serve on boards.

We also observe that the benefit is smaller in debt issues (Panel B). The difference between underwriting in affiliated firms and other firms is much lower, about 9 percent. The gain for top-tier investment banks is a significant 22 percent, whereas it is statistically insignificant for the other investment banks. Overall, this evidence shows that the affiliated investment banks gain significantly higher deal flow from firms where they have directorships.

## **5. Conclusion**

We examine whether the presence of one type of specialist directors, investment banker directors, is mutually beneficial to the firm and the affiliated investment bank. We explore the benefits of board level relationships between firms and investment banks, and document the advisory (non-monitoring) role of these specialist directors.

We show that firms with investment banker directors are able to raise larger amounts of external equity capital, with smaller underpricing and lower underwriting fees. The results are not an artifact of firm size. Our findings are not consistent with the hypothesis that investment banks use their monopoly position to charge higher fees. The presence of an investment banker director significantly mitigates other measures of financing constraints. This result is robust when we control for self-selection. The affiliated investment bank also benefits by lead underwriting a significantly larger fraction of equity issues in firms in which its employees hold directorships. Collectively, this evidence is consistent with the “matching” view, which suggests that investment banker directorships occur when both the firm and the affiliated investment bank gain.

We address the advisory, informational impact of investment banker directors on the firm. While we focus on the benefits to external financing arising from a lowering of adverse selection problems, we acknowledge that part of the wedge between the costs of internal and

external funds may arise from agency problems. Our univariate evidence suggests that alternative monitoring mechanisms are not weaker in firms with investment banker directors. While we do not rigorously test whether the presence of investment banker directors affects the quality of board monitoring, the evidence of positive abnormal returns associated with their appointments, as documented in Rosenstein and Wyatt (1990), suggests that this problem may be small in relation to the benefits these directors provide. We focus on a subset of capital market activities, i.e., capital raising. Whether or not the firm benefits from other investment banking activities, and whether the potential conflicts of interests dampen the monitoring role of investment banker directors are important issues that could be further addressed by future research.

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**Table 1**  
**Characteristics of Investment Banker Directors**

Table below summarizes the number of directorships held by investment banker directors and their characteristics. There are 280 directors from 75 investment banks who serve on the boards of 257 firms in our sample. Ten directors serve on boards along with another director from the same investment bank and are not included in the table. Ranking is the Modified Carter-Manaster Ranking of Investment Banks obtained from Jay Ritter's website. Tenure on board is the average number of years served on the board by the investment bankers on the firm's board as of 1995. Age is the investment banker's age as of 1995. The Concentration Index measures the concentration of investment banks among investment bank directorships and calculated like the Herfindahl Index, as the sum of squares of each investment bank's fractional share of the investment banking directorships in our sample. Significance levels test for differences between top-tier and other, non top-tier firms.

	Top-Tier	Other	Total
Number of Investment Bank Directorships	114	166	280
Number of Firms	110	147	1440
Ranking	9.00 (9)	7.363 *** (8.0) ****	
Tenure on Board of IB director	7.71 (5)	9.58 ** (7.0) **	8.82 (6.0)
Age of IB director	54.60 (55)	56.72 * (58) **	55.86 (57)
Number of Unique Investment Banks	11	64	75
Investment Bank Concentration Index	0.1442	0.0383	0.0367

\*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% respectively.

**Table 2**  
**Characteristics of Firms with Investment Banker Directors**

Table below presents the mean and median characteristics of firms with and without investment bankers on the board of directors. The sample contains 1440 non-regulated firms on Compustat with at least \$100m in assets and proxy statements available during the 1995 proxy year. Total Assets (Item # 6) are measured as of fiscal year-end 1994. Control firms are obtained by matching each firm with an investment banker on board to the nearest larger firm (total assets in 1994) without investment banker directors. Standard deviation of operating income is computed as the standard deviation of operating income (Item #13) to total assets over the years 1991-1995. All other Compustat based measures are averages over the fiscal years 1993-1995. Book to Market value of Equity is the ratio of the Book Value of Equity (Item #60) divided by the Market Value of Equity (Item # 24 x Item # 25). Deficit is defined as Dividends (Item #127) plus Investment (Item 128 + Item 113 + Item 129 –Item 107 – Item 109 – Item 309 – Item 310) plus Change in Working Capital (- Item 302-Item 303 –Item 304 – Item 305 – Item 307 + Item 274 – Item 312 – Item 301) minus Cash-flow after interest and Taxes (Item 123 + Item 124 + Item 125 + Item 126 + Item 106 + item 213 + Item 217 + Item 314). Debt is the sum of short-term and long-term debt (Item 34 + Item 9). Cash is the amount of cash and Short-Term Investments (Item 1). Cash-Flow equals Income before Extraordinary Items ((item 18) plus Depreciation (Item 14) minus preferred and common dividends (Item 19 and Item 21). Acquisitions (Item 129) and Capital Expenditures (Item 128) are from the statement of Cash flows. Net Working Capital equals Inventory (Item 3) plus Receivables (Item 2) minus Accounts Payable (Item 70). Change in accounts payable is the percentage change in Net working capital from one year to the next. Institutional ownership is the total ownership by Institutions in 1995, as obtained from Spectrum. Number of analysts is the average number of analysts following the firm. Board size is the number of members on the board as mentioned in the proxies during the 1995 season. Percent independent directors are the fraction of outside directors without any other relationships with the firm. The tests of differences columns show t-values and Wilcoxon 'z' in parentheses.

	Investment Banker on Board (1)	Top-tier Investment Banker on Board (2)	No Investment Banker on Board (3)	Control Firms (4)	Tests of difference (1) – (3)	Tests of difference (2) – (3)	Tests of difference (1) – (4)
N	257	110	1183	257			
Panel A: Financial Characteristics							
Total Assets	3888.58 (551.37)	6,435.67 (841.96)	1,798.50 (358.19)	4320.52 (553.32)	2.86 *** (3.53) ***	4.21 *** (5.21) ***	-0.25 (-0.10)
Standard Deviation of Operating Income (%)	4.93 (3.58)	4.67 (3.51)	5.21 (3.84)	4.46 (3.27)	-0.45 (-1.10)	-0.39 (-1.20)	0.55 (0.57)
Book to Market Value of Equity	0.476 (0.426)	0.46 (0.40)	0.547 (0.481)	0.527 (0.472)	-2.84 *** (-2.26) **	-2.42 ** (-2.38) **	-1.53 (-1.01)
Operating Income / Total Assets	18.08 (16.51)	17.68 (16.22)	18.03 (16.51)	17.78 (16.51)	0.08 (0.18)	-0.33 (-0.39)	0.34 (0.18)
Deficit (\$ million)	6.54 (3.96)	7.42 (2.16)	15.03 (5.89)	21.85 (6.21)	-1.09 (-1.82) *	-0.58 (-1.94)	-1.46 (-1.30)
Debt / Total Assets (%)	24.18 (22.54)	26.70 (24.63)	24.92 (23.22)	28.36 (24.89)	-0.57 (-0.62)	0.95 (0.69)	-2.25 *** (-1.98) **
Cash / Total Assets (%)	12.12 (5.91)	9.49 (5.29)	13.38 (6.34)	12.10 (6.53)	-0.96 (-0.81)	-2.12 ** (-1.81) *	-0.01 (-0.95)
Cash-flow / Total Assets (%)	10.05 (9.31)	9.69 (9.06)	10.11 (9.35)	9.93 (9.33)	-0.20 (-0.05)	-0.61 (-0.86)	0.20 (-0.30)
Acquisitions / Total Assets (%)	2.88 (0.36)	2.66 (0.22)	2.86 (0.15)	2.42 (0.00)	0.06 (1.80) *	-0.36 (0.55)	1.11 (1.97) **
Capital Expenditures (%)	8.62 (6.19)	8.41 (6.53)	9.48 (6.74)	9.93 (6.74)	-1.55 (-0.96)	-1.19 (-1.01)	-1.67 * (-0.57)
Change in NWC (%)	3.49 (2.03)	3.03 (1.78)	4.07 (2.28)	3.67 (1.81)	-1.39 (0.80)	-1.76 * (-1.70) *	-0.32 (0.32)

	Investment Banker on Board (1)	Top-tier Investment Banker on Board (2)	No Investment Banker on Board (3)	Control Firms (4)	Tests of difference (1) – (3)	Tests of difference (2) – (3)	Tests of difference (1) – (4)
<i>Panel B: Governance Variables</i>							
Institutional Ownership	51.17 (54.88)	55.50 (56.48)	47.83 (48.94)	48.97 (50.25)	2.11 ** (2.24) **	3.35 *** (3.46) **	1.12 (1.19)
Number of Analysts	6.44 (4.75)	7.23 (5.67)	5.83 (4.11)	6.91 (5.08)	1.65 * (2.16) **	2.63 *** (3.07) ***	-0.93 (-0.25)
Board Size	9.74 (9)	10.24 (10)	8.61 (8.0)	9.01 (9.00)	5.78 *** (5.37) ***	5.87 *** (5.74) ***	2.77 *** (2.63) ***
Percent Independent Outsiders	26.65 (25.00)	29.35 (28.60)	28.01 (25.00)	28.99 (27.30)	-0.96 (-0.69)	0.64 (0.73)	-1.27 (-1.02)

\*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% respectively.

**Table 3**  
**Logistic Regressions of the Presence of Investment Banker Directors**

Table below presents results from logistic regressions modeling the presence of investment bankers on the board of directors. Total Assets are as of fiscal year end 1994. Kaplan-Zingales Index is computed using the formulation in Lamont et al. (2001). Prior Industry return is the equally weighted buy and hold returns for firms in the same 2-digit SIC from 1993 to 1995. Book to Market, Deficit, and Number of Analysts are as defined in Table 2. Delisting is a dummy variable measuring firm survival, that takes a value '1' if the firm is not delisted before 2000 and '0' otherwise. Models 4,5, and 6 are ordered logistic models. The ordering is as follows: No investment banker on board, low-tier investment banker on board, and top-tier investment banker on the board.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept 1				-3.480 ***	-3.479 ***	-3.294 ***
Intercept 2	-2.445 ***	-2.448 ***	-2.340 ***	-2.492 ***	-2.490 ***	-2.330 ***
Log of Total Assets	0.166 ***	0.167 ***	0.255 ***	0.178 ***	0.178 ***	0.253 ***
Kaplan-Zingales Index	-0.013	-0.012	-0.014	-0.013	-0.013	-0.012
Prior Industry Return	0.042	0.049	0.037	0.036	0.044	0.033
Book to Market	-0.423 **	-0.413 **	-0.501 **	-0.458 **	-0.447 **	-0.491 **
Deficit		-0.001	-0.001		-0.001	-0.001
Number of Analysts			-0.033			-0.027
Delisting			-0.460			-0.478
Observations	1399	1399	1198	1399	1399	1198

\*\*\*, \*\*, \* represent significance at the 10%, 5%, and 1% respectively.

**Table 4**  
**Capital Market Activity of Sample Firms**

Panel A presents the means and medians of the equity issued by sample firms from 1992-1998 and the underpricing of seasoned equity offerings, classified by whether a director of the firm is associated with an investment bank or not. Director = (top-tier) Underwriter column indicates that the (top-tier) investment bank that the director is affiliated with, underwrote the issue. Multiple issues on the same day are added up and considered as a single issue. All information on Equity and Debt Offerings is obtained from SDC. Underpricing is measured from the closing price prior to the offer date (Close to Offer) and from the offer price and from the offer price to closing price on the offer date (Offer to Close). Panel B presents a summary of debt issues. The tests of differences columns show t-values and Wilcoxon 'z' in parentheses.

Panel A: Equity Offerings

	IB on Board	Top-tier IB on Board	Director = Underwriter	Director = Top-tier Underwriter	No IB on Board	Tests of difference	Tests of difference	Tests of difference
	(1)	(2)	(3)	(4)	(5)	(1) – (5)	(2) – (5)	(4) – (5)
Number of offerings	128	61	42	33	602			
Average Proceeds per transaction	181.49 (121.95)	227.15 (170.00)	182.83 (160.00)	193.18 (173.2)	108.59 (64.55)	4.07*** (5.11)***	4.43*** (6.69)***	3.14*** (4.98)***
Gross Spread (\$millions)	6.12 (4.32)	7.63 (5.68)	5.49 (5.12)	6.14 (5.44)	4.09 (3.08)	4.57*** (4.36)***	6.40*** (5.97)***	3.03*** (4.10)***
Gross Spread (%)	4.31 (4.26)	3.95 (3.94)	4.16 (4.00)	3.88 (3.86)	4.76 (4.97)	-3.95*** (-4.86)***	-6.26*** (-6.14)***	-5.10*** (-5.32)***
Rank of Underwriter	8.65 (9)	8.92 (9)	8.65 (9)	9 (9)	8.38 (9)	3.06*** (3.66)***	4.00*** (5.44)***	14.18*** (4.47)***
Close to Offer Returns	-1.55 (-0.92)	-1.26 (-0.77)	-1.64 (-1.01)	-1.72 (-1.27)	-2.39 (-1.64)	2.39** (2.40)**	2.99*** (2.30)**	1.05 (0.79)
Offer to Close Returns	1.43 (0.64)	1.25 (0.64)	1.44 (0.70)	1.25 (0.69)	2.22 (1.04)	-3.13*** (-2.32)**	-3.45*** (-1.86)*	-2.72*** (-1.49)

Panel B: Debt Offerings

	IB on Board	Top-tier IB on Board	Director = Underwriter	Director = Top-tier Underwriter	No IB on Board	Tests of difference	Tests of difference	Tests of difference
	(1)	(2)	(3)	(4)	(5)	(1) – (5)	(2) – (5)	(4) – (5)
Number of offerings	442	263	80	73	1387			
Average Proceeds per transaction	189.11 (149.20)	170.44 (101.00)	176.97 (187.25)	174.07 (180.00)	161.25 (99.90)	2.24** (4.13)***	0.61 (1.31)	0.90 (3.50)***
Gross Spread (\$millions)	1.86 (1.31)	1.76 (1.30)	1.88 (1.42)	1.86 (1.30)	2.05 (1.31)	-1.44 (-0.03)	-1.72* (-1.25)	-0.62 (-0.08)
Gross Spread (%)	0.90 (0.65)	0.86 (0.65)	1.01 (0.71)	0.98 (0.67)	1.08 (0.75)	-3.78** (-4.09)***	-3.39*** (-4.52)***	-0.93 (-0.90)
Maturity	13.07 (10)	12.38 (10)	15.16 (10)	15.37 (10)	12.47 (10)	-1.17 (-0.14)	-0.13 (-1.41)	10.46*** (2.82)***
Rank of Underwriter	8.83 (9)	8.87 (9)	8.93 (9)	9 (9)	8.88 (9)	-2.19** (-2.71)***	-0.39 (-0.91)	2.47** (1.52)

\*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% respectively

**Table 5**  
**Underpricing of Seasoned Equity Offerings**

Table below presents results from ordinary least squares regression determining the underpricing of seasoned equity issues during 1992-1998 for our 1440 sample firms. Returns are measured from the closing price prior to the offer date (close to offer) and from the offer price and from the offer price to closing price on the offer date (offer to close). The standard deviation of returns is estimated using daily returns from 250 trading day prior to the offer date. Market capitalization is the value of common stock on the day prior to the offering date. Price is the closing price on the day prior to the offer date. All regressions include year dummies. Significance levels in the regressions are White-heteroscedasticity corrected.

	1	2	3	4	5	6
	Close to offer Returns			Offer to Close Returns		
Intercept	-0.071	-0.069	-0.077	0.053	0.053	0.059
Log of Market Capitalization	0.396	0.322	0.753	-0.090	-0.085	-0.396
Standard Deviation of Returns	-0.075	-0.077	-0.075	0.171	0.172	0.172
Proceeds/Market Capitalization	-12.982	-12.811	-11.750	38.225**	37.871**	37.194***
Log Price	0.014***	0.014***	0.014***	-0.012***	-0.012***	-0.012***
Investment Bank Director Dummy	0.006*			-0.006**		
Top-Tier Investment Bank Director Dummy		0.004*			-0.003**	
Director=Investment Bank Dummy			0.004			-0.005
Number of Observations	690	690	690	690	690	690
Adj R-squared	0.0655	0.0653	0.0623	0.1211	0.1200	0.1179

\*\*\* represent significance at the 10%, 5%, and 1% respectively

**Table 6**  
**Affiliated Investment Banks and Costs of Equity Underwriting**

Table below presents results from ordinary least squares regression determining the gross spread of seasoned equity issues during 1992-1998 for our 1440 sample firms. Panel A presents results from traditional Economies of Scale based models, and Panel B presents results from models based on Altinkilic and Hansen (2000). The prior underwriting dummy variable takes the value '1' if the lead underwriter in the current SEO also was a lead underwriter in the immediately preceding SEO within the previous five years. The Market activity measures the total dollar value of all seasoned equity offerings in the prior three months prior to offering date. Standard deviation of returns is estimated using daily returns from 220 trading day period ending 40 days before the offering date. Market capitalization is the value of common stock on the day prior to the offering date. All significance levels are for White-heteroscedasticity corrected standard errors.

*Panel A: Economies of Scale Models*

	Models excluding Prior Underwriting				Models including Prior Underwriting			
	1	2	3	4	5	6	7	8
Intercept	8.090***	8.060***	8.087***	8.067***	8.104***	8.074***	8.099***	8.080***
Log of Proceeds	-	-0.774***	-	-0.777***	-	-0.773***	-	-0.775***
Investment Bank Director Dummy	0.782***		0.781***		0.781***		0.780***	
	-0.056				-0.054			
Top-Tier Investment Bank Director Dummy		-0.166*				-0.163*		
Director=Lead Underwriter Dummy			-0.191*				-0.179*	
Director = Top tier Lead Underwriter Dummy				-0.285**				-0.273**
Prior Underwriting Dummy					-0.059	-0.057	-0.050	-0.047
Number of Observations	702	702	702	702	702	702	702	702
Adjusted R-squared	0.5205	0.5222	0.5221	0.5236	0.5207	0.5222	0.5220	0.5235

*Panel B: Altinkilic-Hansen based Models*

	Models excluding Prior Underwriting				Models including Prior Underwriting			
	1	2	3	4	5	6	7	8
Intercept	2.907***	2.922***	2.882***	2.895***	2.937***	2.952***	2.908***	2.920***
Inverse of Proceeds	20.954** *	20.653** *	21.073** *	20.907** *	20.789** *	20.495***	20.932** *	20.775** *
Proceeds / Market Capitalization	1.734***	1.687***	1.740***	1.705***	1.721***	1.675***	1.728***	1.695***
Market Activity	0.108	0.098	0.102	0.098	0.098	0.088	0.093	0.090
Standard Deviation of Returns	0.335***	0.335***	0.337***	0.338***	0.338***	0.338***	0.340***	0.340***
Investment Bank Director Dummy	- 0.186***				- 0.182***			
Top-Tier Investment Bank Director Dummy		- 0.308***				-0.303***		
Director=Lead Underwriter Dummy			-0.234**				-0.219**	
Director = Top tier Lead Underwriter Dummy				- 0.325***				-0.311***
Prior Underwriting Dummy					-0.066	-0.065	-0.059	-0.057
Number of Observations	673	673	673	673	673	673	673	673
Adjusted R-squared	0.5127	0.5152	0.5107	0.5126	0.5131	0.5155	0.5108	0.5126

\*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% respectively.

**Table 7**  
**Measures of Financing Constraints**

Table below presents means and medians (in parentheses) of measures that have been used to proxy for financing constraints in the literature. Dividend payout ratio is the ratio of common dividends paid (Item # 21) to earnings available to common (Item #237). Repurchases is the dollar amount of purchases on common and preferred stock (Item # 115). KZ Index is the Kaplan and Zingales Index computed using the formulation in Lamont et al. (2001). The tests of differences columns show t-values and Wilcoxon 'z' in parentheses (Chi-Squares when testing proportions).

	IB on Board (1)	Top-tier IB on Board (2)	No IB on Board (3)	Control Firms (4)	Tests of difference (1) – (3)	Tests of difference (2) – (3)	Tests of difference (1) – (4)
Dividend Payout Ratio (%)	25.12 (9.85)	23.73 (7.18)	17.65 (0.01)	16.19 (1.52)	3.39 *** (2.99) ***	1.91 * (1.76) *	3.05 *** (2.56) **
(Dividend +Repurchases) Payout Ratio	39.54 (21.93)	38.19 (18.04)	29.48 (13.63)	29.67 (14.67)	3.22 *** (2.50) **	1.93 * (1.41)	2.39 ** (1.77) *
KZ index	-3.36 (-0.67)	-2.54 (-0.91)	-2.71 (-0.67)	-1.93 (-0.43)	-1.36 (-0.77)	0.23 (-0.19)	-2.26 ** (-2.01) **
Percent Firms paying Common Dividends	59.79	61.82	50.89	50.32	6.45 **	4.93 **	3.48 *
Percent firms with Commercial Paper	22.96	23.33	16.09	21.40	7.01 ***	8.39 ***	0.28
Percent firms with Bond Rating	47.86	52.42	41.14	53.69	6.31 **	12.23 ***	-0.50

\*,\*\*,\*\*\* represent significance at the 10%, 5%, and 1% respectively

**Table 8**  
**Investment Banker Directors and Financial Constraints**

This table reports results from the Almeida, Campello, Weisbach (2003) based model, modeling the cash-flow sensitivity of cash. The dependent variable in these regressions is the change in cash-holdings from the previous year. The sample consists of 1440 firms with at least \$100m in assets on Compustat at the end of fiscal year 1994. Control firms are obtained by matching each firm with an investment banker on board to the nearest larger firm (total assets in 1994) without investment banker directors. All variables are as of fiscal year 1995. Models in the last two columns incorporate predicted probabilities of an investment banker on the board estimated from a logistic regression with log of total assets, average book to market, average deficit, and industry returns from 1993-1995 as explanatory variables. All other variables in the reported regressions are as defined in Almeida, Campello, Weisbach (2003). Significance levels in the first four models are heteroscedasticity corrected (White's correction), and in the last two models are adjusted for selection bias estimation (as in Greene (2003)).

	No Investment Bankers on Board	Investment Bankers on Board	Top-Tier Investment Bankers on Board	Control Firms	No Investment Bankers on Board	Investment Bankers on Board
	1	2	3	4	5	6
Cash-Flow	0.239 ***	-0.058	0.010	0.066	0.249 ***	-0.046
Capital Expenditures	-0.052	0.222	0.214	-0.149 ***	-0.058	0.211 ***
Acquisitions	-0.042	-0.034	-0.029	0.168	-0.042	-0.037
Δ Net Working Capital	-0.016	-0.118 *	-0.050	0.143	-0.021	-0.132
Q	0.017	0.028 ***	0.028 **	0.027 ***	0.020 ***	0.035 ***
Log Total Assets	-0.002	-0.003	0.001	0.001	0.007	0.012
Δ Short Term Debt	-0.003	-0.072	-0.109	-0.068	0.003	-0.013
Inverse Mills Ratio					-0.205	0.199 *
Adj R <sup>2</sup>	0.1143	0.1267	0.1452	0.2109	0.1196	0.1505

\*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% respectively

**Table 9**  
**Cash-flow Sensitivity around Investment Banker Appointments**

Table below presents results from OLS regressions modeling cash-flow sensitivity of cash prior to and after the appointment of an investment banker to the board of directors. The data consists of 104 firms where the investment banker directors have at most ten years of tenure as director on the firm's board, with available data in Year -1 through Year +1. Year 0 is the year the investment banker was elected to the board. Significance levels are heteroscedasticity corrected (White's correction).

	Year -1	Year 0	Year +1
Cash-Flow	0.234 *	0.115	-0.043
Capital Expenditures	-0.030	-0.301	0.007
Acquisitions	-0.499 ***	-0.295 **	0.036
Δ Net Working Capital	-0.204	-0.032	-0.103
Q Ratio	0.012	0.050 **	0.015
Log Total Assets	-0.007	-0.025 ***	0.001
ΔShort Term Debt	0.019	0.407 **	0.048
Adj R <sup>2</sup>	0.1321	0.3136	-0.0497

\*,\*\*,\*\*\* represent significance at the 10%, 5%, and 1% respectively

**Table 10**  
**Underwriting by Affiliated Investment Banks**

Table below presents, at the investment bank level, means and medians of the underwriting business obtained by investment banks in firms where they have a representative on the board and its difference from the percentage of business obtained in firms where they do not have directors. There are 799 equity issues and 1709 debt issues in the 1440 firms in our sample. We include only those issues that are underwritten during the period 1992-1998 by investment banks that have representation in some board. There are 75 underwriters during the period 1992-1998. There are 149 equity issues and 384 debt issues by firms with an investment banker on the board of directors. The firms in which 37 (42) of the 75 investment banks serve as directors, did not have an equity (debt) issue underwritten by any of these 75 investment banks during this period.

*Panel A: Equity Issues*

	Low Tier	Top Tier	Total
Number of Investment Banks	28	10	38
<i>Fraction of Underwriting in Affiliated firms</i>			
Number of Issues (%)	9.69 (0)	53.23 (50)	21.15 (0)
Total Proceeds (%)	8.28 (0)	49.98 (44.24)	19.26 (0)
Total Gross Spread (%)	8.21 (0)	49.36 (44.19)	19.33 (0)
<i>Difference between fraction of underwriting in affiliated firms vs. fraction of underwriting in other firms</i>			
Number of Issues (%)	8.63 ** (0)	45.31 *** (42.42) ***	18.28 *** (0) ***
Total Proceeds (%)	7.72 * (0)	39.18 *** (32.64) ***	16.00 *** (0) ***
Total Gross Spread (%)	7.62 * (0)	39.29 *** (27.07) ***	16.18 *** (0) ***

*Panel B: Debt Issues*

	Low Tier	Top Tier	Total
Number of Investment Banks	23	10	33
<i>Fraction of Underwriting in Affiliated firms</i>			
Number of Issues (%)	3.15 (0)	33.90 (33.40)	12.47 (0)
Total Proceeds (%)	3.42 (0)	32.90 (33.06)	12.35 (0)
Total Gross Spread (%)	3.16 (0)	30.31 (27.11)	11.39 (0)
<i>Difference between fraction of underwriting in affiliated firms vs. fraction of underwriting in other firms</i>			
Number of Issues (%)	2.88 (0)	22.24 ** (19.36) **	8.75 ** (0) *
Total Proceeds (%)	3.11 (0)	20.66 ** (18.89) **	8.43 ** (0) *
Total Gross Spread (%)	2.70 (0)	19.12 ** (17.31) **	7.68 ** (0) *

\*\*\* represent significance at the 10%, 5%, and 1% respectively