Three essays on corporate finance

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THREE ESSAYS ON CORPORATE FINANCE

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Introduction

This dissertation comprises three essays on corporate finance.

In essay one, we compare employee-friendly policies in family and nonfamily firms and examine whether a firm's ability to treat its employees explains the difference in market values between them. We find that compared with nonfamily firms, family firms treat their nonexecutive employees better (as measured by high employee-friendly policy ratings), which leads to higher firm value and greater employee productivity. We also find that family firms delegate greater decision-making power to nonfamily executive employees, and exert more effort to recruit and retain a prestigious top executive team, which contributes to firm value. These findings suggest that employee-friendly policies are an important channel through which family firms create value and gain competitive advantages relative to nonfamily firms.

In essay two, we investigate how the role of antitakeover provisions (ATPs) in alleviating the conflict of interests between shareholders and creditors differs between family and nonfamily firms. We find that while nonfamily firms with more ATPs (measured by the G-index) enjoy a lower cost of bank loans, the corresponding family firms do not. The adverse effect of ATPs on the cost of debt for family firms is particularly severe when they adopt control-enhancing mechanisms to maintain control. We also find that the adverse effect is more pronounced when bank loans are unsecured or have no covenants, when family firms are insulated from disciplinary forces (e.g., low product market competition or low leverage), or when family firms have more powerful CEOs (e.g., CEOs are the chairmen of the board, are old, or receive excess compensation). The results suggest that agency conflicts that vary depending on a firm's ownership and governance mechanisms are important considerations in examining the effects of ATPs on the cost of debt and that banks effectively factor in such conflicts when determining loan rates.

In essay three, we investigate how governance reform affects board functioning and firm value through the labor market channel. We find that the presence of unseasoned independent directors (UIDs) after the 2002 enactment of the Sarbanes-Oxley Act (SOX) is more common in firms

not compliant with the board and committee independence provisions. Further, the likelihood of UIDs being appointed to monitoring committees is significantly higher in the post-SOX period. Although investors on average react negatively to firm decisions to appoint UIDs in the pre-SOX period, this negative reaction is completely negated in the post-SOX era. We also find that the increased presence of UIDs in post-SOX boardrooms does not lead to low quality board monitoring and advising or poor firm performance. In some corporate events such as CEO turnover and financial reporting decisions, we find that boards with UIDs perform better than boards without UIDs. Overall, our findings highlight positive impact of governance reform on board functioning and firm value through its influence on directorial labor markets.

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Essay One: Family Business and Firm Value: Evidence from Stakeholder Relations with Employees

Abstract

We compare employee-friendly policies in family and nonfamily firms and examine whether a firm's ability to treat its employees explains the difference in market values between them. We find that compared with nonfamily firms, family firms treat their nonexecutive employees better (as measured by high employee-friendly policy ratings), which leads to higher firm value and greater employee productivity. We also find that family firms delegate greater decision-making power to nonfamily executive employees, and exert more effort to recruit and retain a prestigious top executive team, which contributes to firm value. These findings suggest that employee-friendly policies are an important channel through which family firms create value and gain competitive advantages relative to nonfamily firms.

Keywords: Family Firm, Employee Treatment, Founder, Stakeholder Relation, Nexus of Contract, Firm Value

JEL Classification: G32, G34, M51, M54

Introduction

Family firms are the most prevalent organizational form around the world (La Porta, Lopez-De-Silanes, and Shleifer (1999), Claessens, Djankov, and Lang (2000)). For example, founders and their heirs are the most common types of large, undiversified shareholders in the U.S., controlling about one-third of the Fortune 500 and S&P 500 industrial firms (Anderson and Reeb (2003)). Previous studies on family firms focus on how unique agency problems in family ownership affect family firm value. They show that family firms outperform nonfamily firms, and that this outperformance is largely due to low shareholder-manager conflicts inherent in the ownership structure and active monitoring by controlling owners (Demsetz and Lehn (1985), Anderson and Reeb (2003), Fahlenbrach (2009), Li and Srinivasan (2011)). However, other studies find that strong family control entrenches family owners and thus increases the agency conflicts between large and small shareholders, which can have an adverse effect on firm value (DeAngelo and DeAngelo (2000), Pérez-González (2006)). Although these studies enhance our understanding of the relation between family control and firm value from a perspective of agency problems, the empirical evidence on other potential sources through which family firms create value is surprisingly thin.

In this paper we seek to shed light on this unexplored question by identifying a family firm's stakeholder relations with employees as one such channel. We compare policies towards nonexecutive and executive employees¹ in family and nonfamily firms and examine whether a firm's ability to treat their employees explains the difference in market values between them.²

¹ We define executive employees as the five highest-paid executives reported in the ExecuComp database. They are the Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Vice President, or those with other titles such as the head of a subsidiary.

² Only few papers focus on stakeholder relations in examining family firm performance. Anderson, Mansi, and Reeb (2003) investigate how stakeholder relations with creditors differ between family and nonfamily firms. They show that shareholder-creditor conflicts are less likely in family firms than in nonfamily firms, and that stable stakeholder relations based on creditors' favorable perception help reduce the cost of public debt for family firms.

Contract theory and the theory of the firm view a firm as a nexus of explicit and implicit contracts between shareholders and other stakeholders whereby stakeholders supply the firm with capital and other resources in exchange for their claims on firm value (Coase (1937), Alchian and Demsetz (1972), Jensen and Meckling (1976), Cornell and Shapiro (1987)). Among various stakeholder relations, employee relations can be particularly important for firm performance because employees significantly contribute to production (Agle, Mitchell, and Sonnenfeld (1999)) and human capital is considered one of the most important factors for a firm's success (Pfeffer (1996), Bae, Kang, and Wang (2011)).

The roles of human capital and managerial talent are likely to be particularly important for the success of family firms. For example, Pérez-González (2006) shows that a lack of managerial talent in family firms managed by incapable descendants leads to their underperformance while family firms headed by professional CEOs do not undergo significant declines in performance. Using Danish data, Bennedsen et al. (2007) find that the underperformance of family CEO firms is more pronounced in fast-growing industries in which the needs for skilled managerial talent are greater. Consistent with these findings, industry practitioners have highly valued family firms' distinct corporate culture that puts a greater emphasis on employee relations. For example, a KPMG (2011) report identifies family firms' unique work environment in which employees are treated like extended family and develop strong ties with the founding family as one of significant competitive advantages of family businesses. These studies and anecdotes suggest that strong stakeholder relations with employees can be an important channel through which family firms create value and maintain their competitive advantages over nonfamily firms.

There are two important characteristics that make family firms more effective at implementing employee-friendly policies than nonfamily firms. First, family firms have a relatively longer-term business horizon than nonfamily firms due to their unique ownership

structure (Anderson, Mansi, and Reeb (2003), Mueller and Philippon (2011)). For example, Bertrand and Schoar (2006) argue that family owners' strong incentives for intergenerational transfers of control provide managers in family firms with "patient capital," which enables them to pursue investment opportunities that maximize long-run returns.³ Mueller and Philippon (2011) also show that family firms are more prevalent in countries where labor relations are problematic as family owners with their long-term investment horizon have comparative advantages in honoring implicit labor contracts.

Second, founding family members who typically hold undiversified portfolios have better access to more intimate knowledge of the firms (Chan, Chen, and Hilary (2010), Anderson, Reeb, and Zhao (2012)), which allows family firms to invest more in intangible employee relations.⁴ Edmans' (2011) finding that a higher level of employee satisfaction leads to better long-term returns underscores the importance of firm-specific information in implementing investment in employee relations. He argues that despite long-term benefits, managers tend to underinvest in employee relations because outside investors are incapable of appreciating the intrinsic value of intangible assets. This underinvestment problem arising from managerial myopia is less likely in family firms than in nonfamily firms since family owner-managers are relatively insulated from short-term market pressures and they can better execute intangible investment based on their hard-to-obtain information.

Investments in employee relations can create firm value as the investments help increase employees' perceived viability of firms in honoring their implicit commitment. A firm's reputation for honoring its implicit commitment can significantly influence its ability to obtain

³ PwC Family Business Survey report (2012) also cites family firms' longer business horizons and unique business culture based on trust as an important source of competitive advantage, labeling such distinct qualities of family business as "patient capital."

⁴ Anderson and Reeb (2003) argue that family members have information advantages due to their presence in senior management positions as well as their high equity stake. For example, in our sample, family members account for 18.53% of top five executive positions and 18.03% of directorships in their firms.

support and trust among employees (La Porta et al. (1997)). For example, Guiso, Sapienza, and Zingales (2013) find that the perceived integrity of the management helps firms to improve their productivity and ability to maintain sound industrial relations. Similarly, Edmans (2011) argues that employee satisfaction helps improve a firm's ability to recruit and retain its employees and motivate them, which leads to better performance.

Previous studies show that family firms have a stronger reputation for keeping their commitments to implicit labor contracts than nonfamily firms. For example, Block (2010) shows that family firms tend to avoid downsizing in response to a decline in profitability because such policies could displease employees, and hostile employee relations could tarnish their corporate reputation. This finding suggests that family firms have a better reputation for employee treatment than nonfamily firms and thus, they can effectively incentivize their employees to support the firm's operation and to add firm value.

Overall, these arguments suggest that family firms have comparative advantages in implementing employee-friendly policies relative to nonfamily firms and are more effective at investing in employee relations. These advantages and effectiveness lead family firms to better align the interests of employees and shareholders and to achieve their outperformance relative to nonfamily firms (the "value creation hypothesis").⁵ Thus, the value creation hypothesis predicts that compared with nonfamily firms, family firms invest more in firm-specific human capital and such investment leads family firms to attain higher firm value and employee productivity.

To test the predictions of the value creation hypothesis, we examine policies towards nonexecutive and executive employees in a large sample of 17,052 firm-year observations in the U.S. for the period 1996 to 2010. To measure a firm's treatment of nonexecutive employees,

⁵ Edmans (2011, 2012) find that shareholder returns are positively associated with employee satisfaction and argues that employee retention as well as motivation are important determinants of shareholder value.

we create an *Employee Treatment Index* using ratings assigned to firms by KLD Research & Analytics, Inc. (hereafter, KLD) with respect to the firms' employee policies. To assess a firm's policies towards its executive employees, we create a *Management Treatment Index* by summing up the indicators for 16 items that capture executive employees' decision making power, job security, and reputation (i.e., visibility in the business community, education level, and relevant work experience).

Consistent with the value creation hypothesis, we find that family firms are more likely to adopt employee-friendly policies (i.e., higher *Employee Treatment Index* and higher *Management Treatment Index*) than nonfamily firms. We also find that family firms with a high *Employee Treatment Index* and those with a high *Management Treatment Index* outperform nonfamily firms as measured by Tobin's q . We further find a positive association between a firm's *Employee Treatment Index* and its productivity (as measured by total factor productivity and sales per employee), and that this association is stronger in family firms than in nonfamily firms.

To check the robustness of the above results, we use firms named to *Fortune's* "100 Best Companies to Work For" (hereafter referred as "the Best Companies list") as an alternative measure of employee-friendly policies. In line with the results using the *Employee Treatment Index* and the *Management Treatment Index*, we find that family firms are more likely to be included on the Best Companies list. Using a propensity score matching approach, we further show that family firms included on the Best Companies list post higher Tobin's q (ROA) than matching nonfamily firms not included on the list. These results lend additional support to the value creation hypothesis.

We also perform several sensitivity tests to alleviate potential endogeneity problems inherent in our study. First, we conduct event studies to mitigate the reverse causality concern

that the causation goes from high performance of family firms to high *Employee Treatment Index* (*Management Treatment Index*), and not vice versa. We use a firm's first-time inclusion on the Best Companies list and sudden deaths of executives as natural experiments. In consistent with the value creation hypothesis, we find the market reacts more positively when family firms are included on the Best Companies list than when nonfamily firms are included on the list. We also find that the market reaction is more negative in response to the sudden deaths of top executives in family firms than in nonfamily firms. To the extent that family firms are able to attract talented top executives and exert efforts to retain them better, the potential loss of market value due to their sudden deaths is expected to be greater for family firms than for nonfamily firms. Moreover, we find that the value loss in family firms is particularly greater when a firm's level of investment in employee benefits is higher (i.e., higher *Employee Treatment Index*), or when the deceased executives' contribution to firm value is greater as measured by the ratio of their pay to the aggregate compensation of the top five executives.

Second, we estimate two-stage least squares (2SLS) regressions using industry wage rate and the proportion of the number of Best Companies in a firm's same industry. The empirical approach reduces the concern that the positive association between employee-friendly policies and family firm value could be explained by some omitted variables and that the causation might run from firm value to employee friendly policies, not vice versa. We find our results do not change.

Third, to alleviate the concern that the family firm status and its choice of employee-oriented policies are determined by some unobservable variables, we examine a subsample of 138 unique family firms that become nonfamily firms. We find that a change in a firm's status from family to nonfamily firms leads the firm to shift away from its employee friendly policies, suggesting that family firms indeed treat their employees better than nonfamily firms.

As additional tests, we perform subgroup analyses to test whether the incremental benefits of investment in human capital are greater in family firms managed by nonfounder CEOs than those managed by founder CEOs. We find that nonfounder CEO family firms treat employees better than founder CEO family firms, and the positive association between the *Employee Treatment Index* (*Management Treatment Index*) and firm value is stronger for nonfounder CEO firms than founder CEO firms. Moreover, we find that family firms are more likely than nonfamily firms to promote internal nonfamily candidates to the CEO position rather than outside candidates. To the extent that the appointment of internal candidates to the CEO position signals the firm's commitment to fulfilling its implicit contracts with employees, these results support the value creation hypothesis.

Our study contributes to the literature in two important ways. First, our research extends prior studies on the impact of family ownership on firm value. Prior literature shows that concentrated family ownership mitigates agency problems between managers and shareholders (Fama and Jensen (1983), Villalonga and Amit (2006), Ali, Chen, and Radhakrishnan (2007)) and between debtholders and shareholders (Anderson, Mansi, and Reeb (2003)), resulting in an increase in firm value. We further identify employee friendly policies as an important channel through which family firms enhance employee productivity and add shareholder value.

Second, our study contributes to the literature on the effects of stakeholder relationships on firm value. Prior research finds mixed evidence on whether stakeholder-oriented policies are beneficial to shareholders. While some studies show that stakeholder-friendly policies help increase firms' long-term profitability and efficiency (Jawahar and McLaughlin (2001), Jensen (2001), Freeman, Wicks, and Parmar (2004), Edmans (2012), Deng, Kang, and Low (2013)), others find that managers invest in stakeholder-friendly policies to advance their careers, entrench themselves, or obtain other private benefits (Friedman (1998), Pagano and Volpin (2005), Cespa and Cestone (2007), Cronqvist et al. (2009)). Our study shows that family firms

have a greater ability to sustain a durable relationship with stakeholders, which allows them to gain competitive advantages and achieve higher firm value relative to nonfamily firms. This result underscores the greater needs for family firms to increase reliance on outside professionals and improve their ability to draw outside talent to overcome problems associated with inherited control by incompetent descendants (Pérez-González (2006)).

The paper is organized as follows. In Section I we describe the data and provide summary statistics. In Section II we compare policies towards executive and nonexecutive employees in family and nonfamily firms and how the adoption of employee-friendly policies affects family firms' market value and productivity. In Section III we present results of tests using a firm's inclusion on the Best Companies list as an alternative measure of employee-friendly treatment. Section IV reports results of tests that address potential endogeneity. In Section V, we report results of additional tests on the differential impact of employee-friendly policies on founder versus nonfounder CEO family firms and the likelihood of selecting the CEO from the internal talent pool. We summarize our findings and conclude in Section VI.

I. Data and Summary Statistics

A. Sample Selection

Our sample comprises the universe of firms over the period 1996 to 2010 in RiskMetrics (formerly IRRC director database), which provides detailed information on all directors of Standard and Poor's (S&P) 1,500 firms. We obtain financial and stock price data from Compustat and the Center for Research in Security Prices (CRSP), respectively. Firms with missing stock returns or financial data are deleted from the sample. We also exclude firms in

regulated industries (SIC codes between 4900 and 4999 and between 6000 and 6999). Our final sample consists of 17,052 firm-year observations (2,478 unique firms).⁶

B. Employee Treatment

We measure a firm's treatment of employees using KLD ratings that have been used in prior studies (e.g., Cronqvist, Low, and Nilsson (2009), Landier, Nair, and Wulf (2009), Verwijmeren and Derwall (2010), Bae, Kang and Wang (2011)). Based on various sources, KLD evaluates firms' social performance along seven major dimensions: community, corporate governance, diversity, employee relations, environment, human rights, and product quality and safety. Of these seven areas, we sum the ratings for the ten categories (six strengths and four concerns) pertaining to employee relations to create our measure of employee treatment, namely *Employee Treatment Index*.⁷ A higher *Employee Treatment Index* indicates better employee treatment.⁸

As Landier, Nair, and Wulf (2009) note, the KLD criteria generally focus on firm-wide employee policies as some categories (e.g., cash profit sharing and retirement benefit strength) assess policies that apply to the entire workforce. However, other categories (e.g., union

⁶ The number of observations varies across tables due to data availability (e.g., KLD ratings and director information).

⁷ In the employee relations category, KLD evaluates six strengths (employee involvement, health and safety strengths, retirement benefit strengths, cash profit sharing, union relations, and other strengths) and five concerns (health and safety concerns, retirement benefits concerns, workforce reductions, union relations, and other concerns), assigning a 0/1 rating for each of these areas. We exclude *workforce reductions* from the analysis because we find significantly negative correlations between the indicator for *workforce reductions* and other concern categories, whereas the correlations among the indicators for the other concern categories are all positive. Furthermore, the indicator for *workforce reductions* is significantly positively correlated with the overall strength score, particularly with the *cash profit sharing* and employee involvement strength indicators, suggesting that *workforce reductions* does not serve as a good measure of poor employee treatment. Verwijmeren and Derwall (2010), who study the relation between employee relations and firm leverage, also exclude *workforce reductions* from their employee well-being index. Some studies only use strengths in employee relations to measure employee relations (Cronqvist, Low, and Nilsson (2009), Landier, Nair, and Wulf (2009), Bae, Kang and Wang (2011)), possibly due to this potential problem related to *workforce reductions*.

⁸ In unreported tests, following Landier, Nair, and Wulf (2009) and Bae, Kang and Wang (2011), we also exclude *other strengths* and *other concerns* in constructing the *Employee Treatment Index*, since their content and meaning are not clear. Our results do not change.

relations) capture a firm's treatment of nonexecutive employees. As such, the *Employee Treatment Index* may not serve as an effective measure of a firm's policies towards its top-level managers, who make important strategic decisions. Thus, to better assess the effects of executive employee treatment on family firm value, we create the measure of a firm's treatment of executive employees, namely, *Management Treatment Index*, by summing up the indicators for 16 variables related to a firm's recruitment and retention of its executive employees (e.g., top management team's decision-making power, job security, reputation and quality). We discuss the variables used to create the *Management Treatment Index* in Section I.D.

C. Definition of Family Firms

Following previous studies on family firms (e.g., Anderson and Reeb (2003), Villalonga and Amit (2006), Li and Srinivasan (2011)), we identify family firms using two criteria: the fractional equity ownership by a founding family and/or the presence of family members on the board. We define family firms as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or is in the top management.⁹ We identify family firms by searching the following sources: sections in firms' proxy statements that contain biographies on the directors, the list of family firms in the November 10, 2003 issue of *Business Week* magazine, the Board Analyst database, and various internet sources including companies' websites.

D. Summary Statistics

⁹ Family firms can be defined in various ways. See Villalonga and Amit (2010) for a detailed discussion on different definitions of family firms.

Panel A of Table I presents the distribution of family and nonfamily firms for the 1996 to 2010 sample period. Of 17,052 total firm-year observations, 6,659 (39.05%) and 10,393 (60.95%) are classified as family and nonfamily firms, respectively. The numbers are comparable to those in previous studies that use firms in the S&P 500 Index to identify family and nonfamily firms (e.g., Anderson and Reeb (2004)).

Panel B of Table I reports the industry distribution of family and nonfamily firms using two-digit SIC codes. Family firms are most prevalent in the wholesale and retail trade industry, followed by the services and transportation and communications industries.

Table II provides summary characteristics for the sample firms. All continuous variables are winsorized at the 1% level in both tails to mitigate the effects of potential outliers. Panel A shows that compared with nonfamily firms, family firms are smaller, younger, and riskier (higher stock return volatility), less diversified, and have lower leverage. Family firms also have higher capital expenditures (capital expenditure scaled by total assets) and have higher sales growth, higher firm value (Tobin's q), and a lower presence of institutional blockholders. In addition, boards of family firms tend to be less independent than those of nonfamily firms as measured by whether a board has a majority of independent directors. Each of the above differences in characteristics between family and nonfamily firms are statistically significant at the 1% level. Further analysis of family firm characteristics shows that among family firms, founder CEO firms (family firms in which the founder serves as the CEO) account for 38% of the sample.

Panel B of Table II shows that the mean *Employee Treatment Index* for family firms (-0.035) is similar to the value of nonfamily firms (-0.034). However, the mean *Management Treat Index* for family firms (5.226) is significantly higher than that of nonfamily firms (4.545) at the 1% level.

Management Treatment Index is computed using three management quality measures: 1) the relative importance (i.e., decision-making power) of the CEO and non-CEO top executives, 2) top executives' job security, and 3) top executives' prestige.¹⁰ Following Adams, Almeida, and Ferreira (2005) and Bebchuk, Cremers, and Peyer (2011), we use the following four variables to measure the degree of top-level officers' decision-making power: 1) whether the CEO is chair of the board, 2) whether the CEO is the only insider sitting on the board, 3) whether the CEO accumulates job titles, and 4) the ratio of the CEO's compensation to the aggregate compensation of the top-five executive team (CEO pay slice).¹¹ We find that CEOs of family firms are less powerful than CEOs of nonfamily firms, suggesting that other top-level officers in family firms have greater decision-making power than those in nonfamily firms.¹² Specifically, we find that top-level officers in family firms are more likely to sit on the board compared to their counterparts in nonfamily firms. Family firms also have lower CEO-chair duality, a lower concentration of titles in the hands of the CEO, and a lower CEO pay slice than nonfamily firms. All of the differences above are statistically significant at the 1% level, suggesting that non-CEO executives in family firms play a more influential role in strategic decision-making than those in nonfamily firms.

We next compare retention policies for top-level executives in family and nonfamily firms, using the median tenure of the management team (Chemmanur, Paeglis, and Simonyan

¹⁰ We obtain compensation information for top executives from ExecuComp and information on the detailed profiles of top executives from BoardEx. If information about executives is not available, we manually check their profiles using other sources including proxy statements and firm websites. Following Bebchuk, Cremers, and Peyer (2011), we exclude firms that report compensation for fewer than five executives from the analysis. When ExecuComp reports more than five executives for a firm, we use the five executives with the highest compensation to ensure that our analysis is comparable across firms. In computing compensation-related variables that require information about the CEO's compensation, we restrict our sample to firm-years in which the CEO was in office for the whole year (ExecuComp data item: CEOANN). We thank Young Han (Andy) Kim for sharing the matched identifiers between BoardEx and Compustat.

¹¹ Bebchuk, Cremers, and Peyer (2011) use CEO pay slice to measure the CEO's power and find that centralized power is associated with agency problems and poor firm performance.

¹² Our results that family firms grant more power to their non-CEO executives can be driven by family firms in which the CEOs are outside professionals while non-CEO executives are family members. To check this possibility, in untabulated tests, we repeat our analysis for a subsample of family firms managed by outside CEOs and find that our results do not change.

(2009)).¹³ Chemmanur, Paeglis, and Simonyan (2009) argue that longer tenure is an indication of cohesion and shared experience among team members, which can help reduce transaction costs in the decision-making process. We find that the mean value (firm-age adjusted mean value) of the median tenure of the management team is higher in family firms (12.11 (1.13)) than in nonfamily firms (11.09 (-0.68)).¹⁴ The difference between family and nonfamily firms is statistically significant at the 1% level. The findings suggest that compared with nonfamily firms, family firms have a greater capacity to retain their core talent longer and thus provide them with better job security.

We next compare the prestige of the top executive team in family and nonfamily firms. To capture a management team's prestige, we follow prior literature and use top executives' visibility in the business community, education level, and relevant work experience. We use three measures to proxy for top executives' visibility in the business community: the proportion of certified inside directors (CIDs; non-CEO inside directors holding outside directorships) on the board (Masulis and Mobbs (2011)), the proportion of officers on the management team who serve as trustees of nonprofit institutions (D'aveni (1990)), and interlocking directors (Hillman and Dalziel (2003)). Masulis and Mobbs (2011), for instance, show that CIDs have better managerial skills and play a valuable advisory and monitoring role, especially in firms in which firm-specific information is more critical. To capture the management team's education level, we use the proportion of top-five executives who graduated from Ivy League or Ivy League-equivalent educational institutions and the proportion of officers who hold a JD, an MBA, or a Ph.D. (D'aveni (1990), Chevalier and Ellison (1999), Pérez-González (2006)). We proxy for top management's relevant work experience using previous experience in public service, a

¹³ Following Chemmanur, Paeglis, and Simonyan (2009), we adjust tenure for firm age since these two variables are highly correlated with each other. Our results do not change when we use the average tenure of the management team. In computing the median (mean) tenure of the management team, we exclude family members to rule out the possibility that family firms' longer tenure is driven by long-serving family executives.

¹⁴ We obtain dates when top executives joined their firm from ExecuComp and fill in missing data using BoardEx. If this information is not available in either source, we manually check other sources including proxy statements and firm websites for executives' profiles.

previous partnership in a law or accounting firm, a prior senior management position in another firm, and the percentage of officers who are CPAs (D’aveni (1990), Chemmanur, Paeglis, and Simonyan (2009)).

We find that the mean proportion of CIDs on the board is higher in family firms (0.11) than in nonfamily firms (0.05).¹⁵ We also find that top management teams of family firms are more likely to serve on nonprofit institutions than those of nonfamily firms, and that interlocking directorates are more prevalent in family firms than in nonfamily firms. In addition, family firms have more executives who graduated from Ivy League or Ivy League-equivalent educational institutions and have more executives with a JD or Ph.D. degree than nonfamily firms. In contrast, family firms have fewer officers with an MBA than nonfamily firms. We further find that top management teams in family firms are more likely to have executives who are former government officials, who had been a partner in a law or accounting firm, or who are CPAs than top management teams of nonfamily firms, while family firms have fewer officers with top management experience at another firm prior to joining the current firm than nonfamily firms. The Appendix provides detailed descriptions of the construction of the variables used in Table II.¹⁶

II. Employee Friendly Policies and Firm Value

In this section we investigate whether family firms treat their employees better than nonfamily firms after controlling for various firm and industry characteristics and whether employee-friendly policies have different impact on firm value and employee productivity between family and nonfamily firms.

¹⁵ Data for the proportion of CIDs on the board are available only from 1998 to 2010 in RiskMetrics.

¹⁶ As an alternative measure of the *Management Treatment Index*, we exclude eight variables that measure executive employees’ educational level and work experience in its construction and repeat our analyses in the paper. We find that our results are qualitatively similar.

A. Determinants of Firms' Employee Treatment

To examine whether family firms treat their employees better than nonfamily firms, we estimate ordinary least squares (OLS) regressions in which the dependent variables are the *Employee Treatment Index* and the *Management Treatment Index*. Our key independent variable of interest is the indicator *Family firm*, which takes the value of one if founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm or at least one founding family member sits on the board or is in the top management and zero otherwise. The regressions control for several firm characteristics identified as important determinants of employee policies by prior literature (e.g., Jiao (2010), Bae, Kang, and Wang (2011)). We also include industry and year fixed effects to control for potential industry and time trend effects, respectively.

The results are reported in Table III. In columns (1) and (2), we use the *Employee Treatment Index* as the dependent variable. In column (1), we include only *Family firm* as an explanatory variable, controlling for industry and year fixed effects. We find that its coefficient estimate is positive and significant at the 10% level. In column (2), we add the full set of explanatory variables and obtain similar results. In columns (3) and (4), we use the *Management Treatment Index* as the dependent variable. We find that the coefficient estimate on *Family firm* is positive and significant at the 1% level in both columns. Turning to the control variables, we find that firms treat employees better when they are larger and more profitable and when they have higher R&D intensity. In contrast, firms with high leverage and those with high sales growth have less favorable employee policies.¹⁷

¹⁷ In untabulated tests, we repeat the analysis in Table III using the sum of the indicators for the six strengths and the sum of the indicators for the four concerns as separate dependent variables. We find that the coefficient estimate on *Family firm* is insignificant when we use the sum-of-strength scores as the dependent variable while it is significantly negative at the 10% level when we use the sum-of-concerns scores as the dependent variable. These results imply that compared with nonfamily firms, family firms are reluctant to implement policies that create potential conflicts with employees.

Overall, the results in this subsection suggest that family firms on average provide their nonexecutive and executive employees with better treatment than nonfamily firms do.

B. Employee Treatment and Firm Value

To examine whether employee-friendly policies are the channel through which firm value is created, and the extent to which family and nonfamily firms benefit from these policies, we estimate the following regressions:

$$\text{Tobin's } q_{it} = \text{Constant}_{it} + \alpha_i + \beta_t + \gamma \text{Family firm}_{it} (\text{indicator}) + \mu \text{Employee Treatment Index}_{it} + \psi \text{Family firm}_{it} (\text{indicator}) \times \text{Employee Treatment Index}_{it} + \eta X_{it} + \varepsilon_{it}, \quad (1a)$$

$$\text{Tobin's } q_{it} = \text{Constant}_{it} + \alpha_i + \beta_t + \gamma \text{Family firm}_{it} (\text{indicator}) + \mu \text{Management Treatment Index}_{it} + \psi \text{Family firm}_{it} (\text{indicator}) \times \text{Management Treatment Index}_{it} + \eta X_{it} + \varepsilon_{it}, \quad (1b)$$

where i denotes firms and t denotes time. The dependent variable is Tobin's q or industry-adjusted Tobin's q , depending on the specification. α_i and β_t are industry and year fixed effects, respectively. *Family firm* is an indicator that takes the value of one if founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or if at least one founding family member sits on the board or is in the top management and zero otherwise. *Employee Treatment Index* is the sum of the indicators for the six strengths and the four concerns of the employee relations dimension reported in the KLD database. *Management Treatment Index* is the sum of the indicators for the 16 items that measure executive employees' decision making power, job security, and reputation. X_{it} is a vector of firm characteristics, and ε_{jit} is an error term. The control variables used in the regression closely follow those used in prior studies (e.g., Villalonga and Amit (2006)). Standard errors are adjusted for heteroskedasticity and are clustered at the firm level.

In equation (1), γ measures the effect of family control on firm value and μ measures the effect of *Employee (Management) Treatment Index* on the value of nonfamily firms. Our key

coefficient of interest, ψ , measures the difference in the effect of *Employee (Management) Treatment Index* on firm value between family and nonfamily firms. The value creation hypothesis that employee-friendly policies not only help family owner-managers achieve their value-enhancing corporate objectives but also benefit other shareholders in family firms predicts ψ to be positive.

Table IV reports results. The dependent variable is Tobin's q in columns (1), (2), and (3) and industry-adjusted Tobin's q in columns (4), (5), and (6). Industry-adjusted Tobin's q is computed by subtracting the median Tobin's q for a firm's Fama and French (1997) 48 industry from the firm's raw Tobin's q .

Column (1) shows that the coefficient estimate on *Family firm* is positive and significant at the 1% level, consistent with prior literature that documents a family firm premium (e.g., Anderson and Reeb (2003), Fahlenbrach (2009)). In column (2), we add *Employee Treatment Index* and its interaction with *Family firm* as additional explanatory variables. We find that the coefficient estimate on *Family firm* remains positive and significant at the 5% level and the coefficient estimate on its interaction with *Employee Treatment Index* is also positive and significant at the 5% level. In column (3), we replace *Employee Treatment Index* with *Management Treatment Index* and find that the coefficient estimate on the interaction term between with *Management Treatment Index* and *Family firm* is positive and significant at the 5% level. The results are similar in columns (4), (5), and (6). These results support the value creation hypothesis.

C. Employee Productivity

In this subsection we investigate what drives the link between employee-friendly policies and family firm value. We focus on employee productivity as measured by total factor

productivity and log of sales per employee, as a potential driving force of this relation. Following Faleye, Mehrotra, and Morck (2006), we measure a firm's total factor productivity as the residual of annual industry-specific Cobb-Douglas production functions estimated by regressing the log of sales on the log of the number of employees and the log of net property, plant, and equipment for each Fama and French (1997) 48 industry.

Table V reports the results. In columns (1) and (2), we use total factor productivity as the dependent variable. In column (1), we regress a firm's total factor productivity on *Family firm* and other control variables used in the Table IV regression. We find that the coefficient estimate on *Family firm* is insignificant. In column (2), we include the *Employee Treatment Index* and its interaction with *Family firm* and find that the coefficient estimate on the interaction term is positive and significant at the 5% level. In columns (3) and (4), we use log of sales per employee as the dependent variable and find similar results as those in columns (1) and (2).

Overall, these results suggest that a family firm's commitment to favorable nonexecutive employee treatment increase employee productivity, which contributes to the outperformance of family firms.

III. Alternative Measure of Employee Friendly Policies

A. Inclusion on the Fortune's List of "Top 100 Best Companies to Work For"

To test the robustness of our main results using *Employment Treatment Index*, we use a firm's inclusion on the Best Companies list as an alternative measure of employee-friendly treatment (Edmans (2011), Bae, Kang, and Wang (2011), Faleye and Trahan (2011)). We obtain data on the Best Companies for the period between 1998, when *Fortune* first published this list, and 2010. We then combine the Best Companies list for year t with our sample from

RiskMetrics for year $t-1$. Our final Best Companies sample includes 435 firm-year observations after excluding private firms, nonprofit organizations, and cooperatives.

Table VI reports the results of logit regressions in which the dependent variable is an indicator that takes the value of one if a firm is included on the Best Companies list and zero otherwise. In column (1), we find that the coefficient estimate on *Family firm* is positive and significant at the 1% level after controlling for industry and year fixed effects. Controlling for an array of firm-specific variables does not change the results (column (2)). These findings confirm earlier results using *Employment Treatment Index* in Table III.

B. Propensity Score Matching

One potential concern for findings in Section II.B is that some omitted variables simultaneously affect both a firm's decision to adopt employee-friendly policies and firm value, resulting in a spurious correlation. To address the omitted variable bias problem, we employ propensity score matching that corrects for endogenous selection on observable variables. Following Smith and Todd (2005) and Bae, Kang, and Wang (2011), we use three matching techniques to find optimal matches -- nearest neighborhood, Gaussian kernel, and local linear regression -- and we drop the 2% of observations with the lowest propensity score density to improve the matching quality. The sample comprises family firms included on the Best Companies list from 1998 to 2010. We match each family firm on the list with a sample nonfamily firm not included on the Best Companies list. We calculate a propensity score by employing a probit model that uses as matching criteria assets, firm age, leverage, capex/assets, sales growth, Fama and French (1997) 48 industry dummies, and year dummies. We use bootstrapped standard errors based on 50 replications with replacement and report bias-corrected 95% confidence intervals.

Table VII reports the test of differences in firm value between family firms included on the Best Companies list and nonfamily firms not included on the Best Companies list. Consistent with the earlier results using the *Employee Treatment Index* and the *Management Treatment Index*, we find that Tobin's q (industry-adjusted Tobin's q) for family firms on the Best Companies list is on average 0.868 to 0.957 (0.825 to 0.919) percentage points higher than that for matching nonfamily firms. We also find that family firms on the list outperform relative to matching nonfamily firms when using ROA (industry-adjusted ROA). Our results do not change if we winsorize all matching firm characteristics at the 1% and 99% levels. The results further support the value creation hypothesis, alleviating the concern that some *observable* firm and industry characteristics may affect a firm's employee policies and in turn firm value.¹⁸

IV. Endogeneity Tests

In this section we perform several tests to mitigate potential endogeneity bias concerns inherent in our study. First, it is possible that our results are driven by the reverse causality problem. For example, to the extent that family firms perform better than nonfamily firms (Demsetz and Lehn (1985), Anderson and Reeb (2003), Fahlenbrach (2009), Li and Srinivasan (2011)), they may have more resources to invest in employee-friendly policies. In such a case, the causation goes from high performance of family firms to high *Employee Treatment Index* (*Management Treatment Index*), and not vice versa. To address the reverse causality issue, we conduct event studies using two unanticipated events, a firm's first-time inclusion on the Best Companies list and sudden deaths of executives, as natural experiments.

Second, it is possible that some *unobservable* omitted variables simultaneously affect both a firm's employee policies and firm value. To alleviate this concern, we employ 2SLS

¹⁸ Using a propensity score matching approach, we also compare the value of family firms not included on the Best Companies list and the value of nonfamily firms on the Best Companies list. Untabulated results show that the latter firms have higher value than the former firms, suggesting that it is not family firm status but employee treatment that drives our results.

regressions. This approach is also expected to alleviate the potential reverse causality problem discussed above.

Third, it is also plausible that some omitted variables could account for the association between the family firm status and a firm's decision to adopt employee-friendly policies. For example, it is possible that family members maintain the family firm status based on their assessment of firms' future prospects and this optimistic assessment of future performance induces family firms to invest more in employee relations. It is also possible that family firms' employee-oriented policies are a manifestation of their unobservable tendency to implement policies based on long-term business horizons. We mitigate this endogeneity concern by identifying 138 family firms that become nonfamily firms and examining whether the change in a firm's status from family to nonfamily firms affects its ability to invest in employee relations.

A. Announcement Returns for Inclusion on the Fortune's list of "Top 100 Best Companies to Work For"

As the first test to address reverse causality concern, we compare stock market responses in family and nonfamily firms when they are included on the Best Companies list for the first time. As Faleye and Trahan (2011) note, the annual publication of the Best Companies list provides an identifiable event date, which allows us to examine investors' reaction to the release of the list. The value creation hypothesis predicts the market reacts more positively when family firms are included on the list than when nonfamily firms are included since employee-friendly practices have a more beneficial effect on family firm value. Following Faleye and Trahan (2011), we assume that only the firm's first appearance on the list provides new information to the market. Of the 435 firm-year observations used in the test above, 101 are included on the Best Companies list for the first time.

Table VIII reports the results of regressions in which the dependent variable is the cumulative abnormal return (CAR) from one day before to one day after the release of the Best Companies list. To calculate abnormal returns we estimate a market model using days –280 to –61 relative to the news announcement. We use the equally-weighted CRSP index return as the market portfolio return. In column (1), we find that the coefficient estimate on *Family firm* is positive and significant at the 5% level, indicating that the market reacts more positively when family firms are included on the Best Companies list relative to nonfamily firms. In column (2), we find that the coefficient estimate on *Family firm* remains positive and significant after controlling for firm-specific characteristics. In column (3), we interact *Family firm* with R&D intensity, which measures a firm’s investment in firm-specific human capital. We find that the coefficient estimate on the interaction term is positive and significant at the 5% level, suggesting that the market response is more positive when family firms that require a higher level of investment in firm-specific human capital are included on the Best Companies list.

B. Market Valuation of Sudden Deaths of Executive Employees

To further address the reverse causality concern, in this subsection we conduct an event study using sudden deaths of top executives of family and nonfamily firms as natural experiments. This analysis also helps understand whether executive employees in family firms who possess high level of firm-specific information contribute to shareholder value.

The value creation hypothesis predicts that human capital is highly valued in family firms than in nonfamily firms and thus the market reaction to the sudden death of an executive employee should be more negative for family firms than for nonfamily firms. This prediction is consistent with Johnson et al. (1985), who argue that the negative market reaction to the sudden death of a top executive reflects the loss of firm-specific human capital that the deceased executive acquired.

To examine market reactions to sudden deaths of senior executives, we manually search various sources including newspaper articles and the Corporate Library database for executive death events. Following the definition of sudden death used in Nguyen and Nielsen (2010), we identify 85 sudden deaths (44 family firm executives and 41 nonfamily firm executives) that were unexpected by the market over the 1984 to 2012 period.¹⁹

Table IX reports the regression results. The dependent variable is the CAR from one day before to one day after the death date. We control for firm characteristics, executive-specific characteristics, and industry fixed effects using the Fama-French five industry classification.²⁰ We also include a *Takeover interest* indicator that takes the value of one if there are any rumors that the firm will be taken over after the death of the executive and zero otherwise. Finally, following Johnson et al. (1985), we measure the relative importance of the deceased executive's role in a firm using the proportion of his compensation to that of the top five executives for the full fiscal year before the time of the death.

In column (1), our key explanatory variable of interest is the indicator *Family firm executive*, which takes the value of one if the executive who suddenly died worked for a family firm and zero otherwise. We find that the coefficient estimate on *Family firm executive* is negative and significant at the 10% level. This finding suggests that the potential costs incurred by the loss of key talent are higher for family firms.

¹⁹ We expand our search for a sudden death of executives beyond our sample period and firms covered in RiskMetrics as it is a very rare event. There are 65 sudden deaths that occurred during our sample period 1996-2010. Using 65 sudden deaths in the analysis does not change the results. Nguyen and Nielsen (2010) provide detailed definitions of sudden deaths based on medical literature. To include deaths that are sudden and unexpected by the stock market, they exclude deaths in which the causes are attributed to cancer, complications from illness, past strokes, and surgery. Suicide events are also excluded from the sample because these deaths might be related to a firm's conditions that may affect the stock prices.

²⁰ Following Nguyen and Nielsen (2010), we use the Fama-French five industry classification to avoid the loss of too many degrees of freedom in estimating OLS regressions with a small sample size. However, for the rest of analyses in the paper, we use the Fama-French (1997) 48 industry classification. The Fama-French five industry classifications are available on Ken French's website (<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/>).

In column (2), we separate the indicator for *Family firm executive* into the indicators for *Founder executive* and *Nonfounder family firm executive*.²¹ We find that the coefficient estimate on *Founder executive* is negative but insignificant while the coefficient estimate on *Nonfounder family firm executive* is negative and significant at the 10% level, suggesting that the negative market reaction is confined to the deaths of nonfounder executives. Despite extensive discussion on the positive role of founders who are known to provide invaluable firm-specific expertise, our finding that the deaths of founders have little impact on the stock market reaction is not surprising given mixed results on market reactions to deaths of founders documented in prior studies. For example, in a study of 53 announcements of sudden executive deaths, Johnson et al. (1985) find a positive stock market reaction to the deaths of founders and a negative stock market reaction to the deaths of professional CEOs. In contrast, Salas (2010) finds that the stock price reaction is insignificant for deaths of founders but positive and significant for deaths of entrenched founders (i.e., founders that served at the firm at least 10 years). In untabulated test, we divide *family firm executives* into two dummy variables, *family member executive* and *nonfamily member executive* and find that the coefficient estimate on *family member executive* is insignificant while the coefficient estimate on *nonfamily member executive* is negative and significant at the 5% level.

In column (3), we include the interaction term between *Family firm executive* and the *Employee Treatment Index* and find that the coefficient estimate on the interaction term is negative and significant at the 5% level. This result suggests that the negative market reaction to the death of key talent in family firms is more pronounced when family firms invest more in employee policies.

In column (4), we include the interaction term between *Family firm* and the ratio of a deceased executive's compensation to that of the top-five executives and find that the

²¹ We use 26 sudden deaths of founder executives and 18 sudden deaths of nonfounder executives in the analysis.

coefficient estimate on the interaction term is negative and significant at the 5% level.²² The result support the value creation hypothesis, which predicts that executive employees in family firms who play a more influential role in strategic decision-making make a significant contribution to firm value.

Overall, the results in this subsection support the value creation hypothesis and suggest that executive employees in family firms possess highly valuable firm-specific knowledge as a result of firms' investment in employee relations and thus make a greater contribution to firm value. Thus, the shareholder value loss around deaths of executive employees is greater in family firms than in nonfamily firms, reflecting family firms' higher sunk costs associated with their heavy investments in nurturing the core talent and/or uncertainties associated with difficulty in replacing their valuable deceased executives with new executives.

C. 2SLS

To alleviate the concern that some omitted unobservable variables affect both a firm's employee policies and firm value and to further mitigate the reverse causality concern, we employ 2SLS regressions. We use two variables as instrumental variables. The first instrumental variable is industry-level wage rate as measured by the aggregate labor and related expenses divided by total number of employees of firms in the same industry (Bae, Kang, and Wang (2011)).²³ Industry-level wage rate satisfies the relevance requirement of instrument variables since firms in industries with a higher level of wage rate are likely to treat their employees better. Thus, the industry-level wage rate is more likely to be positively related to a

²² Johnson et al. (1985) find that the market reaction to the deaths of executives is negatively associated with the relative importance of the role as measured by their compensation level relative to other officers.

²³ Bae, Kang, and Wang (2011) also use an individual firm's 5-year (10-year) lagged value of pension and retirement expenses per worker as another instrument variable. However, these variables are missing for many of our sample firms, prohibiting us to use them as our instrument variable.

firm's *Employee Treatment index*. It also meets the exclusion condition of instrumental variables because the industry-based measure is less likely to have an effect on firm value.

Our second instrumental variable is. the proportion of the number of Best Companies in a firm's industry as measured by the number of firms included on the Best Companies List divided by the total number of firms in the same industry. Although both the Best Companies List and KLD ratings measure the level of a firm's employee-friendliness, they are determined independently. Thus, to the extent that firms in industries with a higher proportion of Best Companies treat their employees better, the proportion of Best Companies in the same industry and a firm's *Employee Treatment index* are likely to be highly correlated. However, it is unlikely that this proportion has any effect on firm value.

Table X reports the results. In the first-stage regression (column (1)), we regress the *Employee Treatment Index* on two instrumental variables and other control variables used in Table IV to obtain the predicted value of the *Employee Treatment Index*. As expected, we find that the coefficient estimates on both instrumental variables are positive and significant at the 1% level. In untabulated tests, we find that the p -value for the Cragg and Donald (1993) instrument relevance test is significant at the 1% level, confirming the relevance of our instrumental variables.

In the second-stage regression (column (2)), we regress the fitted value of the *Employee Treatment Index* and other control variables on Tobin's q . We find that the coefficient estimate on *Predicted Employee Treatment Index* is negative but insignificant and the coefficient estimate on its interaction with *Family firm* is positive and significant at the 1% level. The test of overidentifying restrictions suggests that our two instrumental variables pass the Sargan (1958) overidentification test (not reported). In column (3), in which the dependent variable is industry-adjusted Tobin's q , we obtain similar results.

Overall, these results suggest that our results in Section II.B are robust to controlling for omitted variables bias problems.

D. Change in Employee Treatment around Change in Family Firm Status

In this subsection we use a subsample of family firms that become nonfamily firms to control for the possibility that time-invariant characteristics jointly affect the family firm status and a firm's ability to implement employee-friendly policies.

We identify 138 unique family firms that went through the transition during our sample period. Table XI reports the results of estimates of regressions in which the dependent variable is the *Employee Treatment Index* in column (1) and the *Management Treatment Index* in column (2). Our key variable of interest is *Family firm status change* that takes the value of one if the family firms become nonfamily firms and zero otherwise. We do not include the transition years (i.e., one year before and after the status change) to avoid potential biases derived during the transition period. In column (1), we find the coefficient estimate on *Family firm status change* is negative and significant at the 5% level, after controlling for firm-level characteristics and firm-fixed effects. In column (2), the coefficient estimate on *Family firm status change* is negative and significant at the 1% level. The results suggest that firms are less likely to maintain their investments in employee-friendly programs after their transition to nonfamily firms from family firms.

Our analysis using family firms that become nonfamily firms may not fully address the endogeneity concern since a firms' decision to change its form of organization is also endogenously determined. Nevertheless our finding that family firms treat their employees better than nonfamily firms does not seem to be driven by omitted variables that affect a firm's choice of its organization type and its employee policies.

In sum, due to the limitations of our analyses, we are not able to entirely rule out endogeneity concerns. Nevertheless, the totality of evidence points to the conclusion that endogeneity problems are unlikely to drive the findings documented in this study.

V. Additional Analysis

In this section we perform several additional tests to provide further supporting evidence on the value creation hypothesis and consider other alternative arguments that may account for our findings.

A. Impact of Employee Treatment on the Value of Founder versus Nonfounder CEO Family Firms

In this subsection we examine the differential impact of employee-friendly policies on founder versus nonfounder CEO family firms. The value creation hypothesis predicts that greater investments in firm-specific human capital by family firms and the positive effect of the investments on firm value are more pronounced in nonfounder (descendent or outsider) CEO family firms than in founder CEO firms. Family firms managed by nonfounder CEOs tend to face unstable leadership due to the founder's declining influence or their absence. Nonfounder CEOs may also lack entrepreneurship and managerial talent to maintain the firm's growth momentum. Thus, nonfounder CEO family firms may have greater incentives to actively seek employee-friendly policies to induce employee trust and loyalty that are essential to sustain the founder's legacy. To test this prediction, we divide family firms into founder CEO and nonfounder CEO firms and repeat the regressions in Tables III and IV, respectively.

The results are reported in Table XII. In columns (1) and (2), we repeat the OLS regressions in Table III, where the dependent variables are the *Employee Treatment Index* and

the *Management Treatment Index*, respectively. We find that consistent with the value creation hypothesis, the coefficient estimates on *Founder CEO* are insignificant while the coefficient estimates on *Nonfounder CEO* are positive and significant in both columns.

In next four columns, we repeat the OLS regressions in Table IV, where the dependent variable is Tobin's q in columns (3) and (4) and industry-adjusted Tobin's q in columns (4) and (5). In columns (3) and (4), we find that the positive effect of the interaction between *Family firm* and *Employee Treatment Index (Management Treatment Index)* observed in Table IV is confined to the firms with nonfounder CEOs. The results are similar in columns (5) and (6) when we use industry adjusted Tobin's q as a dependent variable.

In untabulated tests, we repeat our earlier analyses in Tables VI and VIII by dividing *Family firm* into the indicators *Founder CEO* and *Nonfounder CEO*. In both tables, we find that the coefficient estimates on *Founder CEO* are positive and insignificant while those on *Nonfounder CEO* are positive and significant at the 10% level.

Overall, the results in this subsection support the value creation hypothesis that the adoption of employee-friendly policies is especially beneficial to nonfounder CEO firms. Family firms with nonfounder CEOs make a greater investment in firm-specific human capital than those with founder CEOs, which leads to higher incremental benefits to nonfounder CEO firms.

B. Likelihood of Selecting the CEO from Internal Talent Pool

Thus far, our results suggest that compared with nonfamily firms, family firms exert more effort to recruit and retain a prestigious top executive team. We also find that executive employees in family firms have more discretionary power to influence a firm's decision-making process, and that the loss of long-serving key executives who possess greater firm-specific human capital is more costly to family firms.

In this subsection we examine whether the importance of human capital in family firms influences their decision to select the CEO from the internal labor pool. Shleifer and Summers (1988) emphasize that stakeholder trustworthiness cannot be obtained without managers whom stakeholders trust. They suggest that the appointment of descendants of the founding family or long-serving executives from inside the company signals the firm's commitment to fulfilling its implicit contracts with employees, as such appointments indicate the continuation of the firm's current policies. On the other hand, the arrival of outsiders would signal a drastic policy shift and thus increase stakeholders' uncertainty. Supporting this view, prior studies show that long-serving executives who share a firm culture rooted in trust are better qualified to implement firms' stakeholder-oriented policies. For example, Parrino (1997) argues that candidates for the CEO position who have spent much of their careers at the firm possess more firm-specific human capital and thus are more likely to maintain the firm's current policies than external candidates. Naveen (2006) also argues that compared to a new CEO brought in from outside the firm, an internally promoted CEO (relay succession) has more expertise about a firm's products, customers, competitors, and employees. Thus, the value creation hypothesis predicts that, family firms are more likely to promote internal candidates to the CEO position than nonfamily firms.²⁴

Table XIII reports results from logit regressions in which the dependent variable is an indicator that takes the value of one if a firm has a relay succession and zero otherwise. Following Naveen (2006), we consider a firm as having a relay succession plan in a given year if it has a president or COO (Chief Operating Officer) who is distinct from the CEO or

²⁴ Alternatively, family firms may use a relay succession plan to provide nonfamily executives with promotion-based tournament incentives. In untabulated tests, we follow Kale, Reis, and Venkateswaran (2009) and use variables measuring tournament incentives among top-level officials as alternative measures of promotion incentives. Kale, Reis, and Venkateswaran (2009) show that higher compensation inequality is associated with greater tournament incentives. Although we find that the total compensation gap between the CEO and the other top executives is significantly lower in family firms than in nonfamily firms, the standard deviation of the total compensation of non-CEO top executives (which measures tournament incentives among potential CEO candidates) is greater in family firms than in nonfamily firms.

chairman and is not older than the CEO or chairman. In column (1), we find that the coefficient estimate on *Family firm* is positive and significant at the 1% level, supporting the view that family firms are more likely to groom in-house successors to minimize replacement costs. To alleviate the concern that the prevalence of relay successions among family firms is largely due to family member successions, in column (2) we exclude from the 2,121 firm-year observations with a relay succession plan the 249 observations in which the heir apparent is a family member. Our results do not change after excluding such cases.

C. Alternative Argument for Family Firms' Better Employee Treatment

Our finding that family firms treat their employee better than nonfamily firms is also consistent with an alternative argument that family owners overinvest in employee benefits to improve their prestige and public recognition or to establish cozy relations with employees. Supporting this view, Bertrand and Mullainathan (2003) find that managers insulated from hostile takeover threats pay higher worker wages and avoid tough decisions that may cause conflicts with employees. Cronqvist et al. (2009) find that entrenched CEOs pay higher wages to workers in exchange for nonpecuniary private benefits (e.g., reduced effort in wage bargaining). This alternative argument predicts that the overinvestment in employee friendly policies is associated with lax supervision of employees, resulting in decreases in a firm's operational efficiency and employee productivity, and thus lower firm value. Our empirical evidence, however, is not consistent with the predictions.

VI. Summary and Conclusion

Prior literature focuses on the unique agency problems inherent in family firms in examining the impact of family control on firm value. In this paper we extend prior literature by examining stakeholder relations with employees as an important channel through which

family firms achieve their objectives while maximizing other shareholders' wealth. We propose the value creation hypothesis that family owner-managers' abilities to adopt employee-friendly policies add value. Our results strongly support the value creation hypothesis.

More specifically, we find that compared with nonfamily firms, family firms treat their employees better (as measured by the *Employee Treatment Index*) and they achieve higher firm value and employee productivity. Moreover, we find that on average executive employees in family firms possess greater decision-making power, serve longer, and are more highly skilled (as measured by the *Management Treatment Index*), which contributes to higher family firm value.

The positive relation between a firm's treatment of employees and firm value is also evident when we use *Fortune's* "100 Best Companies to Work For" as an alternative measure of employee-friendly policies. We find family firms are more likely to be included on the Best Companies list. Using propensity score matching methods, we further find that the value of family firms included on the Best Companies list is higher than that of matching nonfamily firms not included on the Best Companies list.

Our key results are robust to controlling for potential endogeneity problems including reverse causality and omitted variables biases. We find that the market reacts more positively when family firms are included on the Best Companies list relative to nonfamily firms. In addition, we find that the market reaction to the death of a senior executive is more negative for family firms than for nonfamily firms, suggesting that the costs resulting from the loss of key talent are greater for shareholders in family firms than those in nonfamily firms. The results using 2SLS regressions show that our findings for the positive relation between the *Employee Treatment Index* and firm value are less likely to be affected by the endogeneity problem than some unobservable omitted variables jointly affect both a firm's employee policies and firm

value. Moreover, we find that firms are less likely to maintain their investments in employee-friendly policies after transition to nonfamily firms from family firms.

We also find that the incremental benefits of employee-friendly treatment on firm value are greater for nonfounder CEO family firms than for founder CEO firms. While prior studies find that family firms tend to underperform in the absence of the founders, our findings suggest that strong employee relations could help nonfounder CEO family firms make up for the loss of key talent and maintain their growth beyond the start-up stage.

Finally, we examine whether family firms' employee friendly policies influence their decision to select the CEO. We find that family firms are more likely to promote internal candidates to the CEO position than nonfamily firms, further supporting the value creation hypothesis.

Taken together, our results suggest that family owner-managers effectively use employee-friendly policies as an important tool to align their interests with those of other stakeholders and these policies are beneficial to firm value. Our study therefore highlights the importance of stakeholder-oriented policies as an important source of family firm value creation and how family owner-managers who aspire to establish a good corporate reputation to achieve their long-term survival utilize such policies.

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Table I
Sample Distribution

The sample consists of 17,052 firm-year observations covered in RiskMetrics during the period 1996 to 2010. Our initial sample includes all firms covered in RiskMetrics. We restrict our sample to those firms whose stock returns and financial data are available in CRSP and Compustat, respectively. We also exclude firms in regulated industries (SIC codes between 4900 and 4999 and between 6000 and 6999). Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the construction of the variables.

Panel A: Sample distribution by year

Year	Full sample	Family firms		Nonfamily firms	
	Sample size	Sample size	%	Sample size	%
1996	1,004	377	37.55	627	62.45
1997	1,148	470	40.94	678	59.06
1998	1,308	544	41.59	764	58.41
1999	1,315	553	42.05	762	57.95
2000	1,288	546	42.39	742	57.61
2001	1,337	565	42.26	772	57.74
2002	1,086	431	39.69	655	60.31
2003	1,095	425	38.81	670	61.19
2004	1,095	429	39.18	666	60.82
2005	1,079	421	39.02	658	60.98
2006	1,035	391	37.78	644	62.22
2007	1,015	377	37.14	638	62.86
2008	1,067	376	35.24	691	64.76
2009	1,096	383	34.95	713	65.05
2010	1,084	371	34.23	713	65.77
Total	17,052	6,659	39.05	10,393	60.95

Panel B: Sample distribution by industry (two-digit SIC code)

Industries	Full sample	Family firms		Nonfamily firms	
	Sample size	Sample size	%	Sample size	%
Agriculture, forestry, and fishing (01-09)	43	11	25.58	32	74.42
Mining and construction (10-17)	1,028	365	35.51	663	64.49
Manufacturing (20-39)	9,510	3,462	36.40	6,048	63.60
Transportation and Communications (40-48)	1,020	421	41.27	599	58.73
Wholesale and retail trade (50-59)	2,553	1,154	45.20	1,399	54.80
Services (70-89)	2,898	1,229	42.41	1,669	57.59
Total	17,052	6,642	38.95	10,410	61.05

Table II
Summary Statistics

In Panel A, the sample consists of 17,052 firm-year observations covered in RiskMetrics during the period 1996 to 2010. Our initial sample includes all firms covered in RiskMetrics. We restrict our sample to firms with stock returns and financial data available in CRSP and Compustat, respectively. We also exclude firms in regulated industries (SIC codes between 4900 and 4999 and between 6000 and 6999). In Panel B, we further restrict our sample to firms that are covered both in RiskMetrics and ExecuComp databases. Following Bebchuk, Cremers, and Peyers (2011), we exclude firms that report compensation for fewer than five executives. When ExecuComp reports more than five executives for a firm, we use only the five executives with the highest compensation to ensure that our analysis is comparable across firms. In computing the CEO pay slice, variables that require the information about the CEO compensation, we further restrict our sample to firm-years in which the CEO was in office for the whole year (CEOANN). Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. Founder CEO firms are family firms in which the founder serves as CEO. Nonfounder CEO firms are family firms in which either the descendant of the founder or the professional manager serves as CEO. The Appendix provides detailed descriptions of the construction of the variables. ***, **, and * indicate that the mean differences between columns (3) and (5) and the median differences between columns (4) and (6) are significant at the 1%, 5%, and 10% levels, respectively.

Panel A. Firm characteristics

	All firms		Family firms (A)		Nonfamily firms (B)		(3)-(5)	(4)-(6)
	Mean	Median	Mean	Median	Mean	Median		
	(1)	(2)	(3)	(4)	(5)	(6)		
Firm Characteristics								
Total assets (\$ billions)	4.614	1.176	3.587	1.021	5.272	1.303	-1.685***	-0.282***
R&D/sales	0.048	0.003	0.047	0.000	0.048	0.007	-0.001	-0.007***
Leverage	0.215	0.205	0.198	0.172	0.226	0.220	-0.028***	-0.048***
Firm age	26.407	20.000	23.082	18.000	28.538	22.000	-5.456***	-4.000***
Capital expenditure/assets	0.061	0.044	0.064	0.045	0.058	0.043	0.006***	0.002***
ROA	0.146	0.143	0.148	0.145	0.144	0.142	0.004	0.003***
Tobin's <i>q</i>	2.163	1.627	2.288	1.693	2.082	1.589	0.206***	0.104***
Sales growth	0.133	0.087	0.154	0.100	0.120	0.079	0.034***	0.021***
Market-to-book	3.128	2.259	3.183	2.282	3.093	2.250	0.090*	0.032*
Volatility	0.026	0.023	0.027	0.024	0.026	0.023	0.001***	0.001***
Diversify (indicator)	0.929	1.000	0.919	1.000	0.935	1.000	-0.016***	0.000***
Institutional blockholder (indicator)	0.686	1.000	0.666	1.000	0.700	1.000	-0.034***	0.000***
Board size	9.022	9.000	8.932	9.000	9.080	9.000	-0.148***	0.000***
Independent board (indicator)	0.795	1.000	0.675	1.000	0.871	1.000	-0.196***	0.000***
Family Firm Characteristics								
Family firm (indicator)	0.391	0.000	1.000	1.000	;	;	;	;
Founder CEO (indicator)	;	;	0.379	0.000	;	;	;	;

Panel B. Employee Treatment Characteristics

Nonexecutive Employee Treatment Characteristics

Employee Treatment Index	-0.035	0.000	-0.035	0.000	-0.034	0.000	-0.001	0.000
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Executive Employee Treatment Characteristics

Components of Management Treatment Index:

1. Relative Importance of CEOs and Non-CEO Top Executives

Management Treatment Index	4.813	5.000	5.226	5.000	4.545	4.000	0.681***	1.000***
CEO is chair of the board (indicator)	0.607	1.000	0.578	1.000	0.626	1.000	-0.048***	0.000***
CEO is the sole insider (executive officer) on the board (indicator)	0.218	0.000	0.097	0.000	0.295	0.000	-0.198***	0.000***
CEO accumulates both the titles of chairman and president (indicator)	0.450	0.000	0.375	0.000	0.499	0.000	-0.124***	0.000***
CEO pay slice	0.376	0.376	0.351	0.345	0.391	0.393	-0.040***	-0.048***

2. Top Executives' Job Security

Median tenure (Firm-age adjusted median tenure) of the management team members excluding family members	11.476 (0.000)	9.000 (-1.419)	12.113 (1.129)	10.000 (-0.228)	11.089 (-0.684)	9.000 (-2.100)	1.024*** (1.813)	1.000*** (1.872)
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3. Top Executives' Prestige

Reputation in Business Community

Proportion of certified inside directors on the board	0.072	0.000	0.111	0.100	0.046	0.000	0.065***	0.100***
Executives who serve as trustees of nonprofit institutions	0.018	0.000	0.019	0.000	0.017	0.000	0.002**	0.000**
Proportion of interlocking directors on the board	0.007	0.000	0.009	0.000	0.006	0.000	0.003***	0.000***

Educational Level and Prior Work Experience

Executives who are ivy league graduates	0.104	0.000	0.117	0.000	0.096	0.000	0.021***	0.000***
Executives who have an MBA degree	0.115	0.000	0.104	0.000	0.122	0.000	-0.018***	0.000***
Executives who hold a JD degree	0.023	0.000	0.025	0.000	0.021	0.000	0.004***	0.000***
Executives who hold a Ph.D. degree	0.033	0.000	0.039	0.000	0.030	0.000	0.009***	0.000***
Executives who are former government officials	0.046	0.000	0.053	0.000	0.041	0.000	0.012***	0.000***
Executives who are former partners in law or accounting firms	0.010	0.000	0.012	0.000	0.010	0.000	0.002*	0.000***
Executives who are former senior officers in other firms	0.090	0.000	0.069	0.000	0.103	0.000	-0.034***	0.000***
Executives who are CPA	0.031	0.000	0.033	0.000	0.030	0.000	0.003**	0.000**

Table III
Determinants of Firms' Employee Treatment

The table presents estimates of OLS regressions in which the dependent variables are the *Employee Treatment Index* computed by summing up the indicator variables for six strengths and four concerns in employee relations from the KLD database (columns (1) and (2)) and the *Management Treatment Index* created by summing up 16 indicator variables for a firm's policies towards executive employees (columns (3) and (4)): executive employees' decision making power, job security, and reputation (i.e., visibility in the business community, education level, and relevant work experience), respectively. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the construction of the variables. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Employee Treatment Index		Management Treatment Index	
	(1)	(2)	(3)	(4)
Family firm (indicator)	0.074* (0.074)	0.070* (0.082)	0.649*** (0.000)	0.616*** (0.000)
Log (assets)		0.047** (0.018)		0.104*** (0.002)
Leverage		-0.249** (0.033)		-0.791*** (0.000)
R&D/sales		1.863*** (0.000)		1.518*** (0.001)
Log (firm age)		-0.051* (0.067)		-0.001 (0.984)
Capital expenditure/assets		0.334 (0.367)		0.637 (0.355)
ROA		1.324*** (0.000)		0.839** (0.028)
Diversify (indicator)		-0.048 (0.367)		0.118 (0.351)
Sales growth		-0.091** (0.036)		-0.366*** (0.000)
Market-to-book		-0.001 (0.854)		0.013 (0.114)
Return volatility		0.218 (0.887)		-9.015*** (0.002)
Institutional blockholder (indicator)		0.001 (0.984)		-0.185*** (0.008)
Board size		0.002 (0.854)		0.219*** (0.000)
Independent board (indicator)		0.071* (0.067)		-0.421*** (0.000)
Constant	0.051 (0.862)	-0.517 (0.112)	4.021*** (0.000)	1.568*** (0.002)
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Number of observations	11,903	11,671	16,684	16,182
Adjusted R^2	0.124	0.153	0.042	0.128

Table IV
Impacts of Family Control and Employee Treatment on Firm Value (Tobin's q)

The table presents estimates of OLS regressions in which the dependent variable is Tobin's q in columns (1), (2), and (3) and industry-adjusted Tobin's q in columns (4), (5), and (6). The sample consists of 17,052 firm-year observations covered in RiskMetrics during the period 1996 to 2010. Our initial sample includes all firms covered in RiskMetrics. We restrict our sample to firms with stock returns and financial data available in CRSP and Compustat, respectively. We also exclude firms in regulated industries (SIC codes between 4,900 and 4,999 and between 6000 and 6999). Industry-adjusted Tobin's q is computed by subtracting the median Tobin's q for a sample firm's Fama and French (1997) 48 industry from the sample firm's raw Tobin's q . Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the construction of the variables. The p -values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Tobin's q			Industry-adjusted Tobin's q		
	(1)	(2)	(3)	(4)	(5)	(6)
Family firm (indicator): a	0.091*** (0.009)	0.095** (0.011)	-0.143* (0.088)	0.099*** (0.004)	0.104*** (0.005)	-0.080 (0.352)
Employee Treatment Index: b		0.020 (0.203)			0.021 (0.177)	
Management Treatment Index: c			0.019** (0.032)			0.014 (0.118)
a×b		0.061** (0.044)			0.060** (0.048)	
a*c			0.038** (0.020)			0.033** (0.048)
Log (assets)	0.017 (0.303)	0.020 (0.248)	0.015 (0.417)	0.021 (0.172)	0.015 (0.353)	0.024 (0.194)
R&D/sales	4.313*** (0.000)	3.757*** (0.000)	4.761*** (0.000)	3.634*** (0.000)	2.889*** (0.000)	4.016*** (0.000)
Leverage	-0.690*** (0.000)	-0.794*** (0.000)	-0.727*** (0.000)	-0.646*** (0.000)	-0.761*** (0.000)	-0.712*** (0.000)
Log (firm age)	-0.066*** (0.005)	-0.086*** (0.002)	-0.088*** (0.001)	-0.069*** (0.003)	-0.070*** (0.008)	-0.098*** (0.000)
Capital expenditure/assets	-0.678** (0.045)	-1.642*** (0.000)	-1.090*** (0.007)	-0.678** (0.011)	-1.525*** (0.000)	-1.114*** (0.001)
ROA	6.295*** (0.000)	7.170*** (0.000)	6.711*** (0.000)	6.068*** (0.000)	6.902*** (0.000)	6.436*** (0.000)
Diversify (indicator)	-0.101 (0.115)	-0.106 (0.145)	-0.092 (0.202)	-0.127** (0.048)	-0.117 (0.109)	-0.107 (0.148)
Sales growth	0.245*** (0.000)	0.125* (0.063)	0.442*** (0.001)	0.241*** (0.000)	0.102 (0.123)	0.476*** (0.001)
Return volatility	2.053 (0.123)	2.393 (0.141)	3.293** (0.033)	2.556* (0.059)	3.060* (0.065)	4.262*** (0.007)
Institutional blockholder (indicator)	-0.008 (0.789)	-0.030 (0.354)	-0.013 (0.731)	-0.004 (0.907)	-0.031 (0.374)	-0.007 (0.853)
Board size	-0.006 (0.470)	-0.015* (0.091)	-0.017* (0.050)	-0.005 (0.548)	-0.014 (0.105)	-0.017* (0.066)
Independent board (indicator)	0.043 (0.241)	0.042 (0.387)	0.050 (0.297)	0.034 (0.358)	0.041 (0.407)	0.047 (0.329)
Constant	1.989*** (0.000)	1.628*** (0.000)	1.963*** (0.000)	-0.477*** (0.000)	-0.367** (0.016)	-0.442*** (0.005)
Year fixed effects	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	N	N	N
Number of observations	16,490	11,660	16,148	16,491	11,661	16,145
Adjusted R^2	0.375	0.432	0.262	0.285	0.345	0.196

Table V
Impacts of Family Control and Employee Treatment on Employee Productivity

The table presents estimates of OLS regressions in which the dependent variable is a firm's total factor productivity in columns (1) and (2) and the log of sales per employee in columns (3) and (4). The sample consists of 17,052 firm-year observations covered in RiskMetrics during the period 1996 to 2010. Our initial sample includes all firms covered in RiskMetrics. We restrict our sample to firms with stock returns and financial data available in CRSP and Compustat, respectively. We also exclude firms in regulated industries (SIC codes between 4,900 and 4,999 and between 6000 and 6999). We measure a firm's total factor productivity as the residual of annual industry-specific Cobb-Douglas production functions estimated by regressing the log of sales on the log of the number of employees and the log of net property, plant, and equipment for each Fama and French (1997) 48 industry. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the construction of the variables. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Total factor productivity		Log (sales per employee)	
	(1)	(2)	(3)	(4)
Family firm (indicator): a	-0.026 (0.385)	-0.005 (0.874)	-0.025 (0.339)	-0.009 (0.755)
Employee Treatment Index: b		0.082*** (0.000)		0.072*** (0.000)
a×b		0.047** (0.045)		0.043** (0.041)
Log (assets)	0.123*** (0.000)	0.133*** (0.000)	0.109*** (0.000)	0.117*** (0.000)
R&D/sales	0.640*** (0.000)	0.594*** (0.005)	0.382*** (0.010)	0.368* (0.053)
Leverage	0.009 (0.914)	0.064 (0.515)	-0.084 (0.268)	-0.045 (0.608)
Log (firm age)	-0.140*** (0.000)	-0.155*** (0.000)	-0.120*** (0.000)	-0.134*** (0.000)
Capital expenditure/assets	-0.442 (0.147)	-0.693* (0.071)	-1.275*** (0.000)	-1.558*** (0.000)
Diversify (indicator)	-0.088* (0.073)	-0.070 (0.238)	-0.073* (0.098)	-0.055 (0.301)
Sales growth	0.101*** (0.000)	0.175*** (0.000)	0.096*** (0.000)	0.169*** (0.000)
Market-to-book	0.016*** (0.000)	0.015*** (0.000)	0.016*** (0.000)	0.016*** (0.000)
Return volatility	2.265** (0.034)	3.659*** (0.003)	2.057** (0.031)	3.196*** (0.003)
Institutional blockholder (indicator)	0.066** (0.018)	0.081*** (0.008)	0.055** (0.027)	0.067** (0.013)
Board size	-0.010 (0.108)	-0.010 (0.166)	-0.008 (0.140)	-0.007 (0.256)
Independent board (indicator)	0.039 (0.117)	0.071** (0.021)	0.040* (0.077)	0.072*** (0.009)
Constant	-0.252 (0.424)	-0.451 (0.283)	5.183*** (0.000)	5.021*** (0.000)
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Number of observations	16,387	11,604	16,387	11,604
Adjusted R^2	0.489	0.533	0.449	0.498

Table VI
Likelihood of Firms' Inclusion on Fortune's List of "Top 100 Best Companies to Work For"

The table presents estimates of logit regressions in which the dependent variable takes the value of one if a firm is included on *Fortune's* list of "100 Best Companies to Work For" and zero otherwise. We obtain the complete list for the period between 1998, when *Fortune* first published its "100 Best Companies to Work For" list, and 2010. We next combine the Fortune list for year t with our sample from RiskMetrics for year $t-1$. We identify 435 firm-year observations on the Fortune list after excluding private firms, nonprofit organizations, and cooperatives. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The p -values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Indicator for a firm's inclusion on Best Companies List	
	(1)	(2)
Family firm (indicator)	0.618*** (0.009)	0.656*** (0.010)
Log (assets)		0.772*** (0.000)
R&D/sales		4.270*** (0.000)
Leverage		-2.394** (0.032)
Log (firm age)		-0.552*** (0.000)
Capital expenditure/assets		2.960 (0.285)
ROA		6.112*** (0.000)
Diversify (indicator)		-0.210 (0.680)
Sales growth		-1.421*** (0.000)
Market-to-book		0.019 (0.406)
Return volatility		-18.861* (0.099)
Institutional blockholder (indicator)		-0.076 (0.729)
Board size		0.056 (0.232)
Independent board (indicator)		0.225 (0.506)
Constant	-18.784*** (0.000)	-25.368*** (0.000)
Year fixed effects	Y	Y
Industry fixed effects	Y	Y
Number of observations	13,148	12,774
Pseudo R^2	0.071	0.245

Table VII
Test of Differences in Firm Performance between Family Firms Included on Fortune's List of "100 Best Companies to Work For" and Matching Nonfamily Firms That are not in the list: Using Propensity Score Matching Approach

The table presents the test of the difference in firm performance between family firms included in *Fortune's* list of "100 Best Companies to Work For" and matching nonfamily firms in RiskMetrics that are not included on the list. The sample includes RiskMetrics family firms that are included in the list from 1998 to 2010. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. We match each family firm in the list with a nonfamily firm that is not included in the list using the nearest neighborhood, Gaussian Kernel, local linear regression matching approaches. The variables we use in matching are assets, firm age, leverage, capex/assets, sales growth, Fama and French (1997) 48 industry dummies, and year dummies. Industry-adjusted Tobin's q (ROA) is computed by subtracting the median Tobin's q (ROA) for a sample firm's Fama and French (1997) 48 industry from the sample firm's raw Tobin's q (ROA). Bootstrapped standard errors are based on 50 replications with replacement. The p -values are in parentheses. Bias-corrected 95% confidence intervals are in brackets.

Variables	Nearest neighborhood	Gaussian Kernel	Local linear regression
Tobin's q	0.868 (0.00) [0.542, 1.193]	0.957 (0.00) [0.711, 1.204]	0.900 (0.00) [0.658, 1.143]
Industry-adjusted Tobin's q	0.825 (0.00) [0.515, 1.135]	0.919 (0.00) [0.675, 1.164]	0.866 (0.00) [0.626, 1.107]
ROA	0.036 (0.00) [0.016, 0.056]	0.038 (0.00) [0.026, 0.051]	0.033 (0.00) [0.021, 0.046]
Industry-adjusted ROA	0.030 (0.00) [0.010, 0.049]	0.033 (0.00) [0.020, 0.045]	0.028 (0.00) [0.015, 0.041]

Table VIII
OLS Regressions of Cumulative Abnormal Returns (-1, 1) around Firms' Inclusion on Fortune's List of "Top 100 Best Companies to Work For"

We obtain the *Fortune's* list of "100 Best Companies to Work For" for the period between 1998, the year *Fortune* published its first list, and 2010. We next combine the *Fortune* list for year t with firms covered in RiskMetrics for year $t-1$. We identify 101 firm-year observations included in the list for the first time after filtering out private firms, nonprofit organizations, and cooperatives. The dependent variable is the cumulative abnormal return (CAR) from one day before to one day after the list is released. To calculate abnormal returns, we use a market model where we estimate the parameters using days -280 to -61 relative to the announcement date of the list. The equally weighted CRSP returns are used as the market portfolio returns. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the construction of the variables. The p -values in parentheses are based on standard errors adjusted for heteroskedasticity. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	(1)	(2)	(3)
Family firm (indicator): a	0.016** (0.035)	0.017** (0.039)	-0.001 (0.903)
R&D/sales: b		0.056 (0.329)	-0.043 (0.518)
a×b			0.271** (0.010)
Log (assets)		0.004 (0.171)	0.004 (0.126)
ROA		0.035 (0.368)	0.030 (0.417)
Leverage		-0.029 (0.266)	-0.036 (0.152)
Log (firm age)		-0.000 (0.932)	-0.000 (0.988)
Constant	0.000 (0.934)	-0.038 (0.147)	-0.033 (0.201)
Number of observations	101	101	101
Adjusted R^2	0.035	0.056	0.111

Table IX
OLS Regressions of Cumulative Abnormal Returns (-1, 1) around Deaths of Executives
in Family and Nonfamily Firms on Explanatory Variables

The sample consists of 85 sudden deaths of executives for the period 1984-2012. The dependent variable is the cumulative abnormal return (CAR) from one day before to one day after the death of top executives. To calculate abnormal returns, we use a market model, where we estimate the parameters using days -280 to -61 relative to the death date. The equally weighted CRSP returns are used as the market portfolio returns. The Appendix provides detailed descriptions of the construction of the variables. We control for industry fixed effects using Fama and French's five industry classification. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	(1)	(2)	(3)	(4)
Family firm executive (indicator): a	-0.025* (0.096)		-0.035* (0.067)	0.014 (0.546)
Founder executive (indicator)		-0.018 (0.348)		
Nonfounder family firm executive(indicator)		-0.030* (0.061)		
Employee Treatment Index: b			-0.001 (0.834)	
Ratio of a deceased executive's pay to the aggregate compensation of top 5 executives: :c	0.030 (0.484)	0.036 (0.399)	0.114** (0.025)	0.132** (0.014)
a*b			-0.034** (0.014)	
a*c				-0.167** (0.019)
R&D/sales:	0.304 (0.133)	0.292 (0.137)	0.507** (0.048)	0.349* (0.066)
Executive is CEO (indicator)	0.001 (0.941)	-0.000 (0.994)	-0.002 (0.902)	-0.008 (0.557)
Log (executive age)	0.055 (0.164)	0.047 (0.268)	0.038 (0.510)	0.048 (0.197)
Log (assets)	-0.004 (0.299)	-0.004 (0.358)	-0.004 (0.381)	-0.004 (0.308)
Market-to-book	-0.003 (0.390)	-0.003 (0.388)	0.002 (0.532)	-0.004 (0.267)
ROA	0.062 (0.487)	0.051 (0.570)	0.198 (0.205)	0.113 (0.178)
Takeover interest (indicator)	0.031 (0.239)	0.026 (0.344)	0.003 (0.924)	0.059** (0.031)
Constant	-0.186 (0.261)	-0.158 (0.384)	-0.161 (0.513)	-0.186 (0.246)
Industry fixed effects	Y	Y	Y	Y
Number of observations	85	85	49	85
Adjusted R ²	0.007	0.015	0.067	0.050

Table X
Impacts of Family Control and Employee Treatment on Firm Value: Instrumental Variables Approach

The table presents the results from two-stage least square regressions that control for endogeneity of the relation between Employee Treatment Index and firm value. We restrict our sample to firms with industry wage rate available. In the first-stage regression, we regress the *Employee Treatment Index* on the control variables and two instrumental variables (industry wage rate and the proportion of the number of the Best Companies in a firm's industry). In the second stage regression, we regress Tobin's *q* (industry-adjusted Tobin's *q*) on the predicted *Employee Treatment Index* and other control variables. All of the regressions include year dummies. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the variables. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Employee Treatment	Tobin's <i>q</i>	Industry-adjusted
	Index		Tobin's <i>q</i>
	(1)	(2)	(3)
	First Stage	Second Stage	
Family firm (indicator): a	0.029 (0.158)	0.135*** (0.000)	0.134*** (0.000)
Predicted Employee Treatment Index: b		-0.024 (0.755)	-0.255*** (0.001)
a*b		0.222** (0.010)	0.305*** (0.000)
Log (assets)	0.051*** (0.000)	-0.011 (0.258)	0.005 (0.640)
R&D/sales	1.930*** (0.000)	4.300*** (0.000)	2.992*** (0.000)
Leverage	-0.431*** (0.000)	-0.778*** (0.000)	-0.815*** (0.000)
Log(firm age)	-0.008 (0.592)	-0.079*** (0.000)	-0.060*** (0.000)
Capital expenditure/assets	-0.467** (0.019)	-2.084*** (0.000)	-1.215*** (0.000)
ROA	1.317*** (0.000)	6.777*** (0.000)	6.285*** (0.000)
Diversify (indicator)	0.014 (0.652)	-0.140*** (0.001)	-0.121*** (0.004)
Sales growth	-0.042 (0.337)	0.050 (0.382)	0.019 (0.734)
Return volatility	1.168 (0.309)	-0.388 (0.757)	0.729 (0.561)
Institutional blockholder (indicator)	-0.002 (0.926)	-0.026 (0.232)	-0.020 (0.359)
Board size	-0.010* (0.066)	-0.003 (0.649)	-0.013** (0.016)
Independent board (indicator)	0.065** (0.027)	-0.003 (0.930)	0.061 (0.107)
Instrumental variable			
The proportion of the number of Best Companies in a firm's industry	1.374** (0.020)		

Log (Industry wage rate)	0.090*** (0.000)		
Constant	-1.378*** (0.000)	1.359*** (0.000)	-0.382*** (0.006)
Number of observations	8,985	8,985	8,985
Adjusted R^2	0.116	0.383	0.314

Table XI
Change in Employee Treatment around the Change in Family Firm Status

The table presents estimates of regressions in which the dependent variable is the *Employee Treatment Index* in column (1) and the *Management Treatment Index* in column (2). The sample consists of 427 firm-year observations (138 unique firms) in the two years before and two years after family firms become nonfamily firms with *Employee Treatment Index* (*Management Treatment Index*) data available. *Family firm status change* is an indicator that takes the value of one if family firms become nonfamily firms and zero otherwise. We do not include the transition years (i.e., one year before and after the status change) to avoid potential biases derived during the transition period. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the variables. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Employee Treatment Index (1)	Management Treatment Index (2)
Family firm status change (indicator)	-0.187** (0.049)	-1.130*** (0.000)
Log (assets)	0.049 (0.793)	0.320 (0.554)
Leverage	0.750 (0.145)	-0.507 (0.690)
R&D/sales	0.006 (0.997)	-4.550 (0.273)
Capital expenditure/assets	2.584 (0.185)	-2.448 (0.521)
ROA	-0.207 (0.755)	0.602 (0.708)
Sales growth	0.030 (0.869)	0.184 (0.716)
Constant	-0.507 (0.719)	3.769 (0.349)
Year fixed effects	N	N
Firm fixed effects	Y	Y
Number of observations	400	427
Adjusted R^2	0.039	0.119

Table XII
Determinants of Employee Friendly Policies and their Impact on Firm Value:
Founder CEO versus Nonfounder CEO Family Firms

The table presents estimates of OLS regressions in which the dependent variable is the *Employee Treatment Index* in column (1), the *Management Treatment Index* in column (2), Tobin's *q* in columns (3) and (4), and industry-adjusted Tobin's *q* in columns (5) and (6). The sample consists of 17,052 firm-year observations covered in RiskMetrics during the 1996 to 2010 period. Our initial sample includes all firms covered in RiskMetrics. We restrict our sample to firms with stock returns and financial data available in CRSP and Compustat, respectively. We also exclude firms in regulated industries (SIC codes between 4,900 and 4,999 and between 6000 and 6999). Industry-adjusted Tobin's *q* is computed by subtracting the median Tobin's *q* for a sample firm's Fama-French (1997) 48 industry from the sample firm's raw Tobin's *q*. Founder CEO firms are family firms in which the founder serves as CEO. Nonfounder CEO firms are family firms in which either a descendant of the founder or a professional manager serves as CEO. The Appendix provides detailed descriptions of the variables. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Employee Treatment Index	Management Treatment Index	Tobin's <i>q</i>		Industry-adjusted Tobin's <i>q</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
Founder CEO (indicator): a	-0.035 (0.465)	0.010 (0.928)	0.171*** (0.008)	0.032 (0.782)	0.165*** (0.010)	0.030 (0.793)
Nonfounder CEO (indicator): b	0.097** (0.046)	0.970*** (0.000)	0.056 (0.150)	-0.108 (0.169)	0.075* (0.057)	-0.110 (0.163)
Employee Treatment Index: c			0.021 (0.189)		0.021 (0.174)	
Management Treatment Index: d				0.014* (0.071)		0.014* (0.069)
a×c			0.071 (0.267)		0.074 (0.229)	
b×c			0.067** (0.035)		0.058* (0.072)	
a×d				0.031 (0.212)		0.031 (0.213)
b×d				0.025* (0.077)		0.026* (0.072)
Control variables as in Tables III and IV	Y	Y	Y	Y	Y	Y
Constant	-0.466 (0.159)	1.883*** (0.001)	1.599*** (0.000)	1.937*** (0.000)	-0.385** (0.012)	-0.751** (0.034)
Year fixed effects	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	N	N
Number of observations	11,678	16,193	11,658	16,145	11,658	16,145
Adjusted <i>R</i> ²	0.159	0.143	0.431	0.384	0.345	0.302

Table XIII
Likelihood of Selecting CEOs from Internal Talent Pool

The table presents estimates of logit regressions in which the dependent variable takes the value of one if a firm has relay succession and zero otherwise. The sample consists of 14,916 firm-years from 1997 to 2009 with 1,240 CEO turnovers. Following Naveen (2006), we consider that a firm has a relay succession plan in a given year if it has a president or COO (Chief Operating Officer) who is distinct from the CEO or chairman and who is not older than the CEO or chairman. In column (1), all relay successions are used and in column (2), the family heir apparent is excluded from relay successions. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board or is in the top management. The Appendix provides detailed descriptions of the variables. The *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. Superscripts ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Relay succession (including all heir apparent) (1)	Relay succession (excluding family heir apparent) (2)
Family firm (indicator)	0.585*** (0.000)	0.255** (0.014)
Log (assets)	0.097*** (0.003)	0.150*** (0.000)
Industry-adjusted ROA	1.434*** (0.004)	1.515*** (0.002)
Industry-adjusted stock returns	0.020 (0.690)	0.036 (0.504)
Departing CEO's age is between 64 and 66 (indicator)	1.835*** (0.000)	1.835*** (0.000)
Constant	-12.003*** (0.000)	-12.489*** (0.000)
Year fixed effects	Y	Y
Industry fixed effects	Y	Y
Number of observations	14,916	14,916
Pseudo R^2	0.081	0.076

Appendix

The Appendix provides detailed descriptions of the construction of all the variables used in the tables.

Variable	Description	Source
Firm Characteristics		
Board size	Number of directors sitting on the board	RiskMetrics
Capital expenditure/assets	Capital expenditures / total assets	Compustat
Diversify (indicator)	One if a firm has two or more business segments and zero otherwise	Compustat
Family firm (indicator)	One for firms in which founding family members, either individually or as a group, have equity ownership exceeding 5% in the firm, or at least one founding family member sits on the board, or in the top management and zero otherwise	Various sources
Firm age	Max (years in CRSP, years in Compustat)	Compustat, CRSP
Founder CEO (indicator)	One for a family firm in which its founder serves as CEO and zero otherwise	Various sources
Family member	A family member is 1) a board member or 2) is not a board member, but is a top management team member 3) or holds both positions. We identify potential family members by using the last name of founding families and confirm their status by using information provided in RiskMetrics (data item: relation to employee). For cases in which the relevant information is missing or family members whose status cannot be verified using their last name (e.g., in-laws, daughters, step-families), we manually check their status by using family relationship information provided in proxy statements of the company	RiskMetrics, Proxy statements
Free cash flow	(Operating income before depreciation - interest expenses - income taxes - capital expenditures) / total assets	Compustat
Independent board (indicator)	One if a board has a majority (50%) of independent directors and zero otherwise	RiskMetrics
Industry-adjusted Tobin's q	Sample firm's raw Tobin's q - median Tobin's q in a sample firm's Fama and French (1997) 48 industry	Compustat
Institutional blockholder (indicator)	One if a firm has at least one institutional shareholder holding more than 5% of its common shares	Thompson13F
Leverage	(Long-term debt + debt in current liabilities) / total assets	Compustat
Log (assets): \$ billions	Log of assets	Compustat
Log (sales per employee)	Log (sales / number of employees)	Compustat
Market-to-book	Market value of equity / book value of equity	Compustat
Nonfounder CEO (indicator)	One for a family firm in which either descendants of the founder or professional managers serve as CEO and zero otherwise	Various sources

Ratio of a deceased executive's pay to the aggregate compensation of top 5 executives	Ratio of a deceased executive's total compensation relative to the sum of top executive officers' total compensation. Total compensation is data item TDC1 from ExecuComp	ExecuComp
R&D/sales	Max (0, R&D expenditures / total sales)	Compustat
Return volatility	Standard deviation of a firm's daily stock returns during a fiscal year	CRSP
Relay succession (indicator)	One for a firm that has a relay succession and zero otherwise. A firm is considered to have a relay succession plan in a given year if it has a president or COO (Chief Operating Officer) who is distinct from the CEO or chairman and is not older than the CEO or chairman.	RiskMetrics
Sudden deaths	Sudden deaths are defined as "an unexpected death that occurs instantaneously or within 24 hours of an abrupt change in the person's previous clinical state," (Nguyen and Nielsen (2010)). To include deaths that are sudden and unexpected by the stock market, we exclude deaths in which the causes are attributed to cancer, complications from illness, past strokes, and surgery.	News articles
ROA	Operating income before depreciation scaled by book value of total assets	Compustat
Sales growth	$(Sales_t - Sales_{t-1}) / Sales_{t-1}$	Compustat
Takeover interest (indicator)	One if there are any rumors that the firm will be taken over after the death of the executive and zero otherwise	News articles
Total factor productivity	Residual of annual industry-specific Cobb-Douglas production functions estimated for each Fama and French (1997) 48 industry regression: $\log(\text{sales}) = \log(\text{number of employees}) + \log(\text{net property, plant, and equipment})$ (Faleye, Mehrotra, and Morck (2006))	Compustat

Employee Treatment Characteristics

Nonexecutive Employee Treatment Characteristics

Employee Treatment Index	Employee Treatment Index is computed by summing up the indicator variables for the six strengths: 1) employee involvement, 2) health and safety strength, 3) retirement benefit strength, 4) cash profit sharing, and 5) union relations, and 6) other strength, and the four concerns: 1) health and safety concern, 2) retirement benefits concern, 3) union relations, and 4) other concern.	KLD STATS database
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Executive Employee Treatment Characteristics

Management Treatment Index	Management Treatment Index is computed by summing up the indicators for 16 items that capture executive employees' decision making power, job security, and reputation. Components of 16 items are listed below.
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Components of Management Treatment Index

1. Relative Importance of CEOs and Non-CEO Executives

CEO accumulates job titles (indicator)	One either if CEO is the chairman and the president or if the CEO is the chairman and no president or Chief Operating Officer exists and zero otherwise (Adams, Almeida, and Ferreira (2005))	RiskMetrics
CEO is chair of the board (indicator)	One if CEO is the chairman of the board and zero otherwise	RiskMetrics
CEO is the sole insider (executive officer) on the board (indicator)	One if no executive officer other than the CEO sits on the board and zero otherwise (Adams, Almeida, and Ferreira (2005))	RiskMetrics
CEO pay slice	Ratio of CEO total compensation to the sum of all top executives' total compensation (Bebchuk, Cremers, and Peyer (2011)). Total compensation is data item TDC1 from ExecuComp.	ExecuComp

2. Top Executives' Job Security

Firm age-adjusted median tenure of the management team members (excluding family members)	Residual estimated by regressing the median tenure of the top five nonfamily executives on firm age	ExecuComp, BoardEx, various sources
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3. Top Executives' Prestige

Reputation in Business Community:

Proportion of certified inside directors on the board	Ratio of non-CEO operating officer-director who holds an outside directorship on the board (Masulis and Mobbs (2011))	RiskMetrics
Proportion of Interlocking directors on the board	Ratio of interlocking directors on the board	RiskMetrics
Proportion of officers who serve as trustees of nonprofit institutions	Ratio of officers who serve as trustees of nonprofit institutions in the top management team	BoardEx

Educational Level and Prior Work Experience:

Executives who are CPA	Ratio of officers who are Certified Public Accountants in the top management team	ExecuComp, BoardEx
Executives who are former government officials	Ratio of officers who are former government officials in the top management team (Kang and Zhang (2012))	BoardEx
Executives who are former partners in law or accounting firms	Ratio of officers who are formally a partner in a law or accounting firms in the top management team	BoardEx
Executives who are former senior officers in other firms	Ratio of officers who served as executive officers and/or vice presidents or higher prior to joining the firm in the top management team.	BoardEx
Executives who are Ivy League graduates	Ratio of officers who graduated from Ivy or Ivy equivalent educational institutions in the top management team	BoardEx
Executives who have an MBA degree	Ratio of officers with an MBA degree in the top management team	ExecuComp, BoardEx
Executives who hold a JD degree	Ratio of officers who hold a JD degree in the top management team	ExecuComp, BoardEx
Executives who hold a Ph.D. degree	Ratio of officers who hold a Ph.D. degree in the top management team	ExecuComp, BoardEx

Essay Two: Family Firms, Antitakeover Provisions, and the Cost of Bank Financing

Abstract

We investigate how the role of antitakeover provisions (ATPs) in alleviating the conflict of interests between shareholders and creditors differs between family and nonfamily firms. We find that while nonfamily firms with more ATPs (measured by the G-index) enjoy a lower cost of bank loans, the corresponding family firms do not. The adverse effect of ATPs on the cost of debt for family firms is particularly severe when they adopt control-enhancing mechanisms to maintain control. We also find that the adverse effect is more pronounced when bank loans are unsecured or have no covenants, when family firms are insulated from disciplinary forces (e.g., low product market competition or low leverage), or when family firms have more powerful CEOs (e.g., CEOs are the chairmen of the board, are old, or receive excess compensation). The results suggest that agency conflicts that vary depending on a firm's ownership and governance mechanisms are important considerations in examining the effects of ATPs on the cost of debt and that banks effectively factor in such conflicts when determining loan rates.

Keywords: Agency conflict, Antitakeover provision, Control mechanism, Cost of bank loan, Creditor, Family firm

JEL Classification: G21, G32, G34

Introduction

Prior literature shows that antitakeover provisions (ATPs) have different impacts on the wealth of shareholders and debtholders. One stream of literature finds that ATPs entrench managers, thereby decreasing shareholder value (e.g., Gompers, Ishii, and Metrick (2003), Masulis, Wang, and Xie (2007), Bebchuk, Cohen, and Ferrell (2009), Cohen and Wang (2013)). Another strand of literature focuses on the positive role of ATPs in reducing creditors' concerns about borrowers' takeover vulnerability, thereby mitigating potential conflicts between shareholders and creditors and in turn lowering the cost of debt (Klock, Mansi, and Maxwell (2005), Chava, Livdan, and Purnanandam (2009), Francis et al. (2010)).

In this paper we extend the latter stream of literature by showing that the net impact of ATPs on a firm's cost of capital cannot be fully assessed without considering a firm's ownership and governance mechanisms. More specifically, we investigate how agency conflicts arising from family firms' unique ownership structure and control incentives affect the positive role of ATPs documented in prior literature. While prior studies focus mainly on the positive impact of ATPs on creditors, few studies examine the possibility that ATPs intensify agency conflicts among various claimholders including managers, shareholders, and creditors, which adversely affects creditors' claims on firm value. In particular, we have limited understanding of the net effect of ATPs on creditors in the presence of controlling shareholders who have a strong desire to maintain control of the firm.²⁵ Although controlling ownership can reduce takeover vulnerability and thus benefit creditors, it can also hurt them by insulating managers and controlling owners

²⁵ Cremers, Nair, and Wei (2007) argue that the net impact of shareholder governance on bondholders depends on the nature of the governance mechanisms in place. Using the presence of an institutional blockholder as a proxy for shareholder governance, they find that institutional blockholders combined with low antitakeover provisions lead to higher bond yields. They argue that the presence of institutional blockholders increases the likelihood of a firm being a takeover target, especially when it has weak antitakeover provisions. While their analysis largely focuses on the role of institutional blockholders in disciplinary takeovers, we focus on the potential costs and benefits of family control from an agency conflict perspective and the impact of the interaction of family control with ATPs on the creditor's loan pricing.

from disciplinary forces, especially when it is combined with strong takeover defenses. Therefore, whether ATPs alleviate or intensify the shareholder-creditor conflict is likely to depend on a firm's ownership structure and controlling shareholders' incentives to maintain their power.

Family ownership represents an ideal setting to address this issue because, as we discuss below, it is associated with agency conflicts between controlling shareholders and various other stakeholders including managers, creditors, and small shareholder. Moreover, family ownership is the most prevalent form of concentrated ownership around the world (La Porta, Lopez-De-Silanes, and Shleifer (1999), Claessens, Djankov, and Lang (2000)). In the U.S., founders and their heirs are the most common types of large, undiversified shareholders, controlling about one-third of Fortune 500 and S&P 500 industrial firms (Anderson and Reeb (2003)) and more than one-half of all public firms (Villalonga and Amit (2010)). In Asia and Europe, family firms account for almost half of listed firms and more than 60% of all firms, respectively (Claessens et al. (2000), Faccio and Lang (2002)). In addition, family shareholders tend to have a strong desire to maintain control due to incentives for intergenerational transfers of control (Bertrand and Schoar (2006)). Thus, family ownership represents a close approximation to the controlling ownership discussed in the literature.

Family firms have attracted significant attention in the literature on corporate governance because of their unique ownership structure and the various control mechanisms that family shareholders implement to maintain control of the firm. Prior studies show that while concentrated family ownership mitigates agency problems between managers and shareholders (Fama and Jensen (1983), Villalonga and Amit (2006)), it can intensify agency conflicts between controlling shareholders and minority shareholders (Villalonga and Amit (2006, 2009), Ali, Chen,

and Radhakrishnan (2007)).²⁶ Moreover, these agency problems vary across family firms depending on the extent of the founding family's involvement in management and the presence of control-enhancing mechanisms. This heterogeneity provides a rich setting to examine the complex interplay among ownership, control, and takeover defenses from creditors' perspective.

We propose two competing hypotheses regarding the differential impact of ATPs on the cost of bank debt between family and nonfamily firms. The first of these hypotheses, the conflicts of interest hypothesis, posits that the entrenchment effects of ATPs (i.e., reducing the governance role of takeovers in disciplining poorly performing managers (Karpoff and Malatesta (1989)) intensify agency problems in family firms, and that the costs of intensified agency problems offset the benefits that creditors can gain from reduced takeover vulnerability. Prior studies show that founding families expropriate other investors through various channels such as special dividends, unwarranted perquisites, excessive compensation, and related-party transactions (DeAngelo and DeAngelo (2000), Gilson and Gordon (2003), Faccio, Lang, and Young (2001), Baek, Kang, and Lee (2006)). Strong takeover defenses that insulate family shareholders from governance pressures increase this expropriation risk by allowing them to extract more private benefits at the expense of other investors, aggravating agency conflicts between family shareholders and other stakeholders, including minority shareholders and creditors. To the extent that increased expropriation risks and decreased firm value due to an increase in agency conflicts adversely affect creditors' claims on firm assets, creditors will require higher compensation (i.e., higher loan rates) for loans issued to family firms with strong takeover defenses. Because family shareholders often use mechanisms that enhance their control rights above their cash flow rights, such as dual-class shares, pyramids, cross-holdings, or voting agreements, which further

²⁶ Villalonga and Amit (2009) find that for large U.S. firms, founding families are the only blockholders with voting rights exceeding their cash flow rights on average. They also show that agency conflicts between controlling and minority shareholders are as relevant in the U.S. as in other countries.

exacerbate conflicts between controlling shareholders and other claimholders (Villalonga and Amit (2006, 2009)), the conflicts of interest hypothesis predicts that loan spreads for family firms with strong takeover defenses will be particularly high for those family firms that adopt control-enhancing mechanisms.

In contrast, the interest alignment hypothesis posits that family control mitigates potential agency conflicts that ATPs create, making the effects of ATPs in reducing takeover risk stronger in family firms than in nonfamily firms. The entrenchment effect of ATPs may be less severe in family firms since founding families with large, undiversified ownership tend to be committed monitors of management. Furthermore, the links that bind current to future generations strongly motivate family owners to cultivate durable relationships with various stakeholders and make long-term value-enhancing investments (Anderson, Mansi, and Reeb (2003), Bertrand and Schoar (2006), Mueller and Philippon (2011)). Thus, to the extent that ATPs insulate family owners from the market for corporate control and allow them to pay less attention to short-term performance pressures,²⁷ the interests of shareholders and creditors are likely to be better aligned in family firms than in nonfamily firms. These arguments suggest that ATPs combined with family control mitigate conflicts of interest between controlling shareholders and creditors, leading to a lower cost of bank loans. Moreover, to the extent that family shareholders use control-enhancing mechanisms to further reduce takeover vulnerability and commit to long-term value creation, the effects of ATPs in reducing loan rates may be more pronounced for family firms that have control-enhancing mechanisms.

²⁷ Jarrell and Poulsen (1988) show that the use of ATPs incentivizes firms to invest in firm-specific human capital and that firms benefit from such long-term investments. Chemmanur and Tian (2012) further find that ATPs insulate managers from short-term performance pressures and allow them to invest in long-term innovative projects. Johnson, Karpoff, and Yi (2012) also show that takeover defenses help IPO firms bond their commitment to stakeholders such as customers, suppliers, and strategic partners and thus induce relationship-specific investment.

We test these two competing hypotheses using a large sample of 8,006 bank loans issued to 1,601 U.S. firms on the S&P 1500 Index over the period 1996 to 2006. Following previous studies such as Anderson and Reeb (2003), Villalonga and Amit (2006), and Li and Srinivasan (2011), we define family firms as firms in which founding family members, either individually or as a group, have block equity ownership, or at least one founding family member sits on the board or works in top management. In our sample, 585 firms (36.5%) are classified as family firms. To capture ATPs, we use the G-index of Gompers, Ishii, and Metrick (2003).

Consistent with prior studies, we find that a higher G-index is associated with lower loan spreads (Klock, Mansi, and Maxwell (2005), Chava, Livdan, and Purnanandam (2009), Francis et al. (2010)). However, unlike Anderson, Mansi, and Reeb (2003), who use a sample of S&P 500 industrial firms and find that family firms benefit from a lower cost of public debt, we find that loan spreads for family firms are insignificantly lower than those for nonfamily firms.²⁸ As we discuss in more detail below, this difference is largely due to the larger fraction of small firms in our sample that are not on the S&P 500 Index, as small firms depend more on bank financing than on public debt financing.

More importantly, we find that while ATPs reduce the cost of bank loans for nonfamily firms, they do not do so for family firms. In other words, loan-spread-reducing effects of ATPs (by lowering takeover vulnerability) dominate in nonfamily firms but not in family firms. These results suggest that when high ATPs are combined with significant family control, banks are concerned about the expropriation and entrenchment risks arising from strong takeover defenses

²⁸ While Anderson, Mansi, and Reeb (2003) focus on the positive role of family ownership in aligning the interests of equityholders with those of bondholders, we extend their study by examining whether the effects of family control on the cost of bank debt vary depending on agency conflicts, takeover defenses, and control mechanisms in family firms. We also use bank loans instead of public bonds in our analysis, which allows us to examine how banks that are known to have information advantages relative to small public debtholders (Fama (1985)) assess the agency conflicts of a broad set of large as well as small publicly listed firms. We show that family control combined with both strong takeover defenses and control-enhancing mechanisms intensifies creditors' concerns of expropriation risk and thus increases the cost of bank debt.

and thus charge higher loan prices to family firms, in line with the conflicts of interest hypothesis. When we separately analyze family firms based on the presence of control-enhancing mechanisms, we further find that the adverse effect of ATPs mainly concentrates in family firms with control-enhancing mechanisms, further supporting the conflicts of interest hypothesis.

To shed further light on the importance of agency conflicts in loan pricing of family firms with strong takeover defenses, we conduct a series of subsample tests on family firms based on different indicators of agency problems. We first find that the adverse interaction effects of family control and strong ATPs on loan spreads are more pronounced when bank loans are unsecured or unprotected by restrictive covenants, suggesting that the absence of security/covenants increases banks' concerns that ATPs induce controlling shareholders in family firms to engage in self-serving transactions rather than reduce borrowers' takeover risk. These results are particularly evident when family firms have control-enhancing mechanisms. Because prior literature finds that covenants play a crucial role in mitigating potential conflicts of interest between shareholders and debtholders (Kalay (1982), Billett, King, and Mauer (2007), Graham, Li, Qiu (2008), Chava, Kumar, and Warga (2010)), these results suggest that agency conflicts between shareholders and debtholders are an important consideration in examining the effects of ATPs on the cost of debt and that banks effectively factor in such conflicts when pricing loans.

We next find that loan spreads for family firms with strong takeover defenses are higher when these firms operate in a less competitive industry or when they have lower financial leverage. These results are more pronounced when family firms increase the voting rights of family shareholders above their cash flow rights using control-enhancing mechanisms.

When we classify family firms according to CEO power to examine whether the classic agency conflicts between managers and shareholders are factored into creditors' loan pricing of firms with strong ATPs, we find that the adverse effect of ATPs on the cost of bank loans is more evident when CEOs in family firms, especially those in family firms with control-enhancing mechanisms, are the chairman of the board, are old, or receive excess compensation.

Previous studies find that compared to family firms with founder CEOs, those with nonfounder CEOs tend to face higher agency conflicts (Perez-Gonzalez (2006), Fahlenbrach (2009), Li and Srinivasan (2011)). Consistent with these studies, we also find that the adverse effects of ATPs on loan spreads are more pronounced when family firms are managed by nonfounder CEOs than by founder CEOs, when family firms are managed by a second- or later-generation founding family member (Villalonga and Amit (2006)), when family firms are managed by a nonfamily CEO than by a family CEO, and when family firms have control-enhancing mechanisms irrespective of whether their CEOs are family members or not. Overall, the results of the subsample tests confirm that the conflicts between controlling shareholders and other investors are a key determinant of creditors' loan pricing in family firms with strong antitakeover defenses.

In additional analyses, we address concerns that omitted unobservable firm characteristics simultaneously affect a firm's choice of ATPs and its cost of bank debt by estimating regressions of changes in loan spreads on changes in the G-index. We find that the results do not change, suggesting that our findings are robust to controlling for time-invariant omitted variable concerns.

Our study contributes to the literature that examines the impact of ATPs on firm value. While prior studies such as Gompers, Ishii, and Metrick (2003), Masulis, Wang, and Xie (2007), Bebchuk, Cohen, and Ferrell (2009), and Cohen and Wang (2013) document an adverse effect of

ATPs on equity value, other studies find the opposite effect of ATPs on the cost of debt. For example, Klock, Mansi, and Maxwell (2005) and Chava, Livdan, and Purnanandam (2009) show that firms with more ATPs enjoy lower bond spreads and bank loan spreads, respectively. Francis et al. (2010) also show that state antitakeover laws tend to decrease bond yields. These studies attribute their findings to the role of ATPs in reducing takeover vulnerability. We extend this stream of literature by showing that for family firms, agency costs intensified by strong ATPs offset the loan-spread-reducing effects of ATPs, particularly for those family firms with control-enhancing mechanisms. Consistent with our findings, Cremers, Nair, and Wei (2007) find that shareholder control measured by institutional blockholdings increases (decreases) corporate bond yields if the firm has weaker (stronger) takeover defences. While their study emphasizes the role of the increase in takeover vulnerability induced by institutional blockholdings, we focus on family control and various agency conflicts arising from such control in examining the effect of takeover defences on the cost of debt.

The paper is organized as follows. In Section I, we discuss our data and compare the characteristics of family and nonfamily firms. In Section II, we examine how family control and the interaction between family control and ATPs affect the cost of bank loans. Section III reports subsample results based on various measures of agency conflicts. Section IV reports results for alternative classifications of family firms, and Section V presents results of additional analyses as well as robustness tests. Section VI summarizes and concludes.

I. Sample and Summary Statistics

A. Sample

Our initial sample consists of all firms included in *RiskMetrics*, which covers firms on the S&P 1500 Index, from 1996 to 2006. We then restrict our sample to those firms whose loans are covered in Loan Pricing Corporation's (LPC) *Dealscan*²⁹ and whose stock returns and financial data are available in *CRSP* and *Compustat*, respectively. Following Chava, Livdan, and Purnanandam (2009) and Bharath et al. (2011), we also exclude firms in the financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4000 and 4999) industries. Our final sample comprises 8,006 bank loans issued to 1,549 distinct firms over the sample period (5,068 firm-years). Since *RiskMetrics* covers most of the firms on the S&P 1500 Index, our sample includes not only large firms but also small and mid-sized firms. We measure ATPs using the G-index of Gompers, Ishii, and Metrick (2003) and obtain this information from *RiskMetrics*.³⁰ The loan spread is measured using the *Dealscan* variable All-In-Spread-Drawn (AISD), the rate a borrower pays in basis points over LIBOR or the LIBOR equivalent on the drawn loan amounts.

Following previous studies on family firms (e.g., Anderson and Reeb (2003), Villalonga and Amit (2006), Li and Srinivasan (2011)), we identify family firms using two criteria: equity ownership by a founding family and/or the presence of family members on the board of directors or on management teams.³¹ We identify family firms by searching the following sources: the section in proxy statements that describes director biographies, the list of family firms in the November 10, 2003 issue of *Business Week* magazine, and *Board Analyst*, *BoardEx*, *ExecuComp*, and other internet sources including companies' websites. Family ownership is measured as the

²⁹ To ensure that we use accounting information available at the time of loan initiation, we follow Bharath et al. (2011) and use accounting data in the same fiscal year if loans are made in the second half of the fiscal year. If loans are issued in the first half of the fiscal year, accounting information from the prior fiscal year is used.

³⁰ Following Gompers, Ishii, and Metrick (2003), we assume that firms' governance provisions do not change between publication years and we fill missing G-index observations with previously available data. The publication years are 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006.

³¹ Family firms can be defined in various ways. See Villalonga and Amit (2006, 2010) for a detailed discussion on different definitions of family firms.

ratio of the number of shares of all classes held by family members to the total number of shares outstanding.

B. Summary Statistics

Panel A of Table I presents the distribution of family and nonfamily firms over our sample period. Out of 5,068 firm-year observations in our sample, 1,856 (36.6%) are classified as family firms.³² This number is comparable to that (37%) in Villalonga and Amit (2006), who use Fortune 500 firms, and slightly higher than that (34%) in Anderson, Mansi, and Reeb (2003), who use firms on the S&P 500 Index. The fraction of family firms ranges from 31.7% in 2006 to 41.5% in 1998. Panel B presents the industry distribution of sample firms using two-digit SIC codes. The fraction of family firms is largest in the wholesale and retail trade industry (45.2%), followed by the agriculture, forestry, and fishing (42.9%) and services (41.6%) industries.

Table II provides descriptive statistics on loan, firm, and CEO characteristics for our sample. All continuous variables are winsorized at the 1% level in both tails to mitigate the effects of potential outliers. The appendix provides detailed descriptions of the variables. Several observations are worth noting. First, for loan characteristics, we find that the median loan spread of family firms (100 basis points) is significantly higher than that of nonfamily firms (93.75 basis points), while the mean loan spreads are not significantly different between the two groups.³³

³² Our definition of family firms classifies Microsoft Corp. as a family firm because its founder, Bill Gates, serves as a board member during our sample period. Bennedsen, Perez-Gonzalez, and Wolfenzon (2010) point out, however, that entrepreneurial firms such as Microsoft should not be considered as family firms because some of the main traits of family firms such as preference for intergenerational control transfers are not applicable to these firms. To address this concern, we follow Villalonga and Amit (2006) and exclude technology firms (SIC codes 35, 36, 38, and 73) from the sample and repeat all the analyses reported in the paper. Our main results do not change.

³³ Ali, Chen, and Radhakrishnan (2007) and Chen, Dasgupta, and Yu (2012) report that family firms in different S&P indexes have different transparency and disclosure policies that may affect the cost of capital. When dividing our family firms into those belonging to SmallCap 600, MidCap 400, and S&P 500 indexes, we find that the mean loan spread is highest for SmallCap 600 family firms (169.51 basis points), followed by MidCap 400 family firms (111.95 basis points) and S&P 500 family firms (79.16 basis points).

Compared with loans to nonfamily firms, those to family firms have smaller commitment size and a smaller number of lenders,³⁴ with the differences significant at the 1% level. Second, for firm characteristics, we find that compared with nonfamily firms, family firms are less likely to deploy ATPs (i.e., lower G-index scores) and are smaller, younger, and less profitable (i.e., lower EBITDA/Sales). Family firms also have lower default probability (i.e., higher Altman Z-score) and their boards tend to be less independent. Third, compared with CEOs in nonfamily firms, CEOs in family firms are less likely to be the chairman of the board, have longer tenure, and receive lower compensation. Finally, we find that 73% of family firms have control-enhancing mechanisms, and that a founder (family member) serves as CEO in 36% (59%) of family firms.

II. Family Firm Control, ATPs, and the Cost of Bank Loans

In this section we examine the effects of family control and the interaction between family control and ATPs on the cost of bank loans. Specifically, we estimate the following ordinary least squares (OLS) regression to investigate whether the effect of ATPs on the cost of bank loans is different between family and nonfamily firms:

$$\begin{aligned} \text{Log}(\text{loan spread}_{jit}) = & \alpha \text{High } G\text{-index}_{it} (\text{indicator}) + \beta \text{Family firm}_{it} (\text{indicator}) + \gamma \text{High } G\text{-} \\ & \text{index}_{it} (\text{indicator}) \times \text{Family firm}_{it} (\text{indicator}) + \mu X_{jit} + \psi Y_{it} + \eta Z_t + \iota_i + \rho_t + \varepsilon_{jit}, \end{aligned} \quad (1)$$

³⁴ Loan commitment size is highly correlated with firm size as measured by the logarithm of market capitalization (correlation coefficient = 0.57). Although we exclude loan size from our regression analyses, our results are robust to including both loan size and firm size in the same regressions.

where loans are denoted by j , firms by i , and time by t . The dependent variable is the logarithm of AISD.³⁵ *High G-index* is an indicator that takes the value of one if the number of ATPs adopted by a firm is greater than the sample median (nine) and zero otherwise (Gompers, Ishii, and Metrick (2003))³⁶; *Family firm* is an indicator that takes the value of one for a family firm and zero otherwise; X_{jit} is a vector of characteristics of loan j issued to firm i at time t ; Y_{it} is a vector of characteristics of firm i at time t ; Z_t is a vector of variables capturing macroeconomic conditions at time t ;³⁷ ι_i and ρ_t are industry and year fixed effects, respectively; and ε_{jit} is an error term. Standard errors are adjusted for heteroskedasticity and clustered at the firm level.³⁸ The control variables closely follow those used in prior studies (Graham, Li, and Qiu (2008), Chava, Livdan, and Purnanadam (2009)).

In equation (1), α measures the effect of *High G-index* on loan spreads of nonfamily firms, β measures the effect of family control with a low G-index on loan spreads, and γ measures the difference in the effects of *High G-index* on loan spreads between family and nonfamily firms, which is our primary explanatory variable of interest. The sum of α and γ captures the net effect of *High G-index* on loan spreads of family firms. The conflicts of interest hypothesis, which argues that ATPs in family firms intensify the agency conflicts between controlling shareholders and other types of investors, predicts γ to be positive. In contrast, the interest alignment hypothesis predicts γ to be negative.

³⁵ Following prior studies (e.g., Chava, Livdan, Purnanadam (2009), Graham, Li and Qiu (2008)), we take the natural logarithm of loan spreads to address the skewness in loan spreads.

³⁶ In untabulated results, we also repeat our analyses by replacing the High G-index indicator with raw G-index. Although using raw G-index allows us to better employ sufficient variation in the firm level of ATPs, we use the high G-index indicator in our analysis for the easier interpretation of the results.

³⁷ We use two variables to control for macroeconomic conditions: credit spread (difference between the yields of BAA and AAA corporate bonds) and term spread (difference between the yields of 10-year Treasury notes and 1-year Treasury notes).

³⁸ Our unit of analysis is a loan, although some deals comprise multiple loan facilities. While we use clustered standard errors at the firm level throughout our analysis, for robustness we also follow Bharath et al. (2011) and use clustering at the deal level to address the concern that loans in the same deal might be correlated with each other. Our results continue to hold.

The results are reported in Table III. Column (1) shows that the coefficient estimate on *High G-index* is negative and significant at the 1% level after controlling for firm characteristics, loan characteristics, and macroeconomic conditions. The coefficient estimate of 0.09 indicates that the loan spread for firms with stronger takeover defenses is 8.6% lower ($= e^{-0.090} - 1$) than that for firms with weaker takeover defenses. Because the average loan spread of firms with low ATPs is 140.43 basis points, this coefficient estimate suggests that loan spreads for high G-index firms are 12.64 ($= 140.43 \times 0.09$) basis points lower than for low G-index firms. This finding is consistent with prior studies showing that strong takeover defenses lead to low costs of debt (Klock, Mansi, and Maxwell (2005), Chava, Livdan, and Purnanandam (2009), Francis et al. (2010)).

In column (2), we replace *High G-index* with *Family firm* and find that the coefficient estimate on *Family firm* is negative but insignificant. In comparison, Anderson, Mansi, and Reeb (2003) find that family control is related to lower bond spreads using a sample of firms on the S&P 500 Index. Since IRRC covers small and mid-sized firms as well as those on the S&P 500 Index, and firms that borrow from banks tend to be smaller than firms that can issue bonds, our results suggests that lower costs of debt for family firms documented in prior literature are limited to large family firms that are able to access bond markets. To further address this issue, in untabulated tests we split *Family firm* according to whether family firms are on the S&P 500 Index and reestimate the column (2) regression. We find that only the coefficient on the indicator for family firms on the S&P 500 Index is significant and negative (p -value = 0.09), while that on the indicator for other family firms is insignificant. These results confirm Anderson, Mansi, and Reeb (2003). They are also consistent with Anderson, Duru, and Reeb (2009), who find

significant positive effects of family control on Tobin's q for family firms on the S&P 500 Index but not for other firms in their sample of the 2,000 largest U.S. firms.

Column (3) includes *High G-index*, *Family firm*, and their interaction. The results show that the effects of ATPs are sharply different between family and nonfamily firms. The coefficient estimate on *High G-index* is negative and significant at the 1% level, suggesting that higher ATPs lead to significantly lower bank loan spreads for nonfamily firms. The coefficient estimate on *Family firm* is negative and significant at the 1% level, indicating that family control is associated with significantly lower loan spreads when family firms have lower ATPs. However, the coefficient estimate (γ) on the interaction term between *High G-index* and *Family firm* is positive and significant, suggesting that increased ATPs significantly increase loan spreads for family firms. The sum of the coefficient estimates on the interaction term and on *High G-index* is not significantly different from zero (p -value of F -test = 0.98). Therefore, although nonfamily firms with high ATPs enjoy reduced loan spreads, such loan-spread-reducing benefits do not obtain for family firms with high ATPs, consistent with the conflicts of interest hypothesis.

In column (4), we examine whether the results in column (3) are related to the extent of agency conflicts that family firms face by splitting family firms into those with and without control-enhancing mechanisms. The results show that the coefficient estimate on the interaction between the indicator for family firms without control-enhancing mechanisms and *High G-index* is statistically insignificant. In contrast, the corresponding coefficient estimate using an indicator for family firms with control-enhancing mechanisms is significantly positive at the 1% level. Tests on the sum of the coefficient estimates on *High G-index* and its interaction with the indicator for family firms without (with) control-enhancing mechanisms show that it is negative and significant for family firms without control-enhancing mechanisms (p -value = 0.07), while it

is positive and insignificant for family firms with control-enhancing mechanisms (p -value = 0.29). Therefore, stronger takeover defenses significantly decrease loan spreads for family firms that do not have control-enhancing mechanisms but have no significant impact for family firms with control-enhancing mechanisms. To the extent that the presence of control-enhancing mechanisms reflects high agency conflicts between family shareholders and other investors, these results suggest that the difference in ATP effects between family and nonfamily firms shown in column (3) is mainly driven by family firms with high agency conflicts, in line with the conflicts of interest hypothesis.³⁹

Overall, the findings in Table III suggest that high ATPs in family firms increase lenders' concerns that the costs of ATPs offset the benefits of reduced takeover risk, particularly when family firms have high agency conflicts.⁴⁰

III. Agency Conflicts and the Cost of Bank Loans

³⁹ Alternatively, these results may suggest that since family control and strong takeover defenses are substitutes, adding ATPs in family firms where concentrated control ownership is already in place cannot have any incremental effects in reducing loan spreads. However, while this substitution argument is also consistent with the finding of no incremental ATP effects for family firms in column (3), it cannot explain the results in the following sections showing that loan spreads of family firms increase with potential agency conflicts between family shareholders and other stakeholders.

⁴⁰ Previous studies on ATPs exclude firms with dual-class shares from their analyses (Gompers, Ishii, and Metrick (2003), Masulis, Wang, and Xie (2007), Bebchuk, Cohen, and Ferrell (2009)). Bebchuk, Cohen, and Ferrell (2009) argue that dual-class shares serve as a powerful mechanism for takeover defences, so the effect of other antitakeover provisions on takeover vulnerability is trivial. Similarly, Gompers, Ishii, and Metrick (2009) argue that a dual-class structure is "the most extreme example of antitakeover protection." Villalonga and Amit (2009) show that U.S. family firms use dual-class stocks as a control-enhancing mechanism along with disproportionate board representation and voting agreements. In untabulated results, we estimate the Table III regression including a dual-class stock indicator, the high G-index indicator, and the family firm indicator to examine whether our results are driven largely by the effects of dual-class stocks. We find that the coefficient estimate on the dual-class stock indicator is insignificant while the coefficient estimate on the high G-index indicator stays negative and significant. When we interact the dual-class stock indicator with the family firm indicator, we find that the coefficient estimate on this interaction term is negative and insignificant. These results suggest that dual-class stocks and ATPs capture different dimensions of corporate governance mechanisms in family firms, resulting in differences in their effects on the cost of bank loans. To further check if dual-class effects drive our results, we drop family firms with dual-class shares from those with control-enhancing mechanisms and reestimate the regression in column (4). Our results remain unchanged.

In this section we conduct subsample analyses to examine how various agency conflicts in family firms affect the results in the previous section on the impact of ATPs on the cost of bank loans.

A. Loan Security, Covenants, and Dividend Flexibility

Prior literature shows that loan securities and covenants serve as contractual devices that ease conflicts of interest between shareholders and creditors (e.g., Rajan (1995), Billett, King, and Mauer (2007)). The conflicts of interest hypothesis predicts that the adverse effect of ATPs on the cost of debt for family firms is particularly pronounced when the conflicts between debtholders and shareholders are more severe, such as when bank loans are unsecured or lack restrictive covenants. To test this conjecture, we divide our sample according to the presence of loan contract devices that ease shareholder-creditor conflicts (i.e., whether loans are secured and whether loans have restrictive covenants) and examine whether our key results are affected.

The results are reported in Table IV. In Panel A, we classify our sample according to whether the loans are secured.⁴¹ We find that the coefficient estimate on the interaction term between *Family firm* and *High G-index* is positive and significant only for unsecured loans (columns (1) and (2)). The difference in the coefficient estimates on this interaction term between secured and unsecured loans is significant at the 1% level. Thus, the adverse interaction effects of family control and high ATPs on loan spreads is significantly larger for unsecured loans than for secured loans.

In columns (3) and (4), we decompose *Family firm* according to the presence of control-enhancing mechanisms and find that the adverse effect of *High G-index* on loan spreads for

⁴¹ For brevity, the coefficient estimates on the control variables are not reported. The regression models in Table IV include the same control variables as in Table III.

family firms with control-enhancing mechanisms reported in Table III holds only for unsecured loans. The sum of the coefficient estimates on *High G-index* and its interaction term with *Family firm with control-enhancing mechanisms* is significantly different from zero (p -value of F -test = 0.00) for unsecured loans. On the other hand, the coefficient estimates on the interaction term between *Family firm without control-enhancing mechanisms* and *High G-index* are insignificant in both unsecured and secured loan subgroups. These results suggest that the adverse effect of ATPs in family firms is more pronounced in those family firms that are susceptible to high agency conflicts between family shareholders and other investors, particularly creditors.

In Panel B of Table IV, we classify our sample according to whether loan contracts include restrictive covenants. Following Chava, Livdan, and Purnanandam (2009), we consider three types of loan covenants for which information is available in *Dealscan*, namely, debt sweep, equity sweep, and assets sweep covenants, and assign a loan to the covenant group if it includes at least one of these three covenants in its contract terms.⁴² We find that the coefficient estimates on the interaction term between *Family firm* and *High G-index* and that between *Family firms with control-enhancing mechanisms* and *High G-index* are positive and significant only when loans have none of the three covenants. Tests on the sum of the coefficient estimates for a subsample of no covenants show that the net effects of ATPs on loan spreads are significantly positive for family firms with control-enhancing mechanisms (p -value of F -test = 0.09). These results suggest that creditors that face increased agency conflicts due to a lack of protection via covenants penalize family firms with strong takeover defenses, especially those with control-enhancing mechanisms, by charging higher interest rates.

⁴² *Dealscan* does not provide the information on all types of covenants. Debt sweep, equity sweep, and assets sweep are general covenants stipulating the amount of loans that must be repaid from excess debt issuance, excess equity issuance, and excess asset sales, respectively. In untabulated tests, we repeat our analysis by reclassifying the sample loans based on only one covenant type and find similar results as those reported in Table IV for each of these three types of covenants.

In Panel C of Table IV, we divide our sample according to whether a firm is incorporated in a nimble-dividend state where managers have more flexibility in paying dividends.⁴³ We use only the subsample of loans without dividend restriction covenants in this panel and thus restrict attention to loans for which creditors are not protected from expropriation risk of excess dividends.⁴⁴ If managers have greater flexibility in paying dividends, creditors bear higher expropriation risk. Thus, the conflicts of interest hypothesis predicts the adverse effect of G-index on loan spreads for family firms to be more evident for loans whose borrowers are incorporated in nimble-dividend states. Consistent with this prediction, we find that the adverse effects of ATPs on loan spreads for family firms are evident only for loans issued to borrowers incorporated in nimble-dividend states. Specifically, the interaction term between *Family firm* and *High G-index* is positive and significant only in the subsample of loans whose borrowers are incorporated in nimble-dividend states (column (1)) and this result is more pronounced for family firms with control-enhancing mechanisms (column (3)).

In untabulated tests, we also measure potential conflicts between creditors and shareholders according to whether a firm pays high dividends. It is possible that firms pay high dividends to transfer wealth from creditors to shareholders, in which case high dividends could be an indication of high agency problems between shareholders and creditors. Following Ahmed et al. (2002), we split our sample according to the median level of a firm's dividends as a percentage of its total assets. We find that ATPs increase loan spreads of family firms with high takeover

⁴³ Nimble-dividend states include Arizona, Delaware, Kansas, Louisiana, Maine, Nevada, New Hampshire, Oklahoma, Rhode Island, and Vermont. See Qi and Wald (2008) and Chava, Livdan, and Purnanandam (2009) for more detailed discussion on the nimble-dividend states.

⁴⁴ Prior literature shows that dividend restriction covenants are an important contractual device that mitigates the conflicts between creditors and shareholders (e.g. Smith and Warner (1979), Kalay (1982), Healy and Palepu (1990)). Thus, when loans do not have any dividend restriction covenants, the agency problems between creditors and shareholders are expected to be severe. Moreover, DeAngelo and DeAngelo (2000) show that controlling family shareholders pay themselves large dividends at the expense of minority stockholders, suggesting agency conflicts arising from large dividend payments are more magnified in family firms than in nonfamily firms.

defenses, especially when these firms pay a higher level of dividends. The adverse effects of ATPs on the cost of bank loans is more pronounced in family firms with control-enhancing mechanisms that pay a higher level of dividends.

Overall, the findings in this subsection suggest that high shareholder-creditor conflicts intensify banks' concerns about potential expropriation by family shareholders protected by strong takeover defenses. Consequently, banks unprotected from this expropriation risk ex-ante charge higher interest rates to these family firms, in line with the conflicts of interest hypothesis.

B. Disciplinary Mechanisms

In this subsection we investigate whether our findings in Table III are more pronounced if managers and family shareholders are insulated from internal or external disciplinary mechanisms.

We first consider the disciplinary effect of product market competition. When managers are insulated from market discipline due to a lack of competition, they are likely to have strong incentives to maximize their own benefits at the expense of shareholders (minority shareholders in the case of family firms). Because this managerial slack decreases firm value, low product market competition is likely to make it harder for firms to raise external capital, thereby increasing their financing costs (Bertrand and Mullainathan (2003), Qiu and Yu (2009)). To test this argument, we divide our sample firms according to their level of product market competition and examine whether the results in Table III vary across these subgroups. We consider a firm as in a high (low) competition industry if its Herfindahl index, measured as the firm's squared revenue share in its four-digit SIC industry, is below (above) the sample median.

The results are reported in the first four columns of Table V. In column (1), we find that for the low competition group, the coefficient estimates on both *Family firm* (-0.188) and *High G-index* (-0.190) are significantly negative at the 1% level, while the coefficient estimate on their interaction term (0.260) is significantly positive at the 1% level. The sum of the coefficient estimates on *High G-index* and its interaction with *Family firm* is not significantly different from zero (p -value of F -test = 0.31). These results suggest that while a high G-index decreases loan spreads for nonfamily firms, such a loan-spread-reducing benefit disappears for family firms with high agency problems. When the competition level is high, however, the interaction term between *Family firm* and *High G-index* is insignificant (column (2)). The difference in coefficient estimates on the interaction term between columns (1) and (2) is significant at the 1% level, suggesting that the adverse interaction effects of family control and high ATPs on bank loan rates are significantly larger when firms are shielded from product market competition.

In columns (3) and (4), we decompose family firms according to the presence of control-enhancing mechanisms. We find that for the low competition group, the coefficient estimates on both the interaction terms between *High G-index* and *Family firms with control-enhancing mechanisms* and between *High G-index* and *Family firms without control-enhancing mechanisms* are significantly positive albeit their magnitude and statistical significance are slightly higher for the former interaction term than for the latter. We also find that the coefficient estimates on both interaction terms are significantly larger in the low competition group than in high competition group. The results indicate that the lack of external and internal governance forces limits the positive role of ATPs in reducing takeover vulnerability and such reduced benefits are factored into lenders' loan pricing decisions.

To further examine the effect of the agency problems between managers and shareholders and between family owners and minority shareholders on the cost of bank financing, we divide our sample according to the sample median of firms' leverage ratios. Jensen (1986) argues that high leverage plays an important role in disciplining managers and mitigating managerial agency conflicts. Similarly, Berger, Ofek, and Yermack (1997) show that entrenched managers choose lower leverage to avoid intensive monitoring.

The results are reported in columns (5) through (8) of Table V. We find similar results as those using product market competition. Specifically, the coefficient estimate on the interaction between *Family firm* and *High G-index* is significantly positive only for low leverage firms although its difference between low and high leverage firms is not significant (columns (5) and (6)). We also find that for both high and low leverage firms, the coefficient estimate on the interaction term between *High G-index* and *Family firm with control-enhancing mechanisms* is positive and significant, while the interaction term involving *Family firm without control-enhancing mechanisms* is insignificant (columns (7) and (8)). Although the magnitude and statistical significance of the coefficient estimate on the interaction term between *High G-index* and *Family firm with control-enhancing mechanisms* is higher for high leverage firms than for low leverage firms, the difference is not significant. A potential explanation for this insignificance is that while high leverage can function as a disciplinary mechanism for managerial agency conflicts, it can also aggravate asset substitution problems (Jensen and Meckling (1976)). These asset substitution problems increase creditors' concerns about potential

expropriation in family firms and consequently creditors demand high loan spreads for strong ATPs, especially for family firms with control-enhancing mechanisms.⁴⁵

Overall, the findings in Table V suggest that creditors view product market competition and high leverage as important disciplinary forces that can reduce agency conflicts induced by strong ATPs, and consider the presence of such forces when determining loan prices. These results lend further support to the conflicts of interest hypothesis.

As an additional test of the effect of agency problems between managers and shareholders and between large and small shareholders on the cost of bank loans, we classify our sample firms into subgroups according to CEO characteristics that measure CEO power and entrenchment. We expect that these agency problems in family firms are higher when CEOs are more powerful and entrenched. We use three proxies for CEO power and entrenchment: CEO-chair duality, CEO age, and CEO pay. To the extent that chairman CEOs, older CEOs, and excessively compensated CEOs are more powerful and have greater entrenchment incentives (Finkelstein and D'Aveni (1994), Adams, Almeida, and Ferreira (2005), Faleye, Hoitash, and Hoitash (2011)), we expect the adverse effect of ATPs on the cost of bank debt to be more pronounced for family firms with powerful CEOs.

The results are reported in Table VI. In Panel A, we divide our sample according to whether a firm's CEO serves as chairman of the board and estimate the regression separately for these two subgroups. Consistent with our expectation, columns (1) and (2) show that the coefficient estimate on the interaction term between *Family firm* and *High G-index* is significantly positive only for firms with CEO-chair duality. These results suggest that the presence of strong ATPs

⁴⁵ Prior studies show that risky firms (i.e. speculative-grade firms) benefit from being the targets of firms with sound credit because such acquisitions make them less risky (Qiu and Yu (2009)). To control for this co-insurance effect, in untabulated tests we include in the Table VI regressions an indicator that takes the value of one if a firm's S&P credit rating is below BBB and zero otherwise. We find that the results do not change.

can be detrimental, especially for family firms with CEOs who exert excess power. In columns (3) and (4), we separate family firms according to the presence of control-enhancing mechanisms and find that the positive interaction effect for family firms with CEO-chair duality holds only for family firms with control-enhancing mechanisms. Thus, the adverse effect of ATPs on the cost of bank debt is particularly severe when family firms with too powerful CEOs use control-enhancing mechanisms.

In Panel B, we divide our sample firms according to the sample median of CEO age. In columns (1) and (2), we observe a positive and significant coefficient estimate on the interaction term between *Family firm* and *High G-index* only for firms with old CEOs. The results in columns (3) and (4) show that for both firms with old CEOs and firms with young CEOs, the adverse effects of ATPs on loan spreads are more evident when family firms use control-enhancing mechanisms than when they do not. However, the difference in adverse effects between firms with old CEOs and those with young CEOs is not significant (p -value of F -test = 0.16).

In Panel C, we split sample firms according to the sample median level of excess CEO compensation. Following Faleye, Hoitash, and Hoitash (2011), we measure excess CEO compensation as the residual estimated by regressing the logarithm of CEO total compensation on firm size (log of market capitalization), ROA, book-to-market, the standard deviation of ROA, the standard deviation of stock returns, and year and industry indicators. The results show that the coefficient estimates on the interaction terms between *Family firm* and *High G-index* and between *Family firms with control-enhancing mechanisms* and *High G-index* are positive and significant only when CEO excess pay is higher. Moreover, in column (3), for the subgroup of firms that reward their CEOs higher excess pay, the sum of the coefficient estimates on *High G-*

index and its interaction with *Family firms with control-enhancing mechanisms* is significantly different from zero at the 1% level. Thus, strong takeover defenses appear to increase the cost of bank loans when family firms have control-enhancing mechanisms and their CEOs are excessively paid.

IV. Alternative Classifications of Family Firms

Thus far, we have shown that the loan-spread-lowering effect of ATPs in family firms is subject to the presence of control-enhancing mechanisms. In this subsection, we follow Villalonga and Amit (2006) and classify family firms into various subgroups according to differences in perceived agency problems and examine whether the interaction effects of family control and ATPs on the cost of bank loans vary depending on the degree of agency conflicts in family firms.

The results are reported in Table VII. In column (1), we divide family firms into firms managed by a founder CEO and those managed by a descendant or a hired CEO. Family firms with a nonfounder CEO tend to face higher agency conflicts than family firms with a founder CEO (e.g., Villalonga and Amit (2006)). For example, nonfounder CEOs may have greater entrenchment incentives to strengthen their relatively unstable status, and thus adopt ATPs to maximize their self-interest. Supporting these arguments, Fahlenbrach (2009) and Li and Srinivasan (2011) document that family firms' high value is evident only when there exist founders who have invaluable firm-specific knowledge and a strong attachment to their firm. Perez-Gonzalez (2006) also shows that appointing a founder's descendant to CEO limits the scope of labor market competition and is associated with poor firm performance. Thus, according to the conflicts of interest hypothesis, the adverse effects of ATPs on the cost of bank

debt should be stronger for family firms with a nonfounder CEO than for those with a founder CEO.

We find that the coefficient estimates on both *Founder CEO family firm* and its interaction with *High G-index* are statistically insignificant. In contrast, the coefficient estimates on *Nonfounder CEO family firm* and its interaction with *High G-index* are significantly negative (-0.163) and significantly positive (0.194) at the 1% level, respectively. Thus, ATPs significantly increase the cost of bank loans for family firms with nonfounder CEOs but not for family firms with founder CEOs. These results are consistent with the conflicts of interest hypothesis.

In column (2), we classify family firms into founder- and descendant-controlled family firms. A founder-controlled family firm is a family firm in which only a founder or founder-generation family member is actively involved in the management as an officer, a board of director, or a blockholder. A descendant-controlled family firm is a family firm in which at least one second- or later-generation founding family member is active in the firm. We find that although both coefficient estimates on the interaction terms between the indicators for these two types of family firms and *High G-index* are significantly positive at the 10% and 1% level, respectively, the magnitude of the coefficient estimate is significantly larger for the interaction term involving *Descendent-controlled family firm* than the interaction term involving *Founder-controlled family firm* (p -value of F -test = 0.01). The results are largely consistent with those in column (1).

In column (3), we split family firms into *Family CEO firm* and *Nonfamily CEO firm* to capture the agency problems arising from potential conflicts between managers and shareholders. Villalonga and Amit (2006) show that these agency problems are higher in family firms with a nonfamily CEO than in family firms run by a family CEO. *Family CEO firm* corresponds to family firms in which either a founder or a descendant serves as CEO, and *Nonfamily CEO firm*

corresponds to family firms managed by an outside professional CEO. We find that only the coefficient estimate on the interaction term between *High G-index* and *Nonfamily CEO family firm* is positive and significant. In column (4), we classify family firms into four subgroups according to whether they are managed by family CEOs or outside CEOs and whether family firms use control-enhancing mechanisms. The former distinction is intended to reflect agency conflicts between managers and shareholders while the latter reflects agency conflicts between controlling and minority shareholders. The results show that irrespective of whether family firms are managed by family CEOs or outside CEOs, banks charge higher interest rates on loans when family firms have control-enhancing mechanisms. Specifically, we find that the coefficient estimates on the interaction terms between *High G-index* and *Family CEO firm with control-enhancing mechanisms* and between *High G-index* and *Nonfamily CEOs with control-enhancing mechanisms* are significant 0.183 and 0.245, respectively. However, the interaction between *High G-index* and *Nonfamily CEO family firm without control-enhancing mechanisms* is statistically insignificant. The results suggest that creditors pay more attention to agency conflicts between controlling and minority shareholders than to agency conflicts between managers and shareholders when they determine loan prices of family firms.

Overall, the results in this section support the view that lenders respond to various types of agency problems prevailing in family firms, and incorporate the impact of these agency problems on the potential costs and benefits of strong ATPs in their loan pricing decisions.

V. Additional Tests

In this section, we conduct additional tests to check the robustness of our main results.

A. Change Regressions

Thus far, we have not explicitly taken into account the endogeneity problem that some unobservable firm characteristics jointly affect both G-index and interest rates, resulting in a spurious correlation. This endogeneity concern is not likely to be a serious problem in our study because ATPs tend to be adopted at the time of firms' IPOs and rarely change thereafter (Chava, Livdan, and Purnanandam (2009)). Considering our sample firms' average age of 30 years, these firms' adoption of ATPs is likely to have occurred long before the issuance of loans. Moreover, family firm status tends to be constant. Thus, the interaction effects of family control and high ATPs on loan spreads are unlikely to be susceptible to time-varying omitted variable concerns.

However, there is still a possibility that our results are affected by potential time-invariant omitted variables. To address this concern, we follow Chava, Livdan, and Purnanandam (2009) and Lin et al. (2011) and estimate change regressions. Change regressions should mitigate endogeneity concerns because the potential effects of omitted variables on loan spreads are likely to be filtered out by using change variables. We use the change in log loan spreads from year $t-1$ to year t as the dependent variable and regress it on contemporaneous changes in G-index scores and other control variables from year $t-1$ to year t . Because the change regression requires that borrowers have at least one bank loan outstanding in both year $t-1$ and year t , our analysis in this subsection is conducted with a smaller sample of 2,240 observations.⁴⁶

Table VIII reports the results. In column (1), we find that the coefficient estimate on the interaction term between the G-index change and *Family firm* is positive and significant (p -value = 0.07), while the G-index change is not significantly related to loan spreads for nonfamily firms.

⁴⁶ When there are multiple loans in a given year, we use the first loan observation in the analysis. Our results are qualitatively similar if we use a randomly selected loan in the analysis.

These findings confirm our earlier results that banks are concerned about strong takeover defenses when firms are under family control.

In column (2), we separate the family firm indicator into indicators for family firms with and without control-enhancing mechanisms. We find that the coefficient estimate on the G-index change (0.005) is insignificantly positive, while the coefficient estimate on its interaction with the indicator for family firms with control-enhancing mechanisms (0.093) is significantly positive (p -value = 0.04). The sum of the coefficient estimates on the G-index change and its interaction with the indicator for family firms with control-enhancing mechanisms is significantly different from zero (p -value of F -test = 0.02), indicating a significant increase in loan spreads when family firms add an antitakeover provision. In contrast, the coefficient estimate (0.006) on the interaction term between the G-index change and the indicator for family firms without control-enhancing mechanisms is positive and insignificant, and the sum of the coefficient estimates is not significantly different from zero. These results suggest that the adverse effect of having more ATPs is magnified in family firms, especially when they have control-enhancing mechanisms, in line with our prior results. Therefore, our key findings in previous sections appear to be robust to controlling for time-invariant omitted variables.

B. Effects of Individual Components of ATPs on the Cost of Bank Loans

In this subsection we examine the impact of individual components of ATPs on the cost of bank debt. Specifically, we repeat our prior analyses by replacing *High G-index* with indicators for six individual components of G-index as identified by Bebchuck, Cohen, and Ferrell (2009)

and the score for other components of the G-index as computed by subtracting the sum of the scores for the six components from the full G-index score.⁴⁷

In untabulated tests, we find that only the coefficient estimate on the staggered-board indicator is negative and significant at the 1% level for the full sample. When we interact the indicators for the six individual components with *Family firm*, the coefficient estimates on the interaction terms between *Family firm* and the indicator for limits to bylaw amendments and between *Family firm* and the indicator for poison pills are positive and significant. In contrast, the coefficient estimate on the interaction term between *Family firm* and the indicator for limits to charter amendments is negative and significant.

We also interact each of these provision indicators with indicators for family firms with (without) control-enhancing mechanisms and reestimate the regressions. We find that the coefficient estimate on the interaction term between the indicator for staggered boards and the indicator for family firms with control-enhancing mechanisms is positive and significant (p -value = 0.06), while the interaction involving the indicator for family firms without control-enhancing mechanisms is insignificant. Similarly, the coefficient estimate on the interaction term between the indicator for limits to bylaw amendments and the indicator for family firms with control-enhancing mechanisms is positive and significant at the 1% level, while the coefficient estimate on the interaction involving the indicator for family firms without control-enhancing mechanisms is insignificant. For the interaction terms involving an indicator for poison pills, the coefficient estimates on both interaction terms are positively and significantly associated with loan spreads. In contrast, the coefficient estimate on the interaction between the indicator for

⁴⁷ These six provisions include staggered boards, limits to bylaw amendments, limits to charter amendments, supermajority requirements for mergers, poison pills, and golden parachutes. Bebchuck, Cohen, and Ferrell (2009) argue that these provisions play a significant role in driving the correlation between G-index and firm value, and provide detailed discussion on the effects of these individual components on firm value.

limits to charter amendments and the indicator for family firms with control-enhancing mechanisms is negative and significant.

Although it is beyond the scope of this study to disentangle the impacts of the individual *G*-index components on the cost of bank loans, our findings suggest that the different antitakeover provisions have different impacts on the cost of bank loans and the effects are not uniform across firms with different ownership structures.

C. Effects of Managerial Ownership on the Cost of Bank Loans

Thus far, our results show that the positive impact of ATPs on the cost of bank debt is largely limited when ATPs are combined with family control. In this subsection we examine whether the level of managerial ownership in nonfamily firms affects the role of ATPs in reducing the cost of bank debt. Specifically, we classify managerial ownership in nonfamily firms into five ranges as in Morck, Shleifer, and Vishny (1988), 0-5%, 5-15%, 15-25%, 25-50%, and over 50%, and create an indicator for each ownership range. We then estimate regressions of loan spreads on these indicators and other control variables. We find that none of these ownership indicators or their interactions with *High G-index* is significant while the coefficient estimate on *High G-index* is negative and significant at the 1% level. These findings suggest that the unique nature of family control itself, not management ownership, is an important factor that influences the role of ATPs in mitigating shareholder-debtholder conflicts and reducing the cost of bank debt.⁴⁸

D. Controlling for Banker Directors and Governance Variables

⁴⁸ Several studies show that family controlling owners are different from other controlling owners. For example, Lins, Volpin, and Wagner (2013) argue that family-controlled firms have stronger incentives to make survival-oriented corporate decisions than do other nonfamily controlled firms during the crisis. They show that family-controlled firms cut investment more due to their unique incentives magnified by the unexpected liquidity shock from the financial crisis and the investment cuts are associated with their underperformance.

The negative association between family control and the cost of bank loans can also be subject to other omitted variable bias problems. For example, it is possible that the prevalence of banker directors who provide firms expertise in raising debt (Booth and Deli (1999)) are a source of family firms' lower cost of bank loans. Prior studies show that bankers are more likely to join boards of firms in which the conflicts of equity and debt claimants are lower. As family firms are less likely to encounter shareholder-creditor conflicts compared to nonfamily firms (Anderson, Mansi, and Reeb (2003)), bankers may have greater incentives to join boards of family firms. To address this concern, we check whether bank directors are more prevalent in family firms.⁴⁹ In untabulated logit analysis, we find that family firms, especially those without control-enhancing mechanisms, are indeed more likely to have commercial bankers on their boards. We then examine whether the presence of bank directors helps family firms reduce the cost of bank loans by including in the Table III regressions an indicator that takes the value of one if a commercial banker sits on the board and zero otherwise. We find that our key results in Table III do not change after controlling for this indicator, while the banker-director indicator is insignificantly negatively related to loan spreads.

We also control for other governance variables such as board size, board independence, and the presence of institutional blockholders in the regressions. Our key results remain unchanged.

E. Other Robustness Tests

⁴⁹ We identify commercial banker directors using director information (e.g., the name of a director's current primary employer and her employment titles) reported in RiskMetrics and BoardEx. We follow the filtering process of Guner, Malmendier, and Tate (2008) and classify the directors as banker directors only when they serve as an executive officer of a bank, not as its board member. We also require the name of a bank director's employer to be included in the FDIC list of U.S. chartered commercial banks. Out of 1,775 (3,921) family (nonfamily) firm-year observations, we identify 237 (489) firm-year observations with at least one banker director.

We perform several additional robustness tests. First, we examine whether our results are driven by sample selection bias as our data on loan security are available only for 59% of the sample. To do so, we follow Chava, Livdan, and Purnanandam (2009) and run a probit regression using the loan security indicator as the dependent variable and all other control variables used in the Table III as the independent variables. We then reestimate the Table III regressions including the predicted value from this probit regression. Our results do not change.

Second, to address concerns that loan spreads and maturity are simultaneously determined in a debt contract, we follow Graham, Li, and Qiu (2008) and estimate a two-stage least squares regression using a firm's asset maturity as an instrumental variable. Graham, Li, and Qiu (2008) argue that asset maturity is an appropriate instrument for debt maturity since asset maturity and debt maturity are positively and significantly correlated with each other while asset maturity does not affect the residuals of loan spreads. The results are qualitatively similar.

Third, individual loans in the same deal facility may not be independent because loan contract terms are a part of deal-level negotiations. Thus, statistical significance can be overstated by treating loans independently. To alleviate this concern, following prior studies (Graham, Li, and Qiu (2008), Chava, Livdan, and Purnanandam (2009)), we reestimate the Table III regressions using deal-level data, controlling for year and industry fixed effects.⁵⁰ The results remain qualitatively the same.

Finally, we replace *High G-index* with Bebchuk, Cohen, and Ferrell's (2009) *High E-index*, which uses six components of the G-index to measure a firm's takeover defenses, and reestimate the Table III regressions. We obtain similar results.

VI. Summary and Conclusion

⁵⁰ We aggregate loans into a deal-level observation using loan commitment size as a weight.

In this paper we seek to improve our understanding of the role of antitakeover provisions (ATPs) as a device to alleviate shareholder-debtholder conflicts by investigating how their role differs between family and nonfamily firms. Prior literature focuses on the positive role of ATPs in mitigating potential conflicts between shareholders and creditors, and shows that ATPs benefit creditors, thus lowering a firm's cost of debt. However, the literature on family firms shows that the nature of agency problems is different between family and nonfamily firms, suggesting that creditors view strong ATPs combined with family control to have a different impact on their risk. We investigate this unexplored issue under two competing hypotheses, namely, the interest alignment hypothesis and the conflicts of interest hypothesis. We find strong support for the conflicts of interest hypothesis, which posits that family ownership intensifies the agency problems that ATPs create and thus banks charge higher loan spreads to family firms with strong ATPs.

More specifically, we find that while nonfamily firms with more ATPs enjoy a lower cost of debt, family firms with more ATPs do not. The adverse effect of ATPs on the cost of debt for family firms is particularly severe when they adopt control-enhancing mechanisms that allow family shareholders to have control rights that exceed their cash flow rights. These results are more pronounced when family firms are largely insulated from internal and external disciplinary mechanisms and thus have more severe agency problems: ATPs do not reduce (and sometimes increase) the cost of bank loans for family firms, especially when loans are unsecured or do not have covenants, when family firms face low product market competition or have low leverage, or when CEOs of family firms exert excess power.

Overall, these results suggest that the level of a family firm's agency conflicts arising from its unique ownership structure and family shareholders' incentives to maintain control should be

taken into account in assessing the net impact of ATPs on the cost of debt. The results also suggest that the benefits of ATPs as a device to mitigate shareholder-debtholder conflicts can be ensured only when adequate corporate governance mechanisms are in place.

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Table I
Sample Distribution

The sample consists of 5,068 firm-year observations for the period 1996-2006. Our initial sample includes all firms covered in *RiskMetrics*. We then restrict our sample to those firms whose loans are covered in *Dealscan* and whose stock returns and financial data are available in *CRSP* and *Compustat*, respectively. Finally, we exclude firms in the financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) industries. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in the top management.

Panel A. Sample distribution by year

Year	Full sample	Family firms		Nonfamily firms	
	N	N	%	N	%
1996	325	117	36.00	208	64.00
1997	446	154	34.53	292	65.47
1998	412	171	41.50	241	58.50
1999	472	175	37.08	297	62.92
2000	490	199	40.61	292	59.59
2001	559	212	37.92	347	62.08
2002	471	174	36.94	297	63.06
2003	501	178	35.53	323	64.47
2004	500	167	33.40	333	66.60
2005	476	177	37.18	299	62.82
2006	416	132	31.73	284	68.27
Total	5,068	1,856	36.62	3,212	63.38

Panel B. Sample distribution by industry (two-digit SIC code)

Industries	Full sample	Family firms		Nonfamily firms	
	N	N	%	N	%
Agriculture, forestry, and fishing (01-09)	7	3	42.86	4	57.14
Mining and construction (10-17)	396	141	35.61	255	64.39
Manufacturing (20-39)	2,769	904	32.65	1,865	67.35
Transportation and Communications (40-48)	304	115	37.83	189	62.17
Wholesale and retail trade (50-59)	856	387	45.21	469	54.79
Services (70-89)	736	306	41.58	430	58.42
Total	5,068	1,856	36.62	3,212	63.38

Table II
Summary Statistics

The sample consists of 8,006 bank loans issued to 1,549 firms during the period 1996 to 2006. Our initial sample includes all firms covered in *RiskMetrics*. We then restrict our sample to those firms whose loans are covered in *Dealscan* and whose stock returns and financial data are available in *CRSP* and *Compustat*, respectively. Finally, we exclude firms in the financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) industries. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. The Appendix provides detailed descriptions of the variables.

	All firms		Family firms: A		Nonfamily firms: B		Test of difference: A-B (<i>p</i> -value)	
	Mean	Median	Mean	Median	Mean	Median	<i>t</i> -test	Wilcoxon z-test
Loan characteristics								
Loan spread (basis points)	128.22	100.00	127.70	100.00	128.52	93.75	(0.739)	(0.049)
Loan commitment size (\$ millions)	483.80	250.00	417.90	204.00	521.64	250.00	(0.000)	(0.000)
Loan maturity (months)	43.33	48.00	43.29	48.00	43.36	48.00	(0.907)	(0.758)
Number of lenders	10.78	8.00	10.33	8.00	11.04	8.00	(0.002)	(0.002)
Performance pricing (indicator)	0.53	1.00	0.54	1.00	0.53	1.00	(0.165)	(0.165)
Term loan (indicator)	0.20	0.00	0.20	0.00	0.20	0.00	(0.978)	(0.978)
Macro variables								
Credit spread (basis points)	0.85	0.81	0.85	0.81	0.85	0.81	(0.770)	(0.904)
Term spread (basis points)	1.11	0.78	1.05	0.74	1.13	0.80	(0.001)	(0.001)
Firm characteristics								
G-index	9.28	9.00	8.56	8.00	9.68	10.00	(0.000)	(0.000)
Market capitalization (\$ billions)	7.66	1.77	6.03	1.56	8.61	1.84	(0.000)	(0.000)
Firm age	29.66	25.00	24.19	19.00	32.80	31.00	(0.000)	(0.000)
EBITDA/sales	0.16	0.14	0.17	0.14	0.16	0.14	(0.007)	(0.253)
Leverage	0.28	0.27	0.28	0.27	0.28	0.27	(0.532)	(0.648)
Z-score	1.98	1.82	2.13	1.98	1.89	1.75	(0.000)	(0.000)
Board size	9.72	9.00	9.76	9.00	9.69	9.00	(0.226)	(0.103)
Board independence (%)	0.65	0.67	0.56	0.57	0.70	0.75	(0.000)	(0.000)
CEO characteristics								
CEO-chair duality (indicator)	0.70	1.00	0.65	1.00	0.72	1.00	(0.000)	(0.000)
CEO age	55.18	55.00	55.34	55.00	55.09	55.00	(0.119)	(0.954)
CEO tenure	7.02	5.00	9.74	7.00	5.48	4.00	(0.000)	(0.000)
CEO pay (\$ millions)	5.23	2.97	4.65	2.39	5.57	3.37	(0.000)	(0.000)
Family firm characteristics								
Family firm (indicator)	0.37	0.00	1.00	1.00	-	-	-	-
Family firm with control-enhancing mechanisms (indicator)	-	-	0.73	1.00	-	-	-	-
Founder CEO firm (indicator)	-	-	0.36	1.00	-	-	-	-
Family CEO firm (indicator)	-	-	0.59	1.00	-	-	-	-

Table III
Family Control, ATPs, and the Cost of Bank Loans

The table presents estimates of OLS regressions in which the dependent variable is the log the of all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick, (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Independent variables	(1)	(2)	(3)	(4)
High G-index (indicator): a	-0.090*** (0.002)		-0.146*** (0.000)	-0.147*** (0.000)
Family firm (indicator): b		-0.029 (0.310)	-0.101*** (0.005)	
Family firm with control-enhancing mechanisms (indicator): c				-0.134*** (0.001)
Family firm without control-enhancing mechanisms (indicator): d				-0.014 (0.799)
a×b			0.145** (0.014)	
a×c				0.209*** (0.002)
a×d				-0.019 (0.843)
Log (market cap)	-0.226*** (0.000)	-0.227*** (0.000)	-0.227*** (0.000)	-0.228*** (0.000)
EBITDA/sales	-0.502*** (0.000)	-0.495*** (0.000)	-0.482*** (0.000)	-0.481*** (0.000)
Leverage	0.479*** (0.000)	0.466*** (0.000)	0.477*** (0.000)	0.484*** (0.000)
Z-score	-0.121*** (0.000)	-0.123*** (0.000)	-0.118*** (0.000)	-0.116*** (0.000)
Log (firm age)	-0.075*** (0.000)	-0.088*** (0.000)	-0.075*** (0.000)	-0.073*** (0.000)
Log (loan maturity)	0.037** (0.014)	0.036** (0.017)	0.036** (0.015)	0.035** (0.018)
Number of lenders in syndicate	-0.001 (0.239)	-0.002 (0.197)	-0.002 (0.214)	-0.002 (0.194)
Performance pricing (indicator)	-0.083*** (0.000)	-0.086*** (0.000)	-0.082*** (0.000)	-0.083*** (0.000)
Term loan (indicator)	0.430*** (0.000)	0.432*** (0.000)	0.429*** (0.000)	0.429*** (0.000)
Credit spread	0.167** (0.030)	0.168** (0.027)	0.170** (0.027)	0.175** (0.023)
Term spread	0.027 (0.144)	0.025 (0.176)	0.027 (0.156)	0.026 (0.160)
Constant	5.956*** (0.000)	6.017*** (0.000)	6.027*** (0.000)	6.042*** (0.000)
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	7,512	7,579	7,512	7,512
Adjusted <i>R</i> ²	0.554	0.554	0.555	0.557

Table IV
Family Control, ATPs, and the Cost of Bank Loans:
Subsample Analyses according to Loan Security, Covenants, and Dividend Payment Flexibility

The table presents estimates of OLS regressions in which the dependent variable is the log the of all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. In Panel A, “Secured” (“Unsecured”) loans are those loans that are (are not) secured by collateral. In Panel B, “Covenant” (“No covenant”) loans are those loans that include at least one (none) of debt sweep, equity sweep, and assets sweep covenants in their contracts. Panel C uses only loans without dividend restriction covenants. “Nimble states” loans are loans to borrowing firms incorporated in the following states: Arizona, Delaware, Kansas, Louisiana, Maine, Nevada, New Hampshire, Oklahoma, Rhode Island, and Vermont. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick, (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Subsample analysis according to loan security

Independent variables	Unsecured (1)	Secured (2)	Unsecured (3)	Secured (4)
High G-index (indicator): a	-0.172*** (0.000)	0.022 (0.503)	-0.173*** (0.000)	0.022 (0.503)
Family firm (indicator): b	-0.105** (0.045)	-0.039 (0.276)		
Family firm with control-enhancing mechanisms (indicator): c			-0.142** (0.012)	-0.048 (0.264)
Family firm without control-enhancing mechanisms (indicator): d			0.009 (0.902)	-0.023 (0.637)
a×b	0.184*** (0.005)	0.012 (0.842)		
a×c			0.259*** (0.000)	-0.006 (0.935)
a×d			-0.042 (0.730)	0.040 (0.641)
Control variables (same as Table III)	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:				
a × b	0.005			
a × c			0.000	
a × d			0.438	
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	2,229	2,524	2,229	2,524
Adjusted <i>R</i> ²	0.487	0.346	0.490	0.346

Panel B: Subsample analysis according to covenants

Independent variables	No covenant (1)	Covenant (2)	No covenant (3)	Covenant (4)
High G-index (indicator): a	-0.157*** (0.000)	-0.048 (0.256)	-0.159*** (0.000)	-0.047 (0.259)
Family firm (indicator): b	-0.122*** (0.003)	-0.038 (0.430)		
Family firm with control-enhancing mechanisms (indicator): c			-0.172*** (0.000)	-0.037 (0.513)
Family firm without control-enhancing mechanisms (indicator): d			0.017 (0.784)	-0.041 (0.538)
a×b	0.167** (0.011)	0.042 (0.602)		

a×c			0.268*** (0.000)	-0.007 (0.936)
a×d			-0.111 (0.221)	0.130 (0.336)

Control variables (same as Table III)	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:				
a × b	0.050			
a × c			0.000	
a × d			0.015	
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	5,551	1,961	5,551	1,961
Adjusted <i>R</i> ²	0.523	0.419	0.526	0.419

Panel C: Subsample analysis according to nimble states

Independent variables	Nimble states	No nimble states	Nimble states	No nimble states
	(1)	(2)	(3)	(4)
High G-index (indicator): a	-0.301*** (0.000)	-0.172 (0.102)	-0.301*** (0.000)	-0.166 (0.118)
Family firm (indicator): b	-0.095 (0.241)	0.016 (0.907)		
Family firm with control-enhancing mechanisms (indicator): c			-0.115 (0.184)	0.010 (0.945)
Family firm without control-enhancing mechanisms (indicator): d			0.012 (0.925)	0.039 (0.867)
a×b	0.277** (0.016)	0.000 (1.000)		
a×c			0.305** (0.012)	0.131 (0.387)
a×d			0.142 (0.477)	-0.271 (0.377)
Control variables (same as Table VI)	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:				
a × b	0.044			
a × c			0.248	
a × d			0.158	
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	820	406	820	406
Adjusted <i>R</i> ²	0.573	0.555	0.572	0.560

Table V
Family Control, ATPs, and the Cost of Bank Loans:
Subsample Analyses according to Product Market Competition and Leverage

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. “Low competition” (“High competition”) indicates that a firm operates in the industry whose Herfindahl index is above (below) the sample median, where the Herfindahl index is calculated as the sum of the squared revenue share of each firm in the same four-digit-SIC industry. “Low leverage” (“High leverage”) indicates that a firm’s leverage ratio is below (above) the sample median. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Independent variables	Low competition	High competition	Low competition	High competition	Low Leverage	High Leverage	Low leverage	High Leverage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High G-index (indicator): a	-0.188*** (0.000)	-0.090* (0.086)	-0.188*** (0.000)	-0.092* (0.078)	-0.168*** (0.000)	-0.126*** (0.007)	-0.170*** (0.000)	-0.126*** (0.007)
Family firm (indicator): b	-0.190*** (0.000)	-0.015 (0.755)			-0.134*** (0.007)	-0.083* (0.078)		
Family firm with control-enhancing mechanisms (indicator): c			-0.204*** (0.001)	-0.052 (0.324)			-0.183*** (0.002)	-0.096** (0.047)
Family firm without control-enhancing mechanisms (indicator): d			-0.147** (0.046)	0.075 (0.278)			-0.019 (0.750)	-0.048 (0.558)
a×b	0.260*** (0.001)	-0.009 (0.912)			0.152** (0.041)	0.103 (0.200)		
a×c			0.277*** (0.004)	0.101 (0.240)			0.204** (0.022)	0.162* (0.074)
a×d			0.208* (0.079)	-0.255* (0.053)			0.024 (0.800)	-0.031 (0.821)
Control variables (same as Table III)	Y	Y	Y	Y	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:								
a × b	0.000				0.419			
a × c			0.011				0.536	
a × d			0.000				0.564	
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Number of observations	3,599	3,561	3,599	3,561	3,764	3,748	3,764	3,748
Adjusted <i>R</i> ²	0.586	0.541	0.586	0.543	0.534	0.576	0.536	0.577

Table VI
Family Control, ATPs, and the Cost of Bank Loans:
Subsample Analyses according to CEO-Chair Duality, CEO Age, and CEO Compensation

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. In Panel A, “CEO-chair duality” (“no CEO-chair duality”) indicates that a firm’s CEO is also (is not) the chairman of the board. In Panel B, “Old CEO” (“Young CEO”) indicates that the age of a firm’s CEO is above (below) the sample median. In Panel C, “High CEO pay” (“Low CEO pay”) indicates that the level of a firm’s excess CEO compensation is above (below) the sample median. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Subsample analysis according to CEO-chair duality

Independent variables	CEO-chair duality	No CEO-chair duality	CEO-chair duality	No CEO-chair duality
	(1)	(2)	(3)	(4)
High G-index (indicator): a	-0.154*** (0.000)	-0.123** (0.017)	-0.153*** (0.000)	-0.125** (0.016)
Family firm (indicator): b	-0.067 (0.133)	-0.160*** (0.002)		
Family firm with control-enhancing mechanisms (indicator): c			-0.104** (0.044)	-0.180*** (0.002)
Family firm without control-enhancing mechanisms (indicator): d			0.029 (0.651)	-0.104 (0.153)
a×b	0.175** (0.016)	0.071 (0.347)		
a×c			0.226*** (0.006)	0.124 (0.144)
a×d			0.035 (0.781)	-0.037 (0.748)
Control variables (same as Table III)	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:				
a × b		0.096		
a × c				0.154
a × d				0.464
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	5,196	2,316	5,196	2,316
Adjusted <i>R</i> ²	0.557	0.569	0.558	0.570

Panel B: Subsample analysis according to CEO age

Independent variables	Old CEO	Young CEO	Old CEO	Young CEO
	(1)	(2)	(3)	(4)
High G-index (indicator): a	-0.151*** (0.002)	-0.148*** (0.000)	-0.152*** (0.002)	-0.147*** (0.000)
Family firm (indicator): b	-0.141*** (0.007)	-0.064 (0.149)		
Family firm with control-enhancing mechanisms (indicator): c			-0.166*** (0.005)	-0.109** (0.024)
Family firm without control-enhancing mechanisms (indicator): d			-0.065 (0.353)	0.038 (0.580)
a×b	0.231*** (0.003)	0.067 (0.374)		
a×c			0.260***	0.164*

			(0.003)	(0.064)
a×d			0.143	-0.167
			(0.251)	(0.147)

Control variables (same as Table III)	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:				
a × b		0.007		
a × c				0.161
a × d				0.001
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	3,685	3,803	3,685	3,803
Adjusted <i>R</i> ²	0.555	0.569	0.555	0.571

Panel C: Subsample analysis according to CEOs' excess compensation

Independent variables	High CEO pay (1)	Low CEO pay (2)	High CEO pay (3)	Low CEO pay (4)
High G-index (indicator): a	-0.146*** (0.001)	-0.131*** (0.008)	-0.150*** (0.001)	-0.132*** (0.008)
Family firm (indicator): b	-0.096** (0.040)	-0.118** (0.026)		
Family firm with control-enhancing mechanisms (indicator): c			-0.175*** (0.000)	-0.121** (0.049)
Family firm without control-enhancing mechanisms (indicator): d			0.065 (0.354)	-0.109* (0.073)
a×b	0.213*** (0.008)	0.091 (0.242)		
a×c			0.386*** (0.000)	0.084 (0.350)
a×d			-0.195 (0.185)	0.110 (0.328)
Control variables (same as Table III)	Y	Y	Y	Y
Test (<i>p</i> -value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0:				
a × b		0.059		
a × c				0.000
a × d				0.005
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose indicators	Y	Y	Y	Y
Number of observations	3,317	3,323	3,317	3,323
Adjusted <i>R</i> ²	0.555	0.559	0.561	0.559

Table VII
Alternative Classifications of Family Firms

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. A founder CEO family firm is a family firm in which a firm's founder serves as a CEO and a nonfounder CEO family firm is a family firm in which either a descendant of the founder or a professional manager serves as a CEO. A founder-controlled family firm is a family firm in which only a founder or founder-generation family member is actively involved in the management as an officer, a board of director, or a blockholder, and a descendant-controlled family firm is a family firm in which at least one second- or later-generation founding family member is active in the firm. Family CEO firm corresponds to family firms in which either a founder or a descendant serves as CEO, and Nonfamily CEO firm corresponds to family firms managed by an outside professional CEO. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the construction of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Independent variables	(1)	(2)	(3)	(4)
High G-index (indicator): a	-0.152*** (0.000)	-0.152*** (0.000)	-0.149*** (0.000)	-0.150*** (0.000)
Founder CEO family firm (indicator): b	-0.009 (0.816)			
Nonfounder CEO family firm (indicator): c	-0.163*** (0.000)			
Founder-controlled family firm (indicator): d		-0.049 (0.209)		
Descendant-controlled family firm (indicator): e		-0.214*** (0.000)		
Family CEO firm (indicator): f			-0.060 (0.121)	
Nonfamily CEO family firm (indicator): g			-0.163*** (0.002)	
Family CEO firm with control-enhancing mechanisms (indicator): h				-0.119*** (0.007)
Family CEO firm without control-enhancing mechanisms (indicator): i				0.074 (0.172)
Nonfamily CEO family firm with control-enhancing mechanisms (indicator): j				-0.155*** (0.012)
Nonfamily CEO family firm without control-enhancing mechanisms (indicator): k				-0.198** (0.022)
a×b	0.097 (0.257)			
a×c	0.194*** (0.006)			
a×d		0.111* (0.090)		
a×e		0.241*** (0.008)		
a×f			0.113 (0.127)	
a×g			0.199*** (0.009)	
a×h				0.183** (0.034)
a×i				-0.044 (0.727)
a×j				0.245*** (0.005)
a*k				0.098 (0.457)

Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Loan purpose fixed effects	Y	Y	Y	Y
Number of observations	7,512	7,512	7,512	7,512
Adjusted R^2	0.557	0.557	0.556	0.558

Table VIII
Family Control, ATPs, and the Cost of Bank Loans: Change Regressions

The table presents estimates of OLS regressions in which the dependent variable is the change in the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent from year $t-1$ to year t . ΔG -index is the contemporaneous change in G-index score from year $t-1$ to year t , where G-index score is the sum of the number of antitakeover provisions that a firm adopts (Gompers, Ishii, and Metrick (2003)). Changes in other control variables are the contemporaneous changes in the variables from year $t-1$ to year t . Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. p -values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ^{***}, ^{**}, and ^{*} denote statistical significance at the 1%, 5%, and 10% level, respectively.

Independent variables	(1)	(2)
ΔG -index: a	0.005 (0.793)	0.005 (0.793)
Family firm (indicator): b	-0.007 (0.697)	
Family firm with control-enhancing mechanisms (indicator): c		-0.013 (0.547)
Family firm without control-enhancing mechanisms (indicator): d		0.011 (0.724)
a x b	0.076* (0.066)	
a x c		0.093** (0.041)
a x d		0.006 (0.932)
Δ Leverage	0.137 (0.439)	0.135 (0.444)
Δ Log (market cap)	-0.035 (0.246)	-0.035 (0.241)
Δ EBITDA/sales	0.060 (0.854)	0.056 (0.865)
Constant	0.057*** (0.000)	0.057*** (0.000)
Number of observations	2,240	2,240
Adjusted R^2	0.001	0.001

Appendix

The Appendix provides a detailed description of the construction of all the variables used in the tables.

Variable	Description	Source
Loan characteristics		
Covenant (indicator)	One if a loan has any of the following three covenants: debt sweep, equity sweep, and assets sweep covenants, and zero otherwise	Dealscan
Credit spread (basis points)	Difference in spreads between BAA and AAA yields	Dealscan
Loan commitment size (\$ millions)	Commitment amount of loan	Dealscan
Loan maturity (months)	Loan maturity in months	Dealscan
Loan purpose (indicator)	One if a loan has a given purpose, including debt repayment, general corporate purposes, financing acquisitions, and commercial paper backup, and zero otherwise	Dealscan
Loan spread (basis points)	All-in-spread-drawn (AISD), a rate the borrower pays in basis points over LIBOR or the LIBOR equivalent for each dollar of loan drawn	Dealscan
Log (loan spread)	Natural log of loan spread	Dealscan
Number of lenders	Total number of lenders in the loan syndicate	Dealscan
Performance pricing (indicator)	One if the loan has the performance pricing clause and zero otherwise	Dealscan
Secured (indicator)	One if the loan facility is secured by collateral and zero otherwise	Dealscan
Term loan (indicator)	One if the loan is a term loan and zero otherwise	Dealscan
Term spread (basis points)	Difference in spreads between 10-year and 1-year treasury notes	Dealscan
Firm characteristics		
Board size	Number of directors sitting on a board	RiskMetrics
Board independence (%)	The ratio of the number of independent directors to the total number of directors on the board	RiskMetrics
EBITDA/sales	Operating income before depreciation/sales	Compustat
Firm age	Max (years in CRSP, years in Compustat)	Compustat, CRSP
High G-index (indicator)	One if the number of antitakeover defenses a firm adopts (Gompers, Ishii, and Metrick (2003)) is higher than the sample median and zero otherwise	RiskMetrics
Leverage	(long-term debt + debt in current liabilities) / total assets	Compustat
Market capitalization (\$ billions)	Market value of equity	Compustat

Z-score	Modified Altman's (1968) Z-score = $(1.2 \text{working capital} + 1.4 \text{retained earnings} + 3.3 \text{EBIT} + 0.999 \text{sales}) / \text{total assets}$	Compustat
CEO characteristics		
CEO-chair duality (indicator)	One if CEO is also the chairman of the board and zero otherwise	RiskMetrics
CEO pay	ExecuComp variable (TDC1) that includes salary, bonus, restricted stock awards, stock option grants, long-term incentive payouts, and all others	ExecuComp
High CEO pay (indicator)	One if the level of a firm's excess CEO compensation is above the sample median and zero otherwise. The excess CEO compensation is computed by the residual estimated from the following OLS regression: $\text{Log (CEO compensation)} = \text{constant} + \text{log (market cap)} + \text{ROA} + \text{book-to-market ratio} + \text{standard deviation (ROA)} + \text{standard deviation (stock returns)} + \text{year}$ and Fama and French (1997) 48 industry dummies. CEO compensation is ExecuComp variable (TDC1) that includes salary, bonus, restricted stock awards, stock option grants, long-term incentive payouts, and all others. (Faleye, Hoitash, Hoitash (2011))	ExecuComp
Log (CEO age)	Natural log of CEO age	RiskMetrics
Log (CEO tenure)	Natural log of the number of years the CEO has been in office. Corrections are made for missing or incorrect information based on the list from Guthrie, Sokolowsky, and Wan (2010)	ExecuComp
Old CEO (indicator)	One if CEO's age is above the sample median and zero otherwise.	RiskMetrics
Young CEO (indicator)	One if CEO's age is below the sample median and zero otherwise.	RiskMetrics
Family firm characteristics		
Descendant-controlled family firm (indicator)	One for a firm in which at least one of second or later generation founding family members is active in the firm as a manager, a director, or a blockholder, and zero otherwise	Various sources
Family firm (indicator)	One for a firm in which founding family members, either individually or as a group, have block equity ownership, or at least one founding family member sits on the board or	Various sources

Founder CEO family firm (indicator)	works in the top management, and zero otherwise One for a family firm in which its founder serves as CEO and zero otherwise	Various sources
Founder-controlled family firm (indicator)	One for a family firm in which only a founder or founder-generation family member is active in the firm as a manager, a director, or a blockholder, and zero otherwise	Various sources
Family firm with control-enhancing mechanisms (indicator)	One for a family firm that adopts voting or control mechanisms, such as multiple share classes, pyramids, cross-holdings, and voting agreements, and zero otherwise	Various sources
Family CEO firm (indicator)	One for a family firm in which either a founder or a descendant of a founder serves as a CEO, and zero otherwise	Various sources
Nonfamily CEO family firm (indicator)	One for a family firm in which an outside professional CEO manages the firm, and zero otherwise	Various sources
Nonfounder CEO family firm (indicator)	One for a family firm in which either a descendant of the founder or a professional manager serves as a CEO, and zero otherwise	Various sources
Macro variables		
Credit spread (basis points)	Difference in spreads between BAA and AAA yields	Federal Reserve Bank
Term spread (basis points)	Difference in spreads between 10-year and 1-year treasury notes	Federal Reserve Bank

Essay Three: The Impact of Governance Reform on Board Functioning and Firm Value: Evidence from the Post-SOX Directorial Labor Market

Abstract

We investigate how governance reform affects board functioning and firm value through the labor market channel. We find that the presence of unseasoned independent directors (UIDs) after the 2002 enactment of the Sarbanes-Oxley Act (SOX) is more common in firms not compliant with the board and committee independence provisions. Further, the likelihood of UIDs being appointed to monitoring committees is significantly higher in the post-SOX period. Although investors on average react negatively to firm decisions to appoint UIDs in the pre-SOX period, this negative reaction is completely negated in the post-SOX era. We also find that the increased presence of UIDs in post-SOX boardrooms does not lead to low quality board monitoring and advising or poor firm performance. In some corporate events such as CEO turnover and financial reporting decisions, we find that boards with UIDs perform better than boards without UIDs. Overall, our findings highlight positive impact of governance reform on board functioning and firm value through its influence on directorial labor markets.

JEL Classification: G32, G34, J4

Keywords: Unseasoned independent directors, Labor market, Sarbanes-Oxley Act, Board of director, Monitoring and advisory roles

Introduction

Today's boards are small and require every director to pull his or her weight. A new, first-time director may slow down or weaken effectiveness.

– “Board talent getting scarcer,” *Businessweek*, January 28, 2008

Prior literature shows that the Sarbanes-Oxley Act (SOX) of 2002 has set new trends in corporate boardrooms but has also had unintended consequences. Linck, Netter, and Yang (2009), for example, find that SOX has led to an imbalance in the directorial labor market, as the declining supply of independent directors has not been able to meet firms' growing demand for such directors. Chen and Moers (2012) show that the shortage in the directorial labor market has been largely filled by new independent directors entering the directorial labor market for the first time. Anecdotal evidence also suggests that in the post-SOX corporate boardroom, directors with diverse backgrounds have been increasingly replacing positions once dominated by top business executives.⁵¹

The influx of relatively inexperienced directors has raised questions about the impact of this trend on board functioning. Some argue that the increased presence of inexperienced directors will make boards less effective, while others claim that more diversified boards will improve corporate decisions and business operations. However, despite increasing interest in the presence of inexperienced directors on the board, the literature has little to say about the effectiveness of unseasoned independent directors (UIDs), independent directors who are appointed as directors on corporate boards for the first time, and their effect on firm value. In this paper, we provide new evidence on how these UIDs, who have become an important source of labor supply since the enactment of SOX, affect board functioning and firm value.

⁵¹ For example, index fund manager Legal & General Investment Management's move to recruit board directors without prior board experience illustrates firms' efforts to increase diversity in the boardroom. (“LGIM calls for greater boardroom diversity,” *Financial Times*, December 5, 2011.)

As suggested above, there are two competing views about the role of UIDs as monitors and advisors. On the one hand, the negative view of UIDs posits that they may be worse monitors and advisors than seasoned independent directors, particularly in the post-SOX period when experienced director candidates are in short supply (Linck, Netter, and Yang (2009), Yermack (2006)). First, UIDs lack experience in the boardroom. This lack of experience puts them at a disadvantage as they need to learn how boards function and how to interact with management and other members of the board, which takes time. Moreover, UIDs tend to be young non-CEO executives or individuals who lack enterprise-wide experience. Although some UIDs have expertise in certain disciplines such as finance, accounting, law, or consulting, the lack of enterprise-wide experience makes it difficult for them to consider company matters at a strategic level, and may also make them inclined to defer to the CEO and other experienced directors when making board decisions. Second, UIDs tend to lack authority and social connections due to their status and exposure to the corporate world. UIDs may therefore need the help of incumbent CEOs and other seasoned directors for their career advancement, making them less independent than seasoned independent directors. Moreover, their lack of connections is likely to make them less valuable as outside directors as they cannot serve as an important source of business contacts (Mace (1986)). Finally, due to a tight directorial labor market in the post-SOX period, some firms may appoint ineffective UIDs simply to conform to the minimum requirements of board independence, without regard to their ability.

On the other hand, the positive view of UIDs holds that UIDs perform a value-enhancing monitoring and advisory role, especially in the post-SOX era. First, UIDs tend to be more independent than seasoned directors. Reform-minded newcomers can add value by disrupting the old boys' network in the boardroom and providing more independent views in setting corporate agenda (Kramarz and Thesmar (2006), Adams and Ferreira (2009)). The role of an

independent voice inside the boardroom has become increasingly important in the post-SOX era, when managers actively seek to maintain their influence through informal channels while complying with stringent board requirements.⁵² Second, UIDs increase board diversity, which provides new perspectives on firm operations, and in turn increases firm value (Carter, Simkins, and Simpson (2003), Adams and Ferreira (2009)). Third, UIDs appointed during the post-SOX period may be of higher quality than those appointed pre-SOX and thus more likely to perform a valuable monitoring and advisory role. Since the passage of SOX, the nomination of board members has drawn much attention from the media and shareholder activists, which has increased the pressure on firms to tighten their screening procedures in recruiting directors. This pressure is likely to be especially high when appointing UIDs who have no past performance as a director.⁵³ In support of this view, a 2008 report by executive search firm Spencer Stuart shows that firms are more strategic and cast a wider net when searching for director candidates in the post-SOX era.⁵⁴ Fourth, Linck, Netter, and Yang (2009) note that directors' workload and liability risk have increased with the passage of SOX, suggesting that the personal costs, including reputational costs, of becoming outside directors are more likely to outweigh the benefits in the post-SOX period. Consequently, under the new regime, lower quality directors may have fewer incentives to join the post-SOX directorial labor market. Further, since UIDs have no track record in this labor market and have to go through a stricter hiring process, it may be more costly for them to become a director in the post-SOX period. Thus, UIDs who decide to enter the directorial labor market in the post-SOX era may be of better quality than those who joined boards in the pre-SOX

⁵² Coles, Daniel, and Naveen (2010) find that firms increase the proportion of outside directors prone to be more supportive of management in the post-SOX period. Kim and Lu (2012) provide evidence that in the post-SOX period, CEOs are more likely to appoint non-CEO top executives with pre-existing social connections to them in executive suites.

⁵³ For examples of heightened scrutiny of outside director appointments after the passage of SOX, see "Senator's wife nominated for utility board," *Associated Press Newswires*, April 8, 2003, and "Senate spouses find jobs on boards of PepsiCo, ConocoPhillips," *Bloomberg*, June 14, 2005.

⁵⁴ <http://content.spencerstuart.com/sswebsite/pdf/lib/pov08.pdf>.

era. Finally, SOX's new directorship requirements put greater emphasis on directors' financial proficiency. Financial knowledge is crucial for directors to fulfill their monitoring and advisory roles. Previous studies show that the presence of financial specialists on the board discourages corporate fraud and increases board effectiveness.⁵⁵ UIDs who are financial specialists may therefore enhance the oversight role of boards.

To evaluate these competing views on the effectiveness of UIDs on corporate boards, we conduct director- as well as firm-level analyses for the period 1998 to 2006. We find that consistent with prior literature, there is an influx of UIDs in the post-SOX period. This influx is largely driven by new firms appointing UIDs rather than firms with existing UIDs appointing more UIDs. While 22% of firm-year observations have a UID in the pre-SOX period, this number increases to 36% post-SOX. The likelihood of UID appointments post-SOX is higher when firms, especially small firms, are not compliant with committee independence requirements. This finding is consistent with previous studies that show that SOX increases compliance costs for smaller firms that are largely constrained when complying with the new regulations (Chhaochharia and Grinstein (2007), Linck, Netter, and Yang (2009)). We also find that compared to newly appointed seasoned directors, newly appointed UIDs tend to be female, younger, less likely to have social ties to the CEO, and less likely to have enterprise-wide experience. However, they make up for the lack of enterprise-wide experience with financial expertise.

Further analyses show that the likelihood of missing board meetings is similar between UIDs and seasoned independent directors in both the pre- and post-SOX periods. Although UIDs are less likely to be appointed to monitoring committees pre-SOX compared to

⁵⁵ Engel, Hayes, and Wang (2010) document that an increasing number of firms appoint financial specialists as audit committee chairs in the post-SOX period. Defond, Hann, and Hu (2005) find that investors value the monitoring skills of directors with financial expertise on the audit committee. And Agrawal and Chadha (2005) show that the presence of financial experts on the audit committee reduces the likelihood of an earnings restatement.

seasoned independent directors, the likelihood of UIDs being appointed to monitoring committees significantly increases post-SOX. These results suggest that UIDs play an increasingly important role in a firm's decision-making process post-SOX.

We next examine the market's ex-ante valuation of UID appointment announcements. We find that, relative to seasoned independent directors, investors on average react more negatively to a firm's decision to appoint UIDs in the pre-SOX period but that this negative reaction is completely negated in the post-SOX era. These findings suggest that the market views UIDs appointed in the post-SOX period as better quality monitors and advisors than those appointed in the pre-SOX period and that UIDs are equally as good as seasoned independent directors post-SOX. Further supporting this view, we also find that firms with UIDs in the post-SOX period perform as well as firms with seasoned independent directors only, and even marginally outperform these firms when firm value is measured by industry-adjusted Tobin's q .

To investigate whether the disappearance of the negative announcement effect for UID appointments in the post-SOX period indeed reflects improvement in the quality of board monitoring and advising, we examine how the role of boards with UIDs is different from that of boards with seasoned independent directors in various corporate events. Consistent with the event study analysis, we find little evidence supporting the view that the influx of UIDs post-SOX weakens the quality of board monitoring and advising: UIDs perform as well as, if not better than, seasoned independent directors, and in some corporate events such as CEO turnover and financial reporting decisions, boards with UIDs perform better than boards without UIDs in the post-SOX period.

First, we find that compared to the pre-SOX period, UID presence in the post-SOX period significantly increases the sensitivity of CEO forced turnover to performance. Second,

although CEO pay is higher for firms whose boards have UIDs than for firms whose boards consist entirely of seasoned independent directors in the pre-SOX period, their higher level of CEO pay decreases after the passage of SOX, particularly when UIDs sit on the compensation committee. Third, we find that UID presence itself has little impact on a firm's tendency to engage in intentional financial misreporting during the full sample period. However, compared to the pre-SOX period, the presence of UIDs on audit committees in the post-SOX period significantly reduces the probability of intentional earnings manipulation. Fourth, we find that while UIDs in the pre-SOX period are ineffective at preventing managers from making poor acquisition decisions, in the post-SOX period acquirers whose boards have UIDs do not perform worse than those whose boards do not have UIDs, particularly when the acquirers have greater advisory needs.

Our study contributes to the literature in at least three important ways. First, our findings broaden our understanding about the value of independent directors (e.g., Rosenstein and Wyatt (1990), Nguyen and Nielsen (2010)). Using an event study of appointments of independent directors, Rosenstein and Wyatt (1990) find positive stock price reaction to the outside director appointments. In particular, they find the appointment of directors with financial expertise is beneficial to shareholder wealth. Nguyen and Nielsen (2010) who use stock price reactions to sudden death of independent directors find that independent directors are valuable to shareholders. Directors with long tenure or directors who were appointed during the tenure by the current CEO are less valuable. In this study, we focus on a breed of independent directors who enter the directorial labor market for the first time and provide insights into the market for independent directors.

Second, we extend the literature on the effects of SOX on board functioning and firm value. There is growing evidence that SOX may have had some unintended negative

consequences. For example, Guthrie, Sokolowsky, and Wan (2010) find little material effects of the board reforms on reining in CEO pay, Krishnan et al. (2011) show that mandated independence requirements provide firms incentives to hire more directors who are socially tied to CFOs/CEOs, which results in greater earnings management, and Hwang and Kim (2009) show that firms use loopholes to hire independent directors who are not truly independent although they meet the regulatory requirements. In contrast, by examining how UIDs -- an important source of labor supply after the enactment of SOX -- affect board functioning and firm value, we show that corporate governance reform can have a positive effect.

Third, our research extends the literature that sheds light on the effects of SOX on the supply side of the directorial labor market (e.g., Chen and Moers (2012), Gao, He, and Kang (2012)). Chen and Moers (2012), who mainly focus on the determinants of new director appointments, identify a substantial inflow of unseasoned directors into post-SOX boardrooms. Gao, He, and Kang (2012) show that the rule changes targeted at boards of public firms have prompted many board members of privately held firms to depart and assume directorships in public firms. We provide evidence on not only the prevalence of UIDs as a new source of director labor but also the positive impact of their presence on the overall quality of the board and firm value. Our findings suggest that under the heightened market scrutiny, firms are likely to take more prudent steps to recruit more effective outside directors (Bebchuk, Cohen, and Wang (2013)). The tough screening process prevents the labor market imbalance from undermining board effectiveness in the post-SOX period and helps enhance board oversight.

The paper is organized as follows. In Section I, we describe the data, discuss our identification of UIDs, and report summary statistics. In Section II, we report results from

director-level analyses including the valuation effects of UID appointments, the likelihood of UIDs missing board meetings, the likelihood of UIDs being assigned to monitoring committees, and the number of directorships in other firms after their first appointment. In Section III, we report results from firm-level analyses on the effects of UIDs on various corporate governance outcomes and firm value. We summarize our findings and conclude in Section IV.

I. Data, Identification of UIDs, and Summary Statistics

Our sample consists of the universe of firms in RiskMetrics (formerly IRRC director database) from 1998 to 2006, which covers all directors of Standard and Poor's (S&P) 1,500 firms.⁵⁶ We obtain financial and stock price data from Compustat and the Center for Research in Security Prices (CRSP), respectively. Firms with missing stock returns and financial data are deleted. Our final sample consists of 11,769 firm-year observations for 2,218 unique firms.

We first identify potential UIDs by examining their directorship information reported in RiskMetrics. The directors are classified as UID candidates if they have no prior directorship experience in any S&P 1,500 firm prior to joining their current board. We then examine the profiles of these candidates using the BoardEx database to collect their directorship information in non-S&P 1,500 firms and eliminate those that have prior board membership outside S&P 1,500 firms.⁵⁷ If director profiles are not available in BoardEx, we manually check their profiles using other sources including proxy statements and websites.

⁵⁶ Our sample period begins in 1998 because important director information such as director shareholdings and committee memberships is missing prior to 1998. However, since information on the list of directors itself is complete prior to 1998, we use the list in 1997 to determine the independent director appointments in 1998. The sample stops in 2006 because in 2007, RiskMetrics changed its data collection methodology and definition of director independence to follow rules set by NYSE and Nasdaq.

⁵⁷ We thank Young Han (Andy) Kim for sharing the matched identifiers between BoardEx and Compustat.

UIDs are defined as first-time directors who have never been a director on the board of a private or public U.S. firm.⁵⁸ We consider a director as a UID during the first three years of her independent directorship.⁵⁹ Directors with insider director experience prior to assuming their first independent directorship are not considered UIDs since they already have boardroom experience and thus are familiar with a board decision-making process. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms because they are still relatively new to serving as a director.

Panel A of Table I presents the distribution of firms with UIDs and the fraction of UIDs on the board in our sample. Out of 11,769 firm-year observations, 3,423 (29%) have at least one UID on their board. As expected, the annual average number of firms with a UID increases from 297 during the pre-SOX period (1998-2001) to 447 during the post-SOX period (2002-2006).⁶⁰ The proportion of firms with at least one UID increases to 36.2% in the post-SOX period from 21.5% in the pre-SOX period. Pearson chi-square test estimates indicate that the increase in firms with UIDs is statistically significant at the 1% level. We also find that the average number of UIDs increases almost 60%, from an annual average of 363 during the pre-SOX period to 574 during the post-SOX period. On the other hand, the number of seasoned independent director stays relatively constant: the annual average

⁵⁸ In examining a director's past boardroom experience, we exclude board memberships in subsidiaries, foreign operations, foundations and other not-for-profit organizations, and government organizations such as the U.S. Nuclear Regulatory Commission and Federal Reserve banks. Although such experience may be helpful in fulfilling duties as a board member, boards of profit and not-for-profit organizations work differently and therefore qualifications to work on these entities are quite different (Hallock (2002)). Fich and Shivdasani (2006) also do not consider directorships held in nonpublic firms, not-for-profit and charitable organizations, trusts, and associations when defining busy directorships.

⁵⁹ In untabulated tests, we also experiment with the first two (four) years of independent directorship and find qualitatively similar results.

⁶⁰ The passage of SOX occurred in July 2002, which coincided with the end of the 2001 fiscal year for many firms. Some studies use 2001 as the base year and exclude observations in the 2002 transition period (e.g., Kim and Lu (2012), Krishnan, Raman, Yang, and Yu (2011)). Our results remain qualitatively similar when we use this approach.

numbers of seasoned independent directors during the pre- and post-SOX periods are 7,991 and 7,641, respectively.

On average, the percentage of UIDs on the board (independent directors who are UIDs) increased from an annual average of 2.9% (4.9%) pre-SOX to 5.1% (7.4%) post-SOX, with the increase significant at the 1% level. This increase in the presence of UIDs on the board is mainly due to firms without any UIDs adding UIDs to their boards rather than firms with UIDs increasing the representation of UIDs on their boards: as shown in the last column, conditional on the presence of a UID, the percentage of independent directors who are UIDs decreases from an annual average of 22.9% in the pre-SOX period to 20.6% in the post-SOX period. Thus, the large increase in the number of UIDs post-SOX is largely driven by firms without UIDs adding UIDs to their boards. However, given that one out of five independent directors is a UID in both the pre- and post-SOX periods, representation of UIDs on the board remains stable over the full sample period.

Panel B of Table I reports the distribution of independent director appointments during our sample period. Following Fahlenbrach, Low, and Stulz (2010), we assume that a director is newly appointed to the board when she appears for the first time on the list of directors on the board. We require our sample of appointing firms to those that exist on the RiskMetrics database for at least two consecutive years. We eliminate firms that appoint more than five new directors in a given year from the sample since multiple appointments are likely related to major corporate events. During our sample period, there are 8,258 seasoned independent director appointments and 1,671 UID appointments. The average annual ratio of the number of newly appointed seasoned independent directors to the total number of newly appointed independent directors falls to 81.29% post-SOX from 85.54% pre-SOX. In contrast, the average annual ratio of the number of new UID appointments rises to 18.71% post-SOX from 14.46% pre-SOX.

Table II presents summary statistics on the firm, board, and CEO characteristics of our sample firm-year observations according to the presence of UIDs on the board. The Appendix provides detailed descriptions on the variables. We winsorize all continuous variables at the 1% level in both tails to mitigate the effects of potential outlier. Focusing first on the firm characteristics, we find that compared to firms without UIDs, firms with UIDs on average are smaller, younger, less likely to pay dividends, and less diversified (i.e., fewer business segments), and they have lower leverage, lower stock return volatility, higher free cash flow, higher past stock returns, and more institutional blockholders. Sales growth, Tobin's q , operating performance (ROA), and R&D intensity are not significantly different between the two groups. Focusing next on the board characteristics, we find that firms with UIDs are likely to have larger boards and their boards are likely to be more independent than the boards of firms without UIDs. The mean director ownership of firms with UIDs (5.4%) is lower than the mean director ownership of firms without UIDs (6.2%). With respect to the CEO characteristics, we find that CEOs in firms with UIDs are younger and less powerful than those in firms without UIDs: CEOs in the former firms are less likely to be chairman of the board, have shorter tenure, and have higher equity ownership.

Table III compares characteristics of newly appointed UIDs with those of newly appointed seasoned independent directors. Columns (1) and (2) show that UIDs are more likely to be female (26.4% versus 12.4%) and tend to be younger (53.2 versus 57) than seasoned independent directors. Following Fich and Shivdasani (2006) and Masulis, Wang, and Xie (2012), we define directors as busy if they hold three or more other directorships in the RiskMetrics universe of firms. We find that about 12.7% of seasoned directors can be classified as busy directors while less than 1% of UIDs fall into this category. These results are not surprising given the way we define UIDs.

As expected, we also find that seasoned independent directors have more CEO and corporate experience than UIDs. While about 89% of the seasoned directors have worked for or currently work in publicly listed firms, especially firms in the same industry as the appointing firm, the corresponding number for UIDs is only 60.8%. Although UIDs lack corporate experience, they are more likely to have financial expertise: about 43.8% of UIDs have financial expertise compared to 26% of seasoned directors. In addition, we find that compared to seasoned directors, UIDs are less likely to have social connections with the CEO, especially ties arising from the workplace, where we follow Fracassi and Tate (2012) in defining social ties between directors and the CEO.

Table III also separately compares characteristics of newly appointed UIDs and seasoned independent directors during the pre- and post-SOX periods. Columns (3) and (4) show that UIDs appointed in the post-SOX period have more same-industry experience and financial expertise than those appointed in the pre-SOX period. Columns (5) and (6) show that seasoned independent directors post-SOX are more likely to be female, older, and less busy than those in the pre-SOX period. The proportion of seasoned independent directors with CEO experience drops to 36.7% post-SOX from 41.3% in the pre-SOX period, while the proportion of seasoned independent directors who have corporate experience or financial expertise increases significantly after the passage of SOX. We find no significant changes in the proportion of either unseasoned or seasoned directors connected with the CEO before and after the passage of SOX. These results are consistent with those of Fracassi and Tate (2012), who find no evidence that the new regulations have led firms to add directors connected with the CEO.

II. Analyses Using Director-Level Data

In this section we use director-level data to examine how the passage of SOX affects board functioning and firm value.

A. Determinants of UID Appointments

Prior studies show that the effect of board reform is not uniform across firms. Linck, Netter, and Yang (2009) document that smaller firms bear increased director compensation costs under the tighter post-SOX directorial labor market conditions. Chhaochharia and Grinstein (2007) find that small firms that are least compliant earn negative returns around the rule changes, indicating that it is costly for small firms to implement the regulatory requirements. To the extent that a firm's increased demand for UIDs is largely motivated by the need to meet the regulatory requirements, these results suggest that UIDs are more likely to join firms that are most affected by the rule changes, particularly firms that lack board/committee independence or small firms that are more constrained in recruiting seasoned independent directors under tighter post-SOX directorial labor market conditions. To examine this issue more directly, we next estimate the determinants of UID appointments.

Table IV reports results from logit regressions in which the dependent variable is an indicator that takes the value of one if a UID is appointed to the board and zero if a seasoned independent director is appointed. The regression controls for the variables used in Tables II and III and industry fixed effects. It also controls for the effect of the departure of seasoned independent directors on the likelihood of UID appointments by including a binary variable equal to one if at least one seasoned independent director has departed in the most recent two years.⁶¹ In column (1), the coefficient estimate on the SOX indicator that takes the value of one for the 2002-2006 period and zero for the 1998-2001 period is positive and significant,

⁶¹ We also control for the presence of seasoned new independent directors to see whether the results are attributed to just any new directors who get appointed to the board rather than only unseasoned new independent directors. Our untabulated tests show that our results of firm level analyses do not change.

confirming our earlier findings that compared to firms in the pre-SOX period, firms in the post-SOX period are more likely to appoint UIDs. We also find that smaller firms are more likely to appoint UIDs, consistent with the view that these firms have a more difficult time finding experienced seasoned directors willing to sit on their boards (Fahlenbrach, Low, and Stulz (2010)). In addition, low growth firms, firms with young CEOs, firms with high free cash flow, and firms with institutional blockholders are more likely to appoint UIDs. Further, firms that recently experienced a seasoned director departure are more likely to fill the position with another seasoned director.

In column (2), we add binary variables indicating whether a firm is compliant with the board and committee independence provisions, and their interactions with the SOX indicator. Lack of board independence is an indicator that takes the value of one if a board does not have a majority (50%) of independent directors. Lack of compensation (nomination and audit) committee independence is an indicator that takes the value of one if the compensation (nomination and audit) committee is not fully comprised of independent directors.⁶² We find that the coefficient estimates on all indicators for lack of board/committee independence are negative and significant, indicating that during the pre-SOX period, compared to firms that meet requirements related to a majority of independent directors and committee independence, those that do not meet such requirements are less likely to appoint UIDs than seasoned independent directors. However, the coefficient estimates on all interaction terms between the indicators for lack of committee independence and the SOX indicators are positive and significant, suggesting that during the post-SOX period, firms that lack

⁶² SOX requires that the board comprise a majority of independent directors and that the audit committee comprise entirely independent directors. In contrast, the independence of the nomination and compensation committees is required by exchange regulations. Duchin, Matsusaka, and Ozbas (2010) emphasize that the audit committee requirement is a better instrument for studying the effects of SOX because it is legally binding on all firms while other committee requirements imposed by exchange regulations are not legally binding.

committee independence are more likely to appoint UIDs than other firms. Thus, firms that are most affected by the rule changes are more likely to appoint UIDs post-SOX.

In columns (3) through (5), we follow Chhaochharia and Grinstein (2007) and divide our sample firms into firms that belong to SmallCap 600, MidCap 400, and S&P 500 indexes and reestimate regression (2) separately for these three subsamples of firms. We find that the appointment of UIDs in the post-SOX period by firms that lack committee independence is most evident among small firms, which are considered most constrained in meeting the regulatory requirements.

In untabulated tests, to avoid potential multicollinearity between the indicator for lack of board independence and the indicators for lack of committee independence, we reestimate regressions (2) through (5) by including only one indicator for lack of independence and its interaction with the SOX indicator.⁶³ We find that the coefficient estimates on all interaction terms are positive and significant both for the full sample and for the subsample of small firms, further confirming our results in Table IV that the firms most affected by the rule changes are more likely to appoint UIDs post-SOX.

B. Announcement Effects of UID Appointments

We next examine how the market reacts to announcements of UIDs. If investors perceive UIDs as more effective directors than seasoned independent directors, we should observe a more positive stock price reaction to UID appointments compared to seasoned independent director appointments. We identify the initial public announcement dates of UID appointments from *Factiva*. We use as the announcement date the date that a news

⁶³ For example, the correlation between the indicator for lack of board independence and the indicator for lack of compensation committee independence is 0.466.

announcement first appears in *Factiva*. Out of 1,671 UID appointments, we are able to identify announcement dates for 1,270 appointments. After eliminating UID appointment announcements that have other confounding corporate events (e.g., merger and acquisition (M&A), dividend, share repurchase, earnings, and annual meeting announcements) during the three calendar days around the announcement dates, we have a final sample of 416 uncontaminated UID appointments. For these 416 UID appointments, we follow Masulis, Wang, and Xie (2012) and Kang and Zhang (2012) to create a matching sample of seasoned independent director appointment announcements made by the same firms that elect UIDs within three years. Since the valuation effect of director appointment announcements can be significantly affected by various firm characteristics, this matching approach allows us to avoid results affected by differences in firm characteristics. When there are multiple matching seasoned independent director appointment announcements, we choose the appointment whose announcement date is closest to that of the UIDs. The exclusion of announcements that have other confounding corporate events leaves us with 190 appointments of seasoned independent directors. In conducting our tests, we use two sets of pooled samples of director appointments: one that uses a pooled sample of 416 uncontaminated UID appointments and 190 matching uncontaminated seasoned director appointments, and one that uses a pooled sample of 190 uncontaminated UID appointments and 190 matching uncontaminated seasoned director appointments.

To calculate abnormal returns we use a market model. We estimate market model parameters using days -280 to -61 relative to the news announcement. The equally-weighted CRSP market return is used as the market portfolio return. The daily abnormal return is cumulated to obtain the cumulative abnormal return (CAR) from day -1 before the news announcement date to day $+1$ after the announcement date.

Panel A of Table V shows results of the announcement returns of independent director appointments. In columns (1) and (4), we find mean and median cumulative abnormal announcement returns of UIDs are lower than those of seasoned directors for the full period at the 1% and 5% respectively. Columns (2) and (5) compare the announcement returns of UID and seasoned director appointments pre-SOX. The mean and median abnormal returns for appointments of UIDs in column (2) are negative and significant at the 1% level while the abnormal returns for seasoned director appointments in column (5) are positive and insignificant. In columns (3) and (6), we compare the announcement returns of UID and seasoned director appointments post-SOX and find no statistically significant differences in the announcement returns between two groups of independent directors.

In Panel B, we present the results of ordinary least squares (OLS) regressions in which the dependent variable is CAR (-1, 1). We use as the control variables those used in Defond, Hann, and Hu (2005) and Fich and Shivdasani (2006). Columns (1) through (3) use a pooled sample of 416 uncontaminated UID appointments and 190 matching uncontaminated seasoned director appointments and columns (4) through (6) use a pooled sample of 190 uncontaminated UID appointments and 190 matching uncontaminated seasoned director appointments. In column (1), we find that the coefficient estimate on the SOX indicator is -0.011, significant at the 1% level. This coefficient estimate suggests that all else being equal, the announcement returns for UID appointments are 1.1% lower than those for seasoned director appointments. In column (2), we interact the SOX indicator with the UID indicator that takes the value of one if a UID is appointed to the board and zero if a seasoned independent director is appointed. We find that the coefficient estimate on the UID indicator is negative and significant at the 1% level (-0.026) but the coefficient estimate on the interaction term is positive and significant at the 5% level (0.022). These results suggest that the negative reaction to UID appointment announcements observed in column (1) is mainly

driven by those made during the pre-SOX period and that this negative reaction is completely negated in the post-SOX period. The sum of the coefficient estimates on the UID indicator and the interaction term is indistinguishable from zero. Thus, in the post-SOX period, the announcement returns for UID appointments are similar to those for seasoned independent director appointments. The results in columns (4) through (6) echo those in columns (1) through (3).

Why does the market penalize the appointments of UIDs pre-SOX but not post-SOX? It is possible that in the pre-SOX period the appointment of a UID sends a negative signal about firm quality to the market since the firm is unable to appoint experienced, seasoned directors, while in the post-SOX period the market is aware that there is a limited supply of seasoned independent directors and hence firms need to appoint independent directors under more constrained conditions. Therefore, the appointments of UIDs are no longer viewed as unfavorably in the post-SOX period. According to this explanation, the negative effect of appointing UIDs in the pre-SOX period should be more pronounced for low quality firms. In column (3), we test this conjecture by including the interaction between the UID indicator and firm ROA. To the extent that poorly performing firms have low quality management and the appointment of UIDs by these firms can signal that they are worse than previously thought, we expect a positive coefficient estimate on the interaction between the UID indicator and ROA. Consistent with this expectation, we find that the interaction term is positively and significantly related to CAR $(-1, 1)$, indicating that the negative market reaction to the appointment of UIDs is reduced if firm performance is good in the pre-SOX period.

C. Attendance Records, Committee Assignments, and Board Seats in Other Firms

As noted earlier, anecdotal evidence suggests that post-SOX firms face increasing pressure to appoint better quality directors. Given this intense pressure on corporate boards, UIDs may also be required to familiarize themselves with various board issues and operations as quickly as possible after joining the boards. Furthermore, increased costs of being a director may weed out lower quality director candidates. These arguments suggest that UIDs appointed in the post-SOX period are of higher quality and are more effective than those appointed in the pre-SOX period. In this subsection, we examine the effectiveness of UIDs by comparing their board attendance records, committee membership assignments, and directorships held in other firms for three years after their current appointment to those of seasoned independent directors. If UIDs are less effective than seasoned independent directors, we would expect that they have more board attendance problems, are assigned to fewer important committees, and hold fewer board seats in other firms due to lack of demand for their director services. Our base regression is as follows:

$$y_{jit} = \alpha_i + \beta \text{Unseasoned independent director}_{jit} + \gamma \text{SOX}_t + \mu \text{Unseasoned independent director}_{jit} \times \text{SOX}_t + \psi X_{jit} + \eta Y_{it} + \varepsilon_{jit}, \quad (1)$$

where j , i , and t denote the director, firm, and year, respectively. Depending on the specification, y_{jit} is the indicator for board meeting attendance, the indicator for committee assignments, or the number of directorships held by a UID (seasoned director) in other firms. α_i is either industry or firm fixed effects, $\text{Unseasoned independent director}_{jit}$ is a binary variable indicating whether director j is a UID in firm i and year t , SOX_t is a binary variable indicating whether the director-firm-year observation is in the post-SOX (2002 or thereafter) period, X_{jit} is a vector of control variables for director attributes, Y_{it} is a vector of control variables for firm characteristics, and ε_{jit} is an error term. We use as control variables those used in Yermack (2004) and Adams and Ferreira (2009). Since our specification includes the

SOX indicator, we do not include year fixed effects. Our results remain qualitatively the same when we exclude the non-interacted *SOX* indicator and include year fixed effects instead. Standard errors are adjusted for heteroskedasticity and for clustering at the directorship (director-firm) level.

C.1. Attendance Records

Table VI reports estimates from logit models with industry fixed effects (columns (1) and (2)) and from linear probability models (LPM) with firm fixed effects (columns (3) and (4)), where the dependent variable is equal to one if a director attends less than 75% of board meetings during a fiscal year and zero otherwise.⁶⁴ We follow attendance records of newly appointed directors for the first three years of their appointments. In columns (1) and (2), we find that the coefficient estimates on the UID indicator and its interaction with the SOX indicator are not significant, suggesting that UIDs are not more likely to have attendance problems compared to seasoned independent directors, both pre- and post-SOX. The results estimated using the LPM in column (3) show that the likelihood of missing board meetings is statistically indistinguishable between UIDs and seasoned independent directors in the full period. Although the coefficient estimate on the interaction term between the UID indicator and the SOX indicator is significantly positive in column (4), which indicates that UIDs are more likely to have attendance problems post-SOX compared to pre-SOX, the sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is not significantly different from zero (p -value of the F -test = 0.175). Thus, we cannot reject the

⁶⁴ We include firm fixed effects only in the LPM because the presence of a large number of fixed effects in the logit model would lead to an incidental parameters problem (Wooldridge (2002, pp. 484)).

null hypothesis that in the post-SOX period, UIDs and seasoned independent directors are equally likely to have attendance problems.⁶⁵

C.2. Committee Assignments

To examine whether the presence of UIDs in major board committees and thus their role in a firm's decision-making process change after the passage of SOX, in this subsection we examine the likelihood of the newly appointed directors sitting on a major monitoring committee during the first three years of their appointments. Following Klein (1998), we include as monitoring committees the audit, nomination, compensation, and corporate governance committees.

The results are reported in Table VII. The dependent variable is an indicator that takes the value of one if a director is a member of one of the monitoring committees in a given year, and zero otherwise. We use as control variables those used in the Table VI regressions. The results using logit regressions with industry fixed effects are reported in columns (1) and (2) and those using the LPM with firm fixed effects are reported in columns (3) and (4). In columns (1) and (3), we find that the coefficient estimates on the UID indicator are insignificant, suggesting that compared to seasoned independent directors, UIDs are equally likely to be appointed to a monitoring committee over the full period. In columns (2) and (4), we add an interaction term between the UID indicator and the SOX indicator. We find that in both columns, the coefficient estimates on the UID indicator are significantly negative but the coefficient estimates on the interaction term are significantly positive. These results suggest that during pre-SOX period, UIDs are less likely to be appointed to monitoring committees

⁶⁵ The LPM specification with firm fixed effects may lack power in predicting attendance problems. Out of 1,254 (1,461) UIDs in the pre- (post-) SOX period, only 25 (28) have attendance problems. Similarly, out of 7,532 (6,433) seasoned independent directors in the pre- (post-) SOX period, only 223 (129) have attendance problems.

compared to seasoned independent directors. However, the likelihood of UIDs being appointed to monitoring committees during the post-SOX period is significantly greater than during the pre-SOX period. Thus, the presence of UIDs in the post-SOX boardroom and their role in a firm's decision-making process increase significantly compared to in the pre-SOX period. The sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is not significantly different from zero, suggesting that in the post-SOX period, UIDs and seasoned independent directors are equally likely to be appointed to monitoring committees.

C.3. Number of Directorships in Other Firms

In this subsection we examine the number of directorships in other firms held by UIDs and seasoned independent directors to measure market demand for them in the labor market during the pre- and post-SOX periods. To address this issue, we regress the number of directorships in other firms held by a director on various explanatory variables. Prior literature shows that directors' performance and ability are positively related to the number of outside directorships that they hold (Gilson (1990), Kaplan and Reishus (1990), Booth and Deli (1996), Brickley, Linck, and Coles (1999), Ferris, Jagannathan, and Pritchard (2003)), suggesting that the number of outsider directorships is positively related to the market demand for directors' talent.

Table VIII presents the results. The dependent variable is the number of directorships in other firms held by directors in the first three years of their appointment. In addition to controlling for the variables used in the Table VII regressions, we include the number of directorships at the time of appointment to take into account the fact that seasoned independent directors sit on more boards than UIDs. In column (1), the coefficient estimate

on the UID indicator is significantly negative at the 5% level. In columns (2) and (4), the coefficient estimate on the UID indicator is significantly negative but the coefficient estimate on the interaction term between the UID indicator and the SOX indicator is significantly positive. Thus, although UIDs hold fewer directorships in other firms in the pre-SOX period than seasoned independent directors, their directorships in the post-SOX period increase significantly compared to their directorships in the pre-SOX period. The sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is not significantly different from zero, suggesting that in the post-SOX period, UIDs hold as many directorships as seasoned independent directors.

In sum, our results using director-level data show that after the passage of SOX, the market and appointing firm no longer discount UIDs relative to seasoned directors. Post-SOX, the presence of UIDs in major board committees is comparable to that of seasoned directors and the number of directorships in other firms held by UIDs is similar to that in other firms held by seasoned directors. There are two possible explanations for these findings. It could be the case that due to the tight labor market conditions post-SOX, there are fewer seasoned directors for the positions, so the firms have no choice but fill the empty positions with inexperienced UIDs.⁶⁶ Alternatively, UIDs who join the boardroom during the post-SOX period may be more competitive than their peers in the pre-SOX period, reducing the market demand gap between seasoned and unseasoned directors. To understand which explanation is more likely, we now turn our attention to firm-level analysis to measure the real impact of UID presence on corporate governance outcomes and firm value.

III. Analyses Using Firm-Level Data

⁶⁶ This explanation, however, does not explain why the market reaction to appointments of UIDs is similar to appointments of seasoned directors post-SOX.

To examine how the presence of UIDs on boards affects major governance outcomes and firm value, we estimate the following regression:

$$y_{it} = \alpha_i + \beta \text{Unseasoned independent director}_{it} + \gamma \text{SOX}_t + \mu \text{Unseasoned independent director}_{it} \times \text{SOX}_t + \psi X_{it-1} + \varepsilon_{it}, \quad (2)$$

where i and t again denote firm and year, respectively. Depending on the specification, y_{it} is an indicator for forced CEO turnover, log (CEO pay), an indicator for earnings restatement, M&A announcement returns, and Tobin's q . α_i is either industry or firm fixed effects, $\text{Unseasoned independent director}_{it}$ is a binary variable indicating whether a firm has at least one UID on the board, SOX_t is a binary variable indicating the post-SOX period (2002 or thereafter), X_{it-1} is a vector of control variables, and ε_{it} is an error term.⁶⁷ Since our specification includes the SOX indicator, we do not include year fixed effects. Our results remain qualitatively the same when we exclude the non-interacted SOX_t and include year fixed effects instead.

A. Forced CEO Turnover

The first corporate event we examine is the likelihood of forced CEO turnover. If UIDs are ineffective monitors and their presence weakens a board's oversight, we expect the sensitivity of CEO turnover to performance to be lower for firms whose boards have UIDs. However, if the enactment of SOX improves the quality of the monitoring and advisory roles performed by UIDs, we expect turnover-performance sensitivity to become stronger in the

⁶⁷ One may argue that the presence of only one UID on the board is unlikely to make much difference in board functioning. To address this concern, we repeat all the firm-level analyses in Section III by replacing the UID indicator with a binary variable indicating whether boards have at least two UIDs. In untabulated tests, we find that our main conclusion does not change: UIDs are not worse directors than seasoned directors, especially in the post-SOX period.

post-SOX period. Out of 10,481 firm-year observations, 291 (2.78 %) experience forced CEO turnover.⁶⁸

Table IX presents the results of logit regressions in which the dependent variable is set to one if a forced CEO turnover event occurs in a given year and zero otherwise. We include as control variables the firm, board, and CEO characteristics used in Jenter and Kanaan (2012) and Peters and Wagner (2012). Our key variables of interest are the UID indicator and its interaction with past stock performance.⁶⁹ In columns (1) and (2) we estimate logit models with year and industry fixed effects, and in columns (3) and (4) we estimate LPMs with year and firm fixed effects. Consistent with prior literature, we find that CEOs are more likely to be replaced following poor stock return performance. We also find that the sensitivity of forced CEO turnover to performance of firms with UIDs on the board is statistically indistinguishable from that of firms with only seasoned independent directors on the board for the full sample period (columns (1) and (3)). When we include a triple interaction term between the SOX indicator, the UID indicator, and past stock returns, we find that the coefficient estimate on this interaction term is significantly negative, indicating that compared to the pre-SOX period, UID presence in the post-SOX period increases the sensitivity of turnover to performance (columns (2) and (4)). The p -values for the test that the sum of the coefficient estimates on the interaction between the UID indicator and past stock returns and the interaction of this interaction term with the SOX indicator is equal to zero are 0.038 and 0.146 in columns (2) and (4), respectively. These results indicate that the turnover-performance sensitivity of firms with at least one UID on their board during the post-SOX period is similar to or even higher than that of firms with only seasoned independent directors.

⁶⁸ The identification of forced CEO turnover is described in Jenter and Kanaan (2011) and Peters and Wagner (2012). We thank Jenter Dirk, Florian Peters, and Alexander Wagner for sharing their CEO turnover data.

⁶⁹ Powers (2005) and Ai and Norton (2003) highlight the problems of interpreting the marginal effects on the interaction term when the model is nonlinear. Therefore, we only show the coefficients and its associated significance.

In untabulated tests, we separate the sample into two subgroups, one that consists of pre-SOX subsamples and the other that consists of post-SOX subsamples, and reestimate regressions (1) and (3) separately for these two subsamples. We find that our inference does not change: during the post-SOX period, boards with UIDs are equally effective as boards with seasoned independent directors. Thus, there is no indication that boards with UIDs are ineffective in dismissing CEOs for their poor performance compared to boards with seasoned independent directors only.

B. CEO Compensation

We next examine CEO compensation to check whether a board with UID presence is ineffective in curtailing CEOs' self-serving behavior. We merge the RiskMetrics sample with the ExecuComp database to obtain information on CEO compensation. CEO total compensation (ExecuComp variable: TDC1) includes stock options granted, cash compensation, restricted stock grants, other annual compensation, long-term incentive payouts, and all other compensation. We use the log of CEO total compensation as the dependent variable. We control for several firm and CEO characteristics following prior literature on CEO compensation (e.g., Core, Holthausen, and Larcker (1999)).

Columns (1) and (2) of Table X report estimates from regressions including firm fixed effects. In column (1), the coefficient estimate on the UID indicator is not significant, suggesting that during the full sample period, boards with a UID do not pay CEOs more than boards with seasoned independent directors only. When we include the interaction between the UID indicator and the SOX indicator in the regression (column (2)), the coefficient estimate on the UID indicator becomes significantly positive, while the coefficient estimate on the interaction term is negative but insignificant. The p -value for the test of whether the

sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is significantly different from zero is 0.579. Thus, while CEO compensation for firms with UIDs is higher than that for firms without UIDs in the pre-SOX period, UID presence is no longer associated with excessive levels of CEO pay in the post-SOX period compared to firms with seasoned independent directors only.

In columns (3) and (4), we replace firm fixed effects in columns (1) and (2) with industry fixed effects. The results are largely similar except that the coefficient estimate on the interaction term between the UID indicator and the SOX indicator is now significantly negative at the 5% level. Thus, compared to boards with a UID in the pre-SOX period, those with a UID in the post-SOX period pay CEOs significantly less. The sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is statistically indistinguishable from zero, indicating that CEO pay in firms with a UID on their board during the post-SOX period is similar to that in firms with seasoned independent directors only.

In column (5), we add an indicator that takes the value of one if a firm's compensation committee has at least one UID and zero otherwise, and interact it with the SOX indicator. Out of 10,244 firm-year observations, 1,366 (13.33%) have at least one UID on their compensation committee. We find that the coefficient estimate on this indicator is significantly positive (0.144 with p -value=0.021), suggesting that compared to other firms, pre-SOX compensation is higher when at least one UID sits on a firm's compensation committee. However, in the post-SOX period, this negative effect of having a UID on a firm's compensation committee is completely nullified as evidenced by the significant negative coefficient estimate on the interaction term between the indicator for a firm's

compensation committee having at least one UID and the SOX indicator (-0.206 with p -value=0.005).

Our results are robust to eliminating 13 firm-year observations of Apple and Fossil, which are identified by Guthrie, Sokolowsky, and Wan (2010) as outliers that influence analysis on the effect of board reforms on CEO pay (not reported). We also reestimate the Table X regressions using CEO delta as the dependent variable to examine whether UID presence affects CEO wealth-performance sensitivity. We find that neither the UID indicator nor its interaction with the SOX indicator is statistically significant.

C. Financial Reporting Policy

Our summary statistics in Section I and II show that almost half of our sample UIDs that join post-SOX boards have financial expertise and are more likely to sit on the monitoring committees in the post-SOX period. Prior literature documents that the presence of directors with financial expertise on the board enhances a firm's financial reporting practices (Agrawal and Chadha (2005), Defond, Hann, and Hu (2005)). In this subsection we investigate whether boards with a UID are effective in preventing firms from engaging in fraudulent accounting reporting.

We obtain our initial sample of firms that misreport accounting earnings from the Government Accounting Office (GAO) database from 1997 to 2006.⁷⁰ Our final sample is restricted to firms covered in RiskMetrics. Hennes, Leone, and Miller (2008) emphasize the importance of distinguishing between irregularities (intentional misstatements) and error-related restatements and how such a distinction can significantly increase the empirical power

⁷⁰ We thank Andy Leone for making the data on restating firms available on his website <http://sbaleone.bus.miami.edu/>. The latest restated fiscal year in our sample is 2005.

of tests in managerial misreporting studies. Therefore, following Hennes, Leone, and Miller (2008), we focus on only those firms associated with accounting irregularities in the analysis. We manually collect information on firms' misreported fiscal years and quarters by searching *Factiva*. Out of 10,214 firm-year observations, we observe 234 (2.29%) in which a firm's financial statements are restated due to deliberate misreporting.

Table XI shows results from logit regressions of the likelihood of a firm engaging in fraudulent behaviour in which the dependent variable is an indicator that takes the value of one if a firm intentionally manipulates its earnings in a given year, and zero otherwise. Some firms restate earnings due to accounting irregularities for multiple fiscal years. Our key independent variables of interest are the UID indicator and its interaction with the SOX indicator. We control for several firm, board, and CEO characteristics following prior literature on firms' financial reporting behavior (e.g., April (2002), Agrawal and Chadha (2005)). We also control for industry fixed effects.⁷¹

In columns (1) and (2), we find that the presence of UIDs on the board has little impact on the likelihood of accounting irregularities for the full sample period as well as for both subsample periods. However, when we include in the regression a binary variable indicating whether a UID sits on the audit committee (column (3)), we find that the coefficient estimate on its interaction with the SOX indicator is significantly negative at the 5% level, suggesting that compared to the pre-SOX period, the presence of UIDs on audit committees in the post-SOX period significantly reduces the probability of intentional earnings manipulation.

D. M&A Decisions

⁷¹ We do not control for firm fixed effects in these regressions as the within-firm variation of the dependent variable is too low (Zhou (2001)).

To investigate whether the presence of UIDs on the board affects the quality of firms' investment decisions, we examine their M&A decisions. We study M&A activity because managerial objectives play an important role in firm acquisition decisions, and mergers can have a significant effect on shareholder wealth. Our initial sample of M&As comes from Thomson Financial's Security Data Corporation (SDC) M&A database. Our final sample includes all completed M&As that meet the following selection criteria (Moeller, Schlingemann, and Stulz (2004), Masulis, Wang, and Xie (2007)): (1) the deal value disclosed by SDC is more than \$1 million and at least 1% of the acquirer's market value of equity at the fiscal year-end prior to deal announcement, (2) the acquirer's financial and stock return data are available in COMPUSTAT and CRSP, respectively, and (3) the acquirer controls less than 5% of target shares prior to deal announcement and owns 100% of its shares after the acquisition. Our final sample consists of 2,646 M&As made by firms covered in RiskMetrics over the 1998-2006 period.

Table XII reports results of regressing acquirer CAR (-1, 1) on the UID indicator, the SOX indicator, the interaction term between the UID indicator and the SOX indicator, various acquirer- and deal-specific characteristics used in Moeller, Schlingemann, and Stulz (2004) and Masulis, Wang, and Xie (2007), and year and industry fixed effects. In column (1), we include the UID indicator, acquirer- and deal-specific characteristics, as well as year and industry fixed effects. We find that the coefficient estimate on the UID indicator is significantly negative at the 1% level, suggesting that firms whose boards have a UID make worse M&A decisions than those whose boards consist of only seasoned independent directors.

In column (2), we add the SOX indicator and its interaction with the UID indicator. We find that while the coefficient estimate on the UID indicator is significantly negative (-0.011),

the coefficient estimate on the interaction term is significantly positive (0.010). Thus, the negative effect of the presence of UIDs on the board in the pre-SOX period is reversed in the post-SOX period. We also find that the sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is statistically indistinguishable from zero (p -value=0.687), suggesting that M&As during the post-SOX period by firms with UIDs on the board are no longer greeted more negatively compared to those by firms with only seasoned independent directors on the board.

The negative coefficient estimate on the UID indicator has two possible interpretations. It could be the case that UIDs are lax monitors and allow CEOs to make value-decreasing acquisitions. Alternatively, UIDs may not be able to provide valuable advice when managers make an acquisition decision. To disentangle these two possible explanations, in columns (3) and (4) we separate diversifying M&As into two groups depending on their monitoring and advisory needs and reestimate the regression separately for these two groups. Following Schmidt (2009), we consider diversifying M&As in which the acquirers' change in operating income during the prior three years is above the sample median as those that require greater board advisory needs. Diversifying M&As in which the acquirers' change in operating income during the prior three years is below the sample median are classified as those that require greater board supervision needs.

In column (3), we use the subsample of diversifying M&As that have greater advisory needs. We find that the coefficient estimate on the UID indicator is insignificantly negative but its interaction with the SOX indicator is significantly positive at the 10% level. Thus, compared to boards with UIDs in the pre-SOX period, those in the post-SOX period perform a more value-enhancing advisory role. In column (4), where we focus on diversifying M&As that need greater board oversight, we find a significantly negative coefficient estimate on the

UID indicator, implying that during the pre-SOX period, boards with UIDs are ineffective in inhibiting managers from engaging in value-destroying acquisitions compared to boards with only seasoned independent directors. The coefficient estimate on the interaction term between the UID indicator and the SOX indicator is positive but insignificant. In both columns, the sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is statistically indistinguishable from zero, suggesting that post-SOX, boards with UIDs are as effective as boards without UIDs in their advisory and monitoring capacities.

E. Firm Value

In this subsection we investigate how the presence of UIDs on the board affects firm value. Table XIII reports the results from regressions of Tobin's q on the UID indicator, the SOX indicator, the interaction between the two indicators, and control variables. In columns (1) and (2) the dependent variable is log (Tobin's q), and in columns (3) and (4) the dependent variable is the industry-adjusted Tobin's q . Industry-adjusted Tobin's q is computed by subtracting the median Tobin's q for a sample firm's Fama and French (1997) 48 industry from the sample firm's raw Tobin's q . All regressions include firm fixed effects.

In columns (1) and (3), we find that the UID indicator is insignificantly associated with Tobin's q . In columns (2) and (4), we add the SOX indicator and its interaction with the UID indicator. The UID indicator is still insignificantly associated with Tobin's q but the coefficient estimate on the interaction term is positive and significant. These results suggest that relative to the pre-SOX period, firms with a UID have a higher Tobin's q in the post-SOX period. The p -values for the test of whether the sum of the coefficient estimates on the UID indicator and its interaction with the SOX indicator is significantly different from zero is 0.110 and 0.001 in columns (2) and (4), respectively. Thus, it appears that during the post-

SOX period, firms with a UID do not perform worse, and even perform better, than firms without a UID. These findings are largely consistent with our earlier findings that boards with UIDs in the post-SOX period are as effective as boards with only seasoned independent directors in providing advisory and monitoring services.

IV. Summary and Conclusion

In this study we provide new insights into the effect of governance reform on a firm's decision to recruit independent directors and how these directors affect board functioning and firm policy. Using unseasoned independent directors (UIDs) as a key source of directorial labor supply in the post-SOX era, we examine two competing views on the role of UIDs: the view that they are ineffective monitors/advisors and the view that they provide a value-enhancing monitoring and advisory role for top management. We provide evidence that UID presence in post-SOX boardrooms has a positive effect on overall board quality, supporting the latter view.

More specifically, we find that the presence of UIDs after the enactment of SOX in 2002 is more common in firms with greater need to meet board and committee independence provisions in the post-SOX period. We also find that the likelihood of missing board meetings is not different between UIDs and seasoned independent directors in either the pre- or the post-SOX period. Although UIDs are less likely to be appointed to monitoring committees in the pre-SOX period compared to seasoned independent directors, the likelihood of UIDs being appointed to monitoring committees significantly increases after the passage of SOX. These findings suggest that UIDs play an increasingly important role in a firm's decision-making process. In addition, we find that investors on average react negatively to UID appointments in the pre-SOX period but that this negative reaction is

completely negated in the post-SOX period. Similarly, we find that during post-SOX period, the firms with UIDs marginally outperform those with only seasoned independent directors when performance is measured by industry-adjusted Tobin's q . Finally, we find that UID presence on the board increases the sensitivity of turnover to performance in the post-SOX period. Although CEO pay in the pre-SOX period is higher for firms with UIDs on the board than for firms whose boards consist entirely of seasoned independent directors, their high pay level decreases in the post-regulation period, particularly when UIDs sit on the compensation committee. Moreover, after the passage of SOX, UID presence on the board reduces the likelihood of deliberate financial misreporting when at least one UID sits on a firm's audit committee and improves merger performance as measured by merger announcement effects, particularly when the firms have greater advisory needs.

Overall, we find little evidence supporting the view that the influx of UIDs post-SOX weakens the quality of board monitoring and advice. Previous studies on the effect of SOX on governance reform present evidence supporting the negative view of SOX, which holds that SOX has disrupted the mechanisms through which firms optimally choose board directors. In contrast to this view, we find that the influx of UIDs post-SOX does not hamper board effectiveness and their presence even appears to improve board performance. Thus, our results suggest that the conclusions drawn from previous studies examining the effects of SOX on board functioning and firm value are premature and call for careful additional analysis.

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Table I
Sample Distribution

The sample in Panel A consists of 11,769 firm-year observations and 74,494 independent directors covered in RiskMetrics for the period 1998-2006. The sample in Panel B consists of 9,929 new independent director appointments covered in RiskMetrics for the period 1998-2006. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. Following Fahlenbrach, Low, and Stulz (2010), we assume that a director is newly appointed to the board when she appears for the first time on the list of board directors. We require that our sample of appointing firms have board information for at least two consecutive years except for firms appointing new directors in the first year of our sample, 1998. To identify new independent director appointments in 1998, we use the list of directors in 1997 and compare it with that in 1998. We delete firms that appoint more than five new directors in a given year since such multiple appointments are likely related to major corporate events. Superscript a is the *p*-value for a Pearson chi-square test and superscripts b, c, and d are the *p*-values for a two-tailed *t*-test of the difference in means.

Panel A. Distribution of firms with a UID and fraction of UIDs on the board							
Year	Number of firms (a)	Number of firms with at least one UID (b)	(b) / (a): %	Number of UIDs (seasoned independent directors)	% of board members who are UIDs	% of independent directors who are UIDs	% of independent directors who are UIDs, conditional on UID presence
1998	1,450	181	12.48	206 (8,307)	1.56	2.84	22.65
1999	1,408	285	20.24	341 (7,996)	2.68	4.79	23.48
2000	1,460	378	25.89	474 (8,224)	3.60	6.15	23.67
2001	1,256	344	27.39	432 (7,438)	3.87	5.99	21.85
2002	1,287	386	29.99	485 (7,608)	4.27	6.62	22.08
2003	1,289	444	34.45	562 (7,828)	4.83	7.21	20.93
2004	1,260	493	39.13	644 (7,748)	5.67	8.17	20.86
2005	1,232	491	39.85	640 (7,746)	5.72	7.96	19.96
2006	1,127	421	37.36	541 (7,274)	5.18	7.19	19.23
1998-2006	11,769	3,423	29.64	4,325 (70,169)	4.15	6.32	21.63
Annual average during the pre-SOX (1998-2001)	1,394	297	21.50	363 (7,991)	2.93	4.94	22.91
Annual average during the post-SOX (2002-2006)	1,239	447	36.16	574 (7,641)	5.13	7.43	20.61
Test of difference between pre- and post-SOX (<i>p</i> -value)	-	-	(0.000) ^a	-	(0.000) ^b	(0.000) ^c	(0.000) ^d

Panel B. Distribution of independent director appointments			
Year	Number of newly appointed independent directors (%)	Number of newly appointed seasoned independent directors (%)	Number of newly appointed UIDs (%)
1998	1,204 (12.13)	1033 (85.80)	171 (14.20)
1999	1,163 (11.71)	987 (84.87)	176 (15.13)
2000	1,065 (10.73)	931 (87.42)	134 (12.58)
2001	1,181 (11.89)	993 (84.08)	188 (15.92)
2002	949 (9.56)	773 (81.45)	176 (18.55)
2003	1,199 (12.08)	966 (80.57)	233 (19.43)
2004	1,170 (11.78)	912 (77.95)	258 (22.05)
2005	1,041 (10.48)	864 (83.00)	177 (17.00)
2006	957 (9.64)	799 (83.49)	158 (16.51)
1998-2006	9,929 (100)	8,258 (83.17)	1,671 (16.83)
Annual average during the pre-SOX (1998-2001)	1,153 (11.61)	986 (85.54)	167 (14.46)
Annual average during the post-SOX (2002-2006)	1,063 (10.71)	863 (81.29)	200 (18.71)

Table II
Summary Statistics

The sample consists of 11,769 firm-year observations covered in RiskMetrics for the period 1998-2006. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. ***, **, and * indicate that the mean differences between columns (1) and (3) and between columns (5) and (7) and the median differences between columns (2) and (4) and between columns (6) and (8) are significant at the 1%, 5%, and 10% levels, respectively.

	Pre-SOX				Post-SOX			
	Firms with UIDs		Firms without UIDs		Firms with UIDs		Firms without UIDs	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm characteristics								
Sales (\$ billions)	2.831	0.999	4.093***	1.185***	4.087	1.250	5.532***	1.523***
Sales growth	1.191	1.108	1.184	1.106	1.103	1.080	1.108	1.081
Dividend payer (indicator)	0.545	1.000	0.615***	1.000***	0.556	1.000	0.579	1.000*
Tobin's <i>q</i>	2.278	1.530	2.210	1.540	1.912	1.521	1.964	1.532
Leverage	0.242	0.230	0.245	0.241	0.208	0.197	0.217*	0.209*
ROA	0.147	0.144	0.142	0.135	0.128	0.119	0.131	0.126
R&D/assets	0.027	0.000	0.026	0.000	0.025	0.000	0.025	0.000
Return volatility	0.032	0.029	0.031**	0.028***	0.020	0.018	0.020	0.018
Free cash flow	0.034	0.040	0.027*	0.035***	0.042	0.045	0.045	0.045
Stock performance	0.088	0.012	0.027***	-0.063***	0.056	0.007	0.057	0.020
No. of business segments	4.640	5.000	4.756	5.000	5.012	5.000	5.247***	5.000***
Firm age	23.630	18.000	26.561***	23.500***	26.739	20.000	28.848***	22.000***
Institutional blockholder (indicator)	0.708	1.000	0.692	1.000	0.823	1.000	0.808	1.000
Board characteristics								
Board size	9.783	9.000	9.575*	9.000*	9.613	9.000	9.359***	9.000***
Independent board (indicator)	0.769	1.000	0.671***	1.000***	0.903	1.000	0.841***	1.000***
Director ownership	0.065	0.017	0.070	0.019	0.048	0.014	0.053	0.014
CEO characteristics								
CEO age	54.240	54.000	55.200***	55.000***	55.337	56.000	55.788*	56.000*
CEO-chair duality (indicator)	0.689	1.000	0.697	1.000	0.635	1.000	0.652	1.000
CEO tenure	6.692	5.000	8.168***	5.000***	7.253	5.000	7.874**	5.000
CEO ownership	3.413	1.089	4.182**	1.157	3.119	1.189	3.398	1.187

Table III
Characteristics of Newly Appointed Independent Directors

The sample consists of all independent directors appointed by firms covered in RiskMetrics between 1998 and 2006. We consider a director to be a newly appointed director when she appears on the list of directors for the first time. To be included in the final sample, board information for appointing firms should be available for at least two consecutive years. We delete firms with more than five new director appointments per year, as multiple appointments are likely to be related to major corporate events. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. ***, **, and * indicate that the mean differences between columns (1) and (2), between columns (3) and (4), and between columns (5) and (6) are significant at the 1%, 5%, and 10% levels, respectively.

	Full sample		Subsample			
	UIDs	Seasoned independent directors	UIDs		Seasoned independent directors	
			Pre-SOX	Post-SOX	Pre-SOX	Post-SOX
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.264	0.124***	0.260	0.266	0.110	0.137***
Director age (years)	53.210	57.038***	52.197	53.886***	56.553	57.482***
Busy director	0.006	0.127***	0.006	0.007	0.152	0.104***
<i>Director's experience</i>						
Director with CEO experience	0.000	0.389***	0.000	0.000	0.413	0.367***
Director with corporate experience	0.608	0.891***	0.601	0.583	0.879	0.901**
Director with same industry experience	0.083	0.210***	0.058	0.094*	0.186	0.232***
Director with financial expertise	0.438	0.260***	0.345	0.493***	0.224	0.292***
<i>Director's connections to the CEO</i>						
Director with prior employment connection	0.020	0.057***	0.018	0.021	0.057	0.057
Director with current employment connection	0.004	0.025***	0.007	0.002	0.027	0.023
Director with education connection	0.017	0.025	0.013	0.020	0.024	0.026
Director with other activity connection	0.027	0.036*	0.027	0.025	0.033	0.040
Director with ties to the CEO	0.063	0.130***	0.058	0.065	0.129	0.132

Table IV
Determinants of Unseasoned Independent Director Appointments

The sample consists of 9,463 director-firm-year observations. We obtain the initial sample of independent director appointments from RiskMetrics. The dependent variable is an indicator that takes the value of one if an unseasoned independent director (UID) is appointed to the board and zero if a seasoned independent director is appointed. UIDs are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	Full sample		Subsamples		
			Small cap. firms	Mid cap. firms	S&P 500 firms
	(1)	(2)	(3)	(4)	(5)
SOX (indicator): a	0.380*** (0.000)	-0.644*** (0.004)	-1.568*** (0.000)	-0.353 (0.470)	0.208 (0.610)
Lack of board independence (indicator): b		-0.246* (0.087)	-0.226 (0.236)	-0.342 (0.255)	-0.165 (0.605)
Lack of compensation committee independence (indicator): c		-0.363*** (0.006)	-0.370** (0.047)	-0.305 (0.278)	-0.273 (0.282)
Lack of nomination committee independence (indicator): d		-0.252** (0.048)	-0.450** (0.031)	-0.103 (0.676)	-0.262 (0.264)
Lack of audit committee independence (indicator): e		-0.166*** (0.000)	-0.298*** (0.000)	-0.081 (0.398)	0.006 (0.930)
a*b		0.269 (0.145)	0.276 (0.272)	0.152 (0.678)	0.231 (0.586)
a*c		0.338* (0.051)	0.045 (0.859)	0.380 (0.259)	0.405 (0.226)
a*d		0.537*** (0.001)	0.918*** (0.001)	0.548* (0.070)	0.269 (0.349)
a*e		0.141*** (0.006)	0.315*** (0.000)	0.073 (0.550)	-0.036 (0.658)
Director age	-0.075*** (0.000)	-0.074*** (0.000)	-0.059*** (0.000)	-0.067*** (0.000)	-0.110*** (0.000)
Director with financial expertise (indicator)	1.231 *** (0.000)	1.236*** (0.000)	1.529*** (0.000)	1.361 *** (0.000)	0.978*** (0.000)
Director with corporate experience (indicator)	-2.258*** (0.000)	-2.287*** (0.000)	-2.113*** (0.000)	-2.427*** (0.000)	-2.779*** (0.000)
Log (sales)	-0.139*** (0.000)	-0.136*** (0.000)	-0.028 (0.687)	0.093 (0.253)	-0.211*** (0.002)
Leverage	-0.241 (0.298)	-0.238 (0.313)	-0.142 (0.673)	-0.292 (0.494)	-0.428 (0.381)
No of business segments	-0.016 (0.305)	-0.015 (0.315)	-0.019 (0.464)	-0.026 (0.420)	0.008 (0.763)
Dividend payer (indicator)	0.044 (0.636)	0.030 (0.748)	0.060 (0.653)	-0.023 (0.902)	-0.008 (0.965)
R&D/assets	-0.060 (0.953)	-0.073 (0.942)	1.644 (0.260)	-1.510 (0.422)	3.215* (0.086)
ROA	-0.011 (0.986)	-0.091 (0.879)	1.182 (0.173)	-2.210** (0.031)	-0.136 (0.902)
Stock performance	0.003 (0.965)	0.004 (0.955)	0.073 (0.459)	-0.101 (0.483)	-0.088 (0.546)
Sales growth	-0.266** (0.035)	-0.236* (0.060)	-0.394** (0.030)	-0.215 (0.360)	0.171 (0.527)
Firm age	-0.000	-0.000	0.005	0.006	-0.001

	(0.968)	(0.927)	(0.238)	(0.148)	(0.735)
CEO age	-0.010**	-0.009*	-0.008	-0.020**	-0.016
	(0.047)	(0.068)	(0.312)	(0.033)	(0.105)
CEO-chair duality (indicator)	0.094	0.093	0.093	0.207	0.064
	(0.210)	(0.214)	(0.407)	(0.151)	(0.658)
CEO ownership	-0.006	-0.006	-0.003	-0.005	-0.019
	(0.235)	(0.274)	(0.661)	(0.615)	(0.246)
Director ownership	-0.344	-0.269	-0.306	-0.718	-0.505
	(0.217)	(0.341)	(0.482)	(0.274)	(0.397)
Board size	-0.002	0.009	0.022	0.008	-0.006
	(0.904)	(0.550)	(0.381)	(0.779)	(0.852)
Return volatility	2.733	0.841	1.343	-4.400	8.707
	(0.446)	(0.818)	(0.799)	(0.511)	(0.210)
Free cash flow	1.352**	1.311**	0.462	3.993***	0.922
	(0.034)	(0.036)	(0.589)	(0.001)	(0.457)
Institutional blockholder (indicator)	0.148*	0.179**	0.187	-0.127	0.349**
	(0.061)	(0.024)	(0.156)	(0.354)	(0.012)
Departure of seasoned directors (indicator)	-0.143**	-0.145**	-0.122	-0.151	-0.141
	(0.044)	(0.044)	(0.272)	(0.265)	(0.340)
Constant	-10.799***	-9.720***	-9.561***	-9.082***	9.020***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Industry fixed effects	Y	Y	Y	Y	Y
Number of observations	9,463	9,463	3,294	2,403	3,635
Pseudo R^2	0.193	0.200	0.213	0.213	0.228

Table V
Cumulative Abnormal Returns (CARs) around the Announcement Date of Independent Director Appointments

Panel A presents the univariate tests of all independent director appointments. In panel B, the sample in columns (1)-(3) ((4)-(6)) consists of 416 (190) uncontaminated unseasoned independent director (UID) appointments and 190 (190) matching uncontaminated seasoned independent director appointments made by the same firms that elect UIDs within three years for the period 1998-2006. We obtain the initial sample of independent director appointments from RiskMetrics. The dependent variable is the cumulative abnormal return (CAR) from one day before to one day after the director appointment announcement. To calculate abnormal returns we use a market model, where we estimate the parameters using days -280 to -61 relative to the news announcement. The equally weighted CRSP returns are used as the market portfolio returns. UIDs are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. P-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Panel A. All independent director appointments

CAR (-1,+1)	UIDs (N=416)			Seasoned directors (N=190)			Test of difference (p-value)			
	All	Pre-SOX	Post-SOX	All	Pre-SOX	Post-SOX	(1)-(4)	(2)-(3)	(2)-(5)	(3)-(6)
	(1)	(2)	(3)	(4)	(5)	(6)				
Mean	-0.54% (0.005)	-1.18% (0.002)	-0.28% (0.167)	0.52% (0.125)	1.18% (0.106)	0.18% (0.610)	(0.006)	(0.071)	(0.002)	(0.437)
Median	-0.39% (0.006)	-1.32% (0.002)	-0.11% (0.263)	0.004 (0.292)	0.73% (0.203)	0.27% (0.718)	(0.014)	(0.024)	(0.002)	(0.538)

Panel B.						
Independent variables	(1)	(2)	(3)	(4)	(5)	(6)
Unseasoned independent director (UID, indicator): a	-0.011*** (0.004)	-0.026*** (0.007)	-0.049*** (0.008)	-0.011** (0.037)	-0.035*** (0.004)	-0.060*** (0.004)
SOX (indicator): b		-0.014 (0.120)	-0.042** (0.016)		-0.018* (0.056)	-0.048*** (0.004)
ROA: c	-0.051* (0.058)	-0.048* (0.068)	-0.227** (0.015)	-0.058 (0.103)	-0.050 (0.144)	-0.225*** (0.008)
a*b		0.022** (0.037)	0.042** (0.031)		0.034*** (0.008)	0.058*** (0.008)
a*c			0.182* (0.082)			0.200* (0.065)
b*c			0.218** (0.030)			0.238** (0.015)
a*b*c			-0.162 (0.140)			-0.193 (0.101)
Director age	-0.000 (0.961)	0.000 (0.893)	0.000 (0.968)	0.000 (0.443)	0.000 (0.558)	0.000 (0.575)
Director with financial expertise (indicator)	0.008** (0.045)	0.007* (0.074)	0.007* (0.058)	0.012** (0.033)	0.012** (0.026)	0.012** (0.025)
Director with corporate experience (indicator)	0.002 (0.634)	0.004 (0.457)	0.004 (0.438)	0.005 (0.442)	0.006 (0.329)	0.005 (0.384)
Log (sales)	-0.001 (0.485)	-0.001 (0.534)	-0.001 (0.715)	-0.000 (0.965)	0.001 (0.644)	0.002 (0.293)
Tobin's q	-0.002 (0.281)	-0.003 (0.222)	-0.003 (0.187)	-0.004 (0.187)	-0.004 (0.132)	-0.005* (0.097)
Leverage	0.020* (0.088)	0.020 (0.104)	0.019 (0.103)	0.028* (0.084)	0.023 (0.126)	0.021 (0.145)
R&D/assets	0.043 (0.502)	0.043 (0.512)	0.027 (0.656)	0.071 (0.344)	0.075 (0.336)	0.059 (0.376)
Return volatility	-0.070 (0.761)	-0.080 (0.695)	-0.010 (0.960)	-0.221 (0.503)	-0.094 (0.743)	0.008 (0.980)
Board size	-0.000 (0.632)	-0.001 (0.497)	-0.001 (0.396)	-0.001 (0.419)	-0.001 (0.450)	-0.002 (0.291)

Independent board (indicator)	-0.003 (0.620)	-0.003 (0.604)	-0.004 (0.518)	-0.010 (0.265)	-0.009 (0.306)	-0.009 (0.264)
Departure of seasoned directors (indicator)	-0.006 (0.131)	-0.005 (0.203)	-0.005 (0.226)	-0.008 (0.129)	-0.008 (0.134)	-0.008 (0.136)
Constant	0.029 (0.306)	0.037 (0.210)	0.058* (0.069)	0.038 (0.182)	0.033 (0.231)	0.051* (0.088)
$a + (a*b) = 0$	-	0.322	-	-	0.834	-
Year fixed effects	Y	N	N	Y	N	N
Industry fixed effects	Y	Y	Y	Y	Y	Y
Number of observations	602	602	602	372	372	372
Adjusted R^2	0.054	0.051	0.079	0.116	0.142	0.181

Table VI
Likelihood of Missing Board Meeting

The sample consists of 15,436 director-firm-year observations for the period 1998-2003. We obtain the initial sample of independent directors from RiskMetrics. Since we restrict the sample to directors for the first 3 year of their service after their appointment to a board, the last two years of observations are not used in the analysis. The dependent variable is an indicator that takes the value of one if a director attends less than 75% of board meetings during a fiscal year and zero otherwise. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the directorship level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	Logit		LPM	
	(1)	(2)	(3)	(4)
Unseasoned independent director (UID, indicator): a	0.082 (0.678)	-0.085 (0.757)	0.001 (0.908)	-0.009 (0.147)
SOX (indicator): b		-0.105 (0.467)		-0.003 (0.480)
a*b		0.307 (0.364)		0.016** (0.024)
Director age	-0.012 (0.207)	-0.012 (0.189)	-0.000 (0.153)	-0.000 (0.138)
Tenure	-0.077 (0.450)	-0.067 (0.508)	-0.005 (0.185)	-0.004 (0.210)
No. of other directorships	0.123** (0.025)	0.123** (0.024)	0.003* (0.058)	0.003* (0.056)
Director with financial expertise (indicator)	-0.367** (0.011)	-0.375*** (0.009)	-0.007** (0.032)	-0.007** (0.024)
Director with corporate experience (indicator)	0.522** (0.039)	0.538** (0.035)	0.012*** (0.008)	0.013*** (0.006)
Director meeting fee	-0.056 (0.429)	-0.063 (0.375)	-0.002* (0.059)	-0.002** (0.047)
No. of board meetings	0.009 (0.615)	0.005 (0.767)	0.001 (0.218)	0.001 (0.315)
Board size	0.067** (0.010)	0.068*** (0.008)	-0.001 (0.591)	-0.001 (0.537)
Independent board (indicator)	-0.084 (0.606)	-0.097 (0.553)	0.012* (0.058)	0.012* (0.077)
Log (sales)	-0.044 (0.438)	-0.032 (0.560)	-0.006 (0.392)	-0.004 (0.475)
Tobin's <i>q</i>	-0.090 (0.102)	-0.097* (0.080)	-0.001 (0.671)	-0.001 (0.583)
ROA	2.357** (0.020)	2.557** (0.013)	0.022 (0.571)	0.025 (0.508)
Return volatility	7.946 (0.227)	12.212** (0.033)	-0.105 (0.648)	0.151 (0.440)
Stock performance	-0.220* (0.080)	-0.193* (0.080)	-0.007** (0.035)	-0.006* (0.051)
Constant	-12.903*** (0.000)	-13.146*** (0.000)	0.074 (0.162)	0.069 (0.176)
a + (a*b) = 0	-	0.370	-	0.175
Year fixed effects	Y	N	Y	N
Industry fixed effects	Y	Y	N	N
Firm fixed effects	N	N	Y	Y
Number of observations	15,027	15,027	15,436	15,436
Pseudo R^2 /Adjusted R^2	0.040	0.038	0.023	0.023

Table VII
Likelihood of Committee Assignment

The sample consists of 15,436 director-firm-year observations for the period 1998-2003. We obtain the initial sample of independent directors from RiskMetrics. Since we restrict the sample to directors for the first 3 year of their service after their appointment to a board, the last two years of observations are not used in the analysis. The dependent variable is an indicator that takes the value of 1 if a director is a member of one of the monitoring committees (nominating, compensation, audit, or corporate governance committee) in a given year and zero otherwise. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the directorship level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	Logit		LPM	
	(1)	(2)	(3)	(4)
Unseasoned independent director	-0.088	-0.249***	-0.017	-0.059***
(UID, indicator): a	(0.167)	(0.003)	(0.154)	(0.001)
SOX (indicator): b		0.310***		0.057***
		(0.000)		(0.000)
a*b		0.348***		0.082***
		(0.001)		(0.000)
Director age	0.019***	0.019***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)
Tenure	0.381***	0.408***	0.090***	0.089***
	(0.000)	(0.000)	(0.000)	(0.000)
No. of other directorships	0.116***	0.111***	0.016***	0.016***
	(0.000)	(0.000)	(0.000)	(0.000)
Director with financial expertise (indicator)	0.032	0.041	0.018*	0.019**
	(0.548)	(0.433)	(0.056)	(0.039)
Director with corporate experience (indicator)	-0.100	-0.079	-0.023*	-0.018
	(0.154)	(0.251)	(0.095)	(0.177)
Director meeting fee	-0.011	-0.009	0.001	0.001
	(0.206)	(0.327)	(0.812)	(0.709)
No. of board meetings	0.021***	0.020***	0.001	0.001
	(0.007)	(0.007)	(0.491)	(0.490)
Board size	-0.095***	-0.098***	-0.018***	-0.022***
	(0.000)	(0.000)	(0.000)	(0.000)
Independent board (indicator)	0.065	0.090	-0.006	0.010
	(0.318)	(0.160)	(0.691)	(0.518)
Log (sales)	0.085***	0.096***	0.025	0.093***
	(0.000)	(0.000)	(0.173)	(0.000)
Tobin's <i>q</i>	0.001	0.003	-0.011*	-0.006
	(0.956)	(0.896)	(0.091)	(0.319)
ROA	0.329	0.364	0.030	-0.127
	(0.356)	(0.297)	(0.785)	(0.255)
Return volatility	2.756	5.232**	0.783	1.191**
	(0.275)	(0.021)	(0.215)	(0.021)
Stock performance	-0.073*	0.045	0.001	0.026***
	(0.094)	(0.285)	(0.945)	(0.002)
Constant	-16.072***	-15.265***	0.057	-0.279**
	(0.000)	(0.000)	(0.682)	(0.038)
a + (a*b) = 0	-	0.227	-	0.121
Year fixed effects	Y	N	Y	N
Industry fixed effects	Y	Y	N	N
Firm fixed effects	N	N	Y	Y
Number of observations	15,386	15,386	15,436	15,436
Adjusted <i>R</i> ²	0.054	0.048	0.158	0.149

Table VIII
Regression of Number of Other Directorships Held by Directors on Explanatory Variables

The sample consists of 15,418 director-firm-year observations for the period 1998-2003. We obtain the initial sample of independent directors from RiskMetrics. Since we restrict the sample to directors for the first 3 year of their service after their appointment to a board, the last two years of observations are not used in the analysis. The dependent variable is the number of directorships in other RiskMetrics firms held by directors in the first three years of their appointment. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the directorship level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	OLS (1)	OLS (2)	LPM (3)	LPM (4)
Unseasoned independent director (UID, indicator): a	-0.031** (0.023)	-0.071*** (0.000)	-0.022 (0.168)	-0.082*** (0.000)
SOX (indicator): b		-0.020 (0.119)		-0.032** (0.027)
a*b		0.073*** (0.001)		0.107*** (0.000)
Director age	-0.001 (0.247)	-0.001 (0.286)	-0.000 (0.484)	-0.000 (0.540)
Tenure	0.015*** (0.005)	0.014*** (0.007)	0.021*** (0.006)	0.021*** (0.005)
No of directorships at the time of appointment	0.906*** (0.000)	0.906*** (0.000)	0.900*** (0.000)	0.900*** (0.000)
Director with financial expertise (indicator)	0.045*** (0.001)	0.045*** (0.001)	0.048*** (0.000)	0.047*** (0.000)
Director with corporate experience (indicator)	0.029** (0.041)	0.029** (0.038)	0.016 (0.285)	0.018 (0.242)
Director meeting fee	-0.002 (0.161)	-0.001 (0.268)	-0.003 (0.187)	-0.002 (0.252)
No. of board meetings	0.000 (0.887)	0.001 (0.729)	0.002 (0.314)	0.002 (0.283)
Board size	-0.003 (0.115)	-0.003 (0.103)	-0.004 (0.389)	-0.004 (0.390)
Independent board (indicator)	0.025* (0.064)	0.025* (0.060)	0.029 (0.135)	0.031 (0.107)
Log (sales)	0.014*** (0.001)	0.013*** (0.002)	0.012 (0.568)	0.011 (0.568)
Tobin's <i>q</i>	0.004 (0.450)	0.005 (0.363)	0.011 (0.245)	0.013 (0.188)
ROA	-0.062 (0.431)	-0.083 (0.289)	-0.002 (0.986)	-0.032 (0.804)
Return volatility	-0.114 (0.842)	-0.468 (0.357)	-1.354 (0.148)	-1.410* (0.066)
Stock performance	-0.009 (0.331)	-0.017* (0.052)	-0.008 (0.456)	-0.014 (0.169)
Constant	-0.132** (0.021)	-0.088 (0.117)	-0.033 (0.837)	0.010 (0.947)
a + (a*b) = 0	-	0.904	-	0.237
Year fixed effects	Y	N	Y	N
Industry fixed effects	Y	Y	N	N
Firm fixed effects	N	N	Y	Y
Number of observations	15,368	15,368	15,418	15,418
Adjusted <i>R</i> ²	0.841	0.841	0.846	0.846

Table IX
Likelihood of Forced CEO Turnovers

The sample consists of 10,481 firm-year observations covered in RiskMetrics for the period 1998-2006. We obtain the sample of forced CEO turnover from Jenter and Kanaan (2011) for the period from 1998 to 2001 and Peters and Wagner (2012) for the period from 2001 to 2006. The dependent variable is an indicator that takes the value of one if a forced CEO turnover occurs in a given year and zero otherwise. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	Logit		LPM	
	(1)	(2)	(3)	(4)
Unseasoned independent director (UID, indicator): a	-0.095 (0.620)	-0.160 (0.392)	-0.002 (0.719)	-0.004 (0.374)
Stock performance: b	-0.789*** (0.004)	-0.808*** (0.009)	-0.009** (0.026)	-0.011** (0.021)
SOX (indicator): c		-0.288* (0.084)		-0.006 (0.211)
a*b	-0.567 (0.155)	0.004 (0.994)	-0.001 (0.864)	0.009 (0.119)
b*c		-0.090 (0.820)		-0.000 (0.963)
a*b*c		-0.957* (0.100)		-0.026** (0.048)
CEO ownership	-0.109*** (0.002)	-0.111*** (0.002)	-0.002*** (0.001)	-0.002*** (0.001)
CEO-chair duality (indicator)	-0.623*** (0.000)	-0.622*** (0.000)	-0.030*** (0.000)	-0.030*** (0.000)
Old CEO (indicator)	-0.940*** (0.000)	-0.925*** (0.000)	-0.034*** (0.000)	-0.034*** (0.000)
Log (CEO tenure)	0.108 (0.307)	0.102 (0.340)	0.039*** (0.000)	0.039*** (0.000)
Board size	-0.034 (0.285)	-0.034 (0.280)	-0.000 (0.991)	0.000 (0.928)
Independent board (indicator)	0.163 (0.336)	0.137 (0.417)	-0.003 (0.655)	-0.005 (0.424)
Log (sales)	0.146** (0.010)	0.124** (0.026)	0.026*** (0.000)	0.023*** (0.000)
No. of business segments	0.007 (0.810)	-0.005 (0.874)	-0.001 (0.497)	-0.002 (0.299)
Return volatility	23.618*** (0.002)	14.862** (0.015)	0.405 (0.309)	0.346 (0.217)
Departure of seasoned directors (indicator)	0.392*** (0.007)	0.373*** (0.010)	0.006 (0.151)	0.006 (0.153)
Constant	-16.134*** (0.000)	-16.222*** (0.000)	-0.198*** (0.000)	-0.174*** (0.000)
(a*b) + (a*b*c) = 0	-	0.038	-	0.146
Year fixed effects	Y	N	Y	N
Industry fixed effects	Y	Y	N	N
Firm fixed effects	N	N	Y	Y
Number of observations	10,390	10,390	10,481	10,481
Pseudo R^2 / Adjusted R^2	0.119	0.111	0.019	0.019

Table X
Regressions of CEO Compensation on Explanatory Variables

The sample consists of 10,244 firm-year observations covered in RiskMetrics and ExecuComp for the period 1998-2006. The dependent variable is the logarithm of CEO total pay. CEO total pay (ExecuComp variable: TDC1) includes stock options granted, cash compensation, restricted stock grants, other annual compensation, long term incentive payouts, and all other compensation. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	Log (CEO total pay)				
	(1)	(2)	(3)	(4)	(5)
Unseasoned independent director (UID, indicator): a	0.005 (0.806)	0.067** (0.033)	0.014 (0.546)	0.086** (0.021)	0.033 (0.474)
SOX (indicator): c		0.165*** (0.000)		0.156*** (0.000)	0.156*** (0.000)
a*c		-0.054 (0.145)		-0.090** (0.035)	-0.011 (0.830)
At least one UID sits on the compensation committee (indicator): b					0.144** (0.021)
b*c					-0.206*** (0.005)
Log (sales)	0.155*** (0.000)	0.238*** (0.000)	0.430*** (0.000)	0.428*** (0.000)	0.428*** (0.000)
Stock performance	0.099*** (0.000)	0.102*** (0.000)	0.118*** (0.000)	0.119*** (0.000)	0.119*** (0.000)
ROA	0.592*** (0.004)	0.484** (0.019)	-0.269 (0.243)	-0.306 (0.180)	-0.306 (0.181)
Log (CEO tenure)	0.011 (0.472)	0.014 (0.384)	-0.055*** (0.004)	-0.051*** (0.008)	-0.051*** (0.008)
CEO-chair duality (indicator)	0.048 (0.109)	0.031 (0.297)	0.198*** (0.000)	0.189*** (0.000)	0.189*** (0.000)
Board size	0.009 (0.198)	0.004 (0.527)	0.011* (0.094)	0.009 (0.166)	0.009 (0.158)
Independent board (indicator)	0.045 (0.119)	0.079*** (0.007)	0.146*** (0.000)	0.160*** (0.000)	0.161*** (0.000)
Tobin's <i>q</i>	0.063*** (0.000)	0.072*** (0.000)	0.121*** (0.000)	0.124*** (0.000)	0.124*** (0.000)
Return volatility	-1.707 (0.246)	-2.733** (0.027)	2.843* (0.086)	1.727 (0.232)	1.690 (0.241)
No. of business segments	0.005 (0.459)	0.021*** (0.003)	0.006 (0.395)	0.008 (0.241)	0.008 (0.240)
Departure of seasoned directors (indicator)	-0.014 (0.389)	0.006 (0.694)	-0.009 (0.678)	-0.000 (0.996)	-0.000 (0.994)
Constant	6.229*** (0.000)	5.767*** (0.000)	3.525*** (0.000)	3.646*** (0.000)	3.650*** (0.000)
a + (a*c) = 0	-	0.579	-	0.909	-
b + (b*c) = 0	-	-	-	-	0.146
Year fixed effects	Y	N	Y	N	N
Industry fixed effects	N	N	Y	Y	Y
Firm fixed effects	Y	Y	N	N	N
Number of observations	10,244	10,244	10,244	10,244	10,244
Adjusted <i>R</i> ²	0.108	0.087	0.442	0.439	0.439

Table XI
Likelihood of Earnings Restatements

The sample consists of 10,214 firm-year observations covered in RiskMetrics for the period 1998-2006. We obtain a list of firms that misreport accounting earnings from Andy Leone's website; this list includes firms that misreported their financial statements intentionally during the period from January 1997 to June 2006. We manually collect information on misreported fiscal years and quarters by searching *Factiva*. The dependent variable is an indicator that takes the value of one if a firm restates its earnings in a given year due to irregularities (i.e., intentional manipulation) and zero otherwise. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variables	(1)	(2)	(3)
Unseasoned independent director (UID, indicator): a	-0.041 (0.842)	-0.275 (0.429)	-0.663 (0.239)
SOX (indicator):c		-0.207 (0.291)	-0.208 (0.290)
a*c		0.403 (0.324)	1.180** (0.049)
At least one UID sits on the audit committee (indicator): b			0.637 (0.329)
b*c			-1.475** (0.043)
Log (sales)	0.179* (0.061)	0.184* (0.052)	0.182* (0.053)
ROA	-1.623 (0.167)	-1.600 (0.173)	-1.601 (0.174)
Tobin's <i>q</i>	0.095 (0.157)	0.121* (0.079)	0.121* (0.081)
Leverage	1.793*** (0.005)	1.955*** (0.001)	1.967*** (0.001)
Board size	0.081 (0.105)	0.076 (0.131)	0.074 (0.139)
Independent board (indicator)	-0.067 (0.778)	-0.100 (0.673)	-0.100 (0.675)
CEO-chair duality (indicator)	0.076 (0.695)	0.118 (0.537)	0.115 (0.547)
Director ownership	-2.278** (0.035)	-2.148** (0.036)	-2.207** (0.032)
Institutional blockholder (indicator)	0.228 (0.316)	0.194 (0.386)	0.194 (0.386)
Departure of seasoned directors (indicator)	0.061 (0.721)	0.115 (0.487)	0.108 (0.514)
Constant	-18.502*** (0.000)	-17.869*** (0.000)	-17.795*** (0.000)
a + (a*c) = 0	-	0.599	0.061
b + (b*c) = 0	-	-	0.039
Year fixed effects	Y	N	N
Industry fixed effects	Y	Y	Y
Number of observations	10,214	10,214	10,214
Pseudo <i>R</i> ²	0.088	0.069	0.074

Table XII
OLS Regressions of Acquirers' Announcement Returns on Explanatory Variables

The sample consists of 2,646 M&As made by firms covered in RiskMetrics between 1998 and 2006. We obtain the initial sample of M&A firms from SDC. The dependent variable is the cumulative abnormal return (CAR) of the acquirer from one day before to one day after the M&A announcement. To calculate abnormal returns we use a market model, where we estimate the parameters using days -280 to -61 relative to the news announcement. The equally weighted CRSP returns are used as the market portfolio returns. We consider diversifying M&As in which the acquirers' change in operating income during the prior three years is above the sample median as those that require greater board advisory needs. Diversifying M&As in which the acquirers' change in operating income during the prior three years is below the sample median are classified as those that require greater board supervision needs. Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. *P*-values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variable	Full sample		Subsamples	
			Diversifying deals with high advising needs	Diversifying deals with high monitoring needs
	(1)	(2)	(3)	(4)
Unseasoned independent director (UID, indicator): a	-0.005** (0.041)	-0.011*** (0.009)	-0.010 (0.161)	-0.019** (0.018)
SOX: b		-0.004 (0.135)	-0.005 (0.324)	-0.004 (0.481)
a*b		0.010* (0.061)	0.018* (0.053)	0.015 (0.120)
Log (assets)	-0.004*** (0.000)	-0.004*** (0.000)	-0.000 (0.999)	-0.004** (0.011)
Tobin's <i>q</i>	-0.001 (0.321)	-0.001 (0.201)	-0.004 (0.111)	-0.002 (0.313)
ROA	0.022 (0.364)	0.023 (0.340)	0.089 (0.106)	0.036 (0.529)
Free cash flow	0.005 (0.869)	0.004 (0.874)	-0.009 (0.878)	-0.062 (0.349)
Leverage	0.006 (0.625)	0.002 (0.850)	-0.018 (0.405)	-0.002 (0.938)
Board size	-0.000 (0.347)	-0.000 (0.491)	0.000 (0.775)	-0.001 (0.110)
Independent board (indicator)	-0.005 (0.174)	-0.005 (0.155)	-0.011* (0.070)	-0.002 (0.790)
Relative deal size	-0.051*** (0.000)	-0.049*** (0.000)	-0.036 (0.150)	-0.075*** (0.002)
Diversify (indicator)	-0.005** (0.043)	-0.005** (0.043)		
Stock deal (indicator)	-0.006 (0.131)	-0.005 (0.214)	-0.008 (0.255)	-0.006 (0.421)
All-cash deal (indicator)	0.008*** (0.001)	0.008*** (0.001)	0.004 (0.434)	0.007* (0.073)
Public target (indicator)	-0.035*** (0.000)	-0.035*** (0.000)	-0.032** (0.040)	-0.022** (0.048)
Private target (indicator)	-0.020** (0.016)	-0.019** (0.019)	-0.010 (0.508)	-0.015 (0.173)
Subsidiary target (indicator)	-0.013 (0.101)	-0.013 (0.114)	-0.010 (0.527)	-0.003 (0.754)
Departure of seasoned directors (indicator)	0.001 (0.662)	0.000 (0.855)	-0.005 (0.270)	0.002 (0.618)
Constant	0.068*** (0.000)	0.069*** (0.000)	0.065 (0.296)	0.003 (0.897)

$a + (a*b) = 0$	-	0.687	0.195	0.364
Year fixed effects	Y	N	Y	N
Industry fixed effects	Y	Y	Y	Y
Number of observations	2,646	2,646	684	983
Adjusted R^2	0.078	0.074	0.052	0.062

Table XIII
Regressions of Firm Value (Tobin's q) on Explanatory Variables

The sample consists of 11,220 firm-year observations covered in RiskMetrics for the period from 1998 to 2006. The dependent variable is the logarithm of Tobin's q in columns in (1) and (2) and the industry-adjusted Tobin's q in columns (3)-(5). Industry-adjusted Tobin's q is computed by subtracting the median Tobin's q for a sample firm's Fama and French (1997) 48 industry from the sample firm's raw Tobin's q . Unseasoned independent directors (UIDs) are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms. The Appendix provides a detailed description of the variables. P -values, reported in parentheses, are based on standard errors adjusted for heteroskedasticity and allow for clustering at the firm level. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Independent variable	Log (Tobin's q)		Industry-adjusted Tobin's q	
	(1)	(2)	(3)	(4)
Unseasoned independent director (UID, indicator): a	0.002 (0.886)	-0.029 (0.161)	0.020 (0.412)	-0.062 (0.128)
SOX (indicator): b		-0.028** (0.048)		-0.129*** (0.000)
a*b		0.050** (0.028)		0.151*** (0.001)
Board size	0.015*** (0.000)	0.014*** (0.000)	-0.010 (0.195)	-0.015* (0.057)
Independent board (indicator)	-0.017 (0.274)	-0.016 (0.320)	-0.027 (0.412)	-0.005 (0.883)
No. of business segments	-0.002 (0.629)	-0.001 (0.758)	0.000 (0.955)	0.008 (0.340)
Leverage	-1.276*** (0.000)	-1.277*** (0.000)	-0.227 (0.158)	-0.302* (0.055)
Log (sales)	-0.202*** (0.000)	-0.195*** (0.000)	-0.468*** (0.000)	-0.415*** (0.000)
Return volatility	-0.876 (0.202)	-1.208 (0.118)	-1.923 (0.284)	-6.241*** (0.000)
R&D/assets	1.258*** (0.001)	1.256*** (0.001)	5.468*** (0.000)	5.442*** (0.000)
ROA	3.810*** (0.000)	3.776*** (0.000)	3.907*** (0.000)	3.761*** (0.000)
CEO-chair duality (indicator)	0.028** (0.034)	0.027** (0.038)	0.017 (0.567)	0.003 (0.930)
CEO ownership	0.001 (0.375)	0.001 (0.380)	0.010*** (0.002)	0.010*** (0.002)
Departure of seasoned directors (indicator)	-0.046*** (0.000)	-0.044*** (0.000)	-0.024 (0.188)	-0.013 (0.473)
Constant	1.079*** (0.000)	1.058*** (0.000)	3.195*** (0.000)	3.053*** (0.000)
a + (a*b) = 0	-	0.110	-	0.001
Year fixed effects	Y	N	Y	N
Industry fixed effects	N	N	N	N
Firm fixed effects	Y	Y	Y	Y
Number of observations	11,220	11,220	11,194	11,194
Adjusted R^2	0.338	0.339	0.147	0.134

Appendix

This appendix provides detailed descriptions of the construction of all the variables used in the tables.

Variable	Description	Source
Director Characteristics		
Busy director (indicator)	One if an independent director hold three or more directorships in other RiskMetrics firms (Masulis, Wang, and Xie (2012))	RiskMetrics
Director age	Director age	RiskMetrics
No. of directorships at the time of appointment	Number of other directorships when a director was appointed for the first time	RiskMetrics
No. of other directorships	Number of directorships in other RiskMetrics firms	RiskMetrics
Unseasoned independent director (UID, indicator)	UIDs are first-time directors who have never been a director on the board of a private or public for-profit U.S. company. We consider a director to be a UID during the first three years of her first independent directorship. Directors with inside director experience prior to assuming their first independent directorship are not considered UIDs. If directors assume additional independent directorships within the first three years of their service, they are still considered UIDs at the other firms.	RiskMetrics, BoardEx
Director Experience		
Director with CEO experience (indicator)	One if an independent director is CEO or has served as CEO prior to the current directorship	RiskMetrics, BoardEx
Director with corporate experience (indicator)	One if an independent director has worked or is working for publicly-listed firms	RiskMetrics, BoardEx
Director with financial expertise (indicator)	One if a director has 1) a CPA or a CFA, 2) a job title that is related to financial management (e.g. CFO, treasurer, or banking, finance, investment or accounting title (such as a controller) at present or in prior years, or 3) worked for companies with SIC codes 6000-6999 at present or in prior years	RiskMetrics, BoardEx
Director with same industry experience (indicator)	One if a director has worked or is working for a publicly-listed firm that has the same two-digit SIC code as the current firm she serves as an executive officer	RiskMetrics, BoardEx
Director Connection to the CEO		
Director with current employment connection	Directors who share external directorships in the same firm with the CEO (Fracassi and Tate (2012))	RiskMetrics, BoardEx
Director with prior employment connection	Directors who were employed by the same firm for at least one year as the CEO prior to joining the current company (Fracassi and Tate (2012))	RiskMetrics, BoardEx
Director with other activity connection	Directors who share the same nonprofessional memberships in organizations as the CEO. A director and CEO must be officers or directors in the organization to be considered as connected (Fracassi and Tate (2012))	RiskMetrics, BoardEx
Director with education connection	Directors who attended and graduated the same educational institutions as the CEO within one year of each other (Fracassi and Tate (2012))	RiskMetrics, BoardEx
Director with ties to the CEO (indicator)	One if an independent director has any one of ties listed above to the CEO (Fracassi and Tate (2012))	RiskMetrics, BoardEx

Firm Characteristics

Departure of seasoned directors (indicator)	One if at least one seasoned director has departed a board in recent two years	RiskMetrics
Dividend payer (indicator)	One if a firm pays dividend	Compustat
Firm age	Max (years in CRSP, years in Compustat)	Compustat, CRSP
Free cash flow	(Operating income before depreciation - interest expenses - income taxes - capital expenditures)/total assets	Compustat
Industry-adjusted Tobin's q	Sample firm's raw Tobin's q - median Tobin's q in a sample firm's Fama and French (1997) 48 industry	Compustat
Institutional block holder (indicator)	One if a firm has at least one institutional shareholder holding more than 5% of its common shares	Thompson13F
Leverage	(Long-term debt + short-term debt)/assets	Compustat
Log (sales)	Log of the sales	Compustat
No of business segments	Number of business segments	Compustat
Number of board meetings	Number of board meetings held in a given fiscal year	ExecuComp
R&D/assets	Max (0, R&D expenditures)/total assets	Compustat
Return volatility	Standard deviation of a firm's daily stock returns during a fiscal year	CRSP
ROA	Operating income before depreciation scaled by book value of total assets	Compustat
Sales growth	Current sales/lagged sales	Compustat
SOX (indicator)	One if observations fall in the post-SOX (2002 or thereafter) period and zero otherwise	RiskMetrics
Stock performance	Firm's buy-and-hold return for the year net of the CRSP value-weighted index return.	CRSP
Tobin's q	(Total assets-book equity + market value of equity)/total assets at the fiscal year end	Compustat

Board Characteristics

Board size	Number of directors sitting on a board	RiskMetrics
Director ownership	Percent of common shares outstanding held by all directors on the board at year-end, excluding the CEO	RiskMetrics
Lack of audit committee independence (indicator)	One if the audit committee does not fully consist of independent directors and zero otherwise	RiskMetrics
Lack of board independence (indicator)	One if a board does not have a majority (50%) of independent directors and zero otherwise	RiskMetrics
Lack of compensation committee independence (indicator)	One if the compensation committee does not fully consist of independent directors and zero otherwise	RiskMetrics
Lack of nomination committee independence (indicator)	One if the nomination committee does not fully consist of independent directors and zero otherwise	RiskMetrics

CEO Characteristics

CEO compensation	ExecuComp variable (TDC1) that includes salary, bonus, restricted stock awards, stock option grants, long-term incentive payouts, and all others	ExecuComp
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CEO ownership	Percent of common shared outstanding held by the CEO	RiskMetrics
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CEO-chairman duality (indicator)	One if the CEO is also the Chairman of the board and zero otherwise	RiskMetrics
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Forced CEO turnover	Forced CEO turnovers obtained from Jenter and Kanaan (2011) for the period from 1998 to 2001 and Peters and Wagner (2012) for the period from 2001 to 2006. The identification of forced CEO turnover is described in Jenter and Kanaan (2011) and Peters and Wagner (2012)	
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Log (CEO tenure)	Natural logarithm of the number of years the CEO has served on the board. Corrections made for missing or incorrect information based on the list from Guthrie, Sokolowsky, and Wan (2010)	ExecuComp
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Old CEO (indicator)	One if CEO's age is greater than 60	RiskMetrics
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Deal Characteristics

All-cash deal (indicator)	One for entirely cash-financed deals and zero otherwise	SDC Platinum
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Diversify (indicator)	One if the acquirer and the target are not in the same Fama-French (1997) 48 industry and zero otherwise	SDC Platinum
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Diversifying deals with high monitoring needs (indicator)	One for diversifying M&As in which the acquirers' change in operating income during the prior three years is below the sample median (Schmidt (2009))	SDC Platinum, Compustat
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Diversifying deals with high advising needs (indicator)	One for diversifying M&As in which the acquirers' change in operating income during the prior three years is above the sample median (Schmidt (2009))	SDC Platinum, Compustat
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Private target (indicator)	One for private targets and zero otherwise	SDC Platinum
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Public target (indicator)	One for public targets and zero otherwise	SDC Platinum
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Relative deal size	Deal value / acquirer's market value of total assets	SDC Platinum, Compustat
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Stock deal (indicator)	One if the deal is at least partially finance by stock and zero otherwise	SDC Platinum
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Subsidiary target (indicator)	One for subsidiary targets and zero otherwise	SDC Platinum
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