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Founding Family Firms, CEO Incentive Pay, and Dual Agency Problems*

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This paper contributes to the literature on agency theory by examining relations between family involvement and CEO compensation. Using a panel of 362 small U.S. listed firms, we analyze how founding families influence firm performance through option portfolio price sensitivity. Consistent with the dual agency framework, we find that family firms have lower CEO incentive pay, which is further reduced by higher executive ownership. Interestingly, such incentive pay offsets the positive impact that families have on firm valuation. Collectively, our results show that, compared with non-family firms, lower incentive pay adopted by family firms due to lower agency costs mitigates the direct effect of family involvement on firm performance. Once accounting for CEO incentive pay, we do not observe performance differences between family and non-family firms.

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Introduction

In modern corporations, there exists a common organizational form characterized by dispersed ownership, atomistic shareholders, and separation between ownership and control. Demsetz and Lehn (1985) and Shleifer and Vishny (1986) have long argued that this type of firm is not a comprehensive form of publicly traded corporation. In the past two decades, the economic importance of family firms around the world has been widely recognized in the literature (e.g., Claessens, Djankov, and Lang 2000; Faccio and Lang 2002; La Porta, Lopez-de-Silanes, and Shleifer 1999; Morck, Strangeland, and Yeung 2000), motivating an emerging body of research on family firms with respect to various issues (e.g., Anderson, Duru, and Reeb 2012; Anderson, Mansi, and Reeb 2003; Koropp, Grichnik, and Kellermanns 2013). This study examines the relationships between different types of family firms, non-family firms and agency costs through the pay incentive mechanisms of CEO compensation schemes. Although academic literature on family firms and executive compensation is proliferating, it focuses largely on cash incentives (e.g., Schulze, Lubatkin, and Dino, 2003; Block, 2011; Michiels, Voordeckers, Lybaert, and Steijvers, 2013) and/or current-year compensation based on firm stock (e.g., McConaughy, 2000; Sapp, 2008; Li and Srinivasan, 2011). Our paper complements and extends the existing literature by considering not only stock options granted in the current year but also all other stock options and equity-based compensation awarded to CEOs during their tenures. This approach is especially attractive because it allows us to utilize the information on the total power of CEO performance-based incentive pay.

Outstanding executive stock options, that have not yet been exercised, together with ownership of firm equity as held by executive, comprise executive's wealth portfolio. We estimate the sensitivity of the value of

this portfolio to changes in a firm's stock price (*delta*), relying on the high accuracy method developed by Core and Guay (2002), and used extensively in the literature (see, e.g., Brockman, Martin, and Unlu, 2010; Kim, Li, and Zhang, 2011; Liu and Mauer, 2011). Empirically, it has been shown that the greater is the sensitivity of an executive's option portfolio to changes in the firm's stock price (*delta*), the greater are its value-enhancing incentives. Moreover, recent research documents that value-improving incentives are positively and significantly related to firm value (see, e.g., O'Connor and Rafferty, 2010).

We address our research question, which is rooted in the agency theory, using a sample of 362 small publicly listed U.S. firms during the period of 2001-2005. Among U.S. public firms, family firms are prevalent and persistent forms of organization (see, e.g., Anderson and Reeb, 2003; Holderness 2009). Similar to e.g., Villalonga and Amit (2006) and using hand-collected data, we classify our sample firms into active family firms (run by family member CEO), passive family firms (run by outside CEO), and non-family firms. Under the dual agency framework, we posit that family and non-family firms have different agency costs. More specifically, due to severe owner-manager conflict, agency costs are higher in non-family firms while active and passive family firms have comparable agency costs. Therefore, non-family firms should have higher CEO incentive pay than family firms. Next, we examine the impact of equity ownership on the level of the granted pay incentives. We hypothesize that high equity stake, which provides value-enhancing incentives per se, reduces the need for additional incentives created by executive stock options. Lastly, we use the structural equation model (SEM) to investigate the relation between performance measures and pay incentives. We conjecture that incentives which stem from executive stock option grants and other equity-based instruments mediate the mere impact of family

firms on performance.

Our study adds to the literature in several aspects. First, we analyze relations between family firms and agency costs through a direct incentive pay metric (option portfolio *delta*), rather than using absolute pay levels as in Bartholomeusz and Tanewski (2006) and Gomez-Mejia, Larraza-Kintana, and Makri (2003) and pay-for-performance sensitivity in McConaughy (2000). Hence, this paper contributes to this line of literature regarding CEO compensation in family firms by using a better construct for incentive-alignment purposes. Unlike Gomez-Mejia et al. (2003) and McConaughy (2000), our analysis includes non-family firms too. Second, we refine the typical categorization of "family versus non-family" firms in terms of degree of ownership by family members. Similar to e.g., Anderson and Reeb (2003) and Barontini and Caprio (2006), we classify firms into three different types that reflect varying degrees of family involvement both in ownership structure and in the management. We argue that the CEO's identity regarding family affiliation matters as well. Indeed, we find that the incentive pay appears to differ significantly across different types of family firms, a result which could not be produced by the traditional family firm categorization. Lastly, our study also adds to the literature on the determinants of CEO incentive compensation as well as the literature on corporate policies and firm valuation. This paper shows that once accounting for CEO incentive pay adopted by firms under varying degrees of family control, we do not observe performance differentials across different types of firms. Besides, our results provide evidence that the influence of family ownership is beyond that of typical concentrated ownership. Therefore, research on incentive compensation and firm valuation without considering family presence could result in spurious relations and false implications.

The remainder of this paper proceeds as follows: (1) a brief literature review on family firms relating to dual agency problems and CEO compensation, which is followed by development of hypotheses to be tested; (2) a description of data collection, sample formation, and methodology of empirical analyses; (3) results of the empirical tests; (4) discussion and practical implications; and (5) concluding remarks.

Hypothesis Development

Modern organizations are plagued by agency problems. In a diffusely held firm, the major agency problem emerges as a conflict of interest between managers and shareholders. Managers control the resources and run the firm, whereas dispersed shareholders own the firm but are excluded from management. Because equity ownership by managers is typically low, they pay only a fraction of the costs related to misuse of firm resources for their own benefits. Consequently, managers do not always act in the best interests of shareholders (Jensen and Meckling, 1976; Fama and Jensen, 1983). This type of agency problem is called a “classic owner-manager conflict” (Villalonga and Amit, 2006) and is prevalent among firms characterized by separation between ownership and control. Throughout the paper, we refer to this type of agency problem as Agency Problem I.

Another type of agency problem arises between large shareholders and minority shareholders. Large shareholders may pursue interests that are at odds with the objectives of the remainder of shareholders who are a minority. Expropriation of the minority may be feasible owing to the controlling position that large shareholders have in such firms (Shleifer and Vishny, 1997). This type of agency problem dominates in closely held firms, for example, firms controlled by families. In this paper we label this type of agency problem Agency Problem II.

Clearly, agency problems intertwine, such that family firms are not entirely free of owner-manager conflicts,

and diffusely held firms are not entirely free of the expropriation by large shareholders. Recent empirical research documents that ownership of a typical U.S. firm is fairly diffuse; however, it cannot be considered atomistic (see, e.g, Helwege, Pirinsky, and Stultz, 2007). For instance, Holderness (2009) shows that 89% of his sample S&P500 firms have at least one blockholder. Concentration of ownership by blockholders (financial institutions, corporations, etc.), gives rise to Agency Problem II as defined in the section above, which is arguably more severe in a typical U.S. firm than what it would otherwise be if the equity ownership of the firm was atomistic. Nevertheless, if a firm has e.g., an institutional blockholder, private benefits extracted from the remaining dispersed shareholders by that blockholder are split among a few independent owners (Villalonga and Amit, 2006). Consequently, the incentives to expropriate shareholders in a diffuse ownership firm with an institutional or a corporate blockholder are lower as compared to a closely-held firm with a controlling blockholder (e.g., a family) because this controlling blockholder can divert all private benefits of control to itself. In other words, non-family firms, especially with blockholders, are not exempt from Agency Problem II, but such agency costs are generally lower compared to family-controlled firms.

The magnitude of agency costs that stem from different types of agency problems varies depending on the relationship between ownership and control. Existing research shows that family firms in which CEOs are members of the controlling families significantly outperform non-family firms (see, e.g., Anderson and Reeb, 2003; Barontini and Caprio, 2006; Maury, 2006; Villalonga and Amit, 2006). In addition, family firms with outside professional CEOs have been shown to be more valuable than non-family firms (see, e.g., Anderson and Reeb, 2003; Barontini and Caprio, 2006; Villalonga and Amit, 2006). The empirical evidence leads us to

conclude that family firms have agency costs that are lower than agency costs of non-family firms. Arguably, this difference in the magnitude of agency costs is attributable to the negative effects of owner-manager conflicts in diffuse ownership firms. For instance, Villalonga and Amit (2006) argue that outperformance of family firms suggests that divergent interests of managers and shareholders are more damaging to shareholder wealth than conflicting objectives of minority and large shareholders.

Building on the above arguments, we conjecture that, due to differences in the degree of owner-manager conflicts, family firms have lower agency costs as compared to non-family firms. The reasons for this are twofold. First, firms controlled and run by families do not have owner-manager conflicts and thus agency costs that result from divergent interest between management and shareholders. Second, family-controlled firms with hired professional CEOs incur agency costs that stem from separation of ownership and control; however, the families involved are typically large controlling shareholders that can monitor management more effectively than disperse shareholders can. Hence, family firms with outside CEOs have lower agency costs associated with owner-manager conflicts than non-family firms. With regard to the magnitude of agency costs that result from conflicts with large shareholders, we posit that in non-family firms, these costs are significantly lower as compared to family firms. Furthermore, existing theoretical and empirical research provides no clear indication that this type of agency costs should differ across different types of family firms. We speculate that the level of Agency Problem II increases with the fraction of equity ownership held by large shareholder beyond a given threshold at which entrenchment effect begins to dominate (Morck, Shleifer and Vishny, 1988). However, we cannot conjecture that families should hold higher/lower equity ownership in active family firms as vis-à-vis

passive family firms. Theory and prior empirical work do not provide a consensus view on the relationship between the size of family equity stake and the identity of management in family firms. These arguments together suggest that agency costs related to Agency Problem II in active and passive family firms could be of comparable magnitude.

To diminish the owner-manager conflict and thus the magnitude of agency costs, firms should adopt incentive compensation systems (Jensen and Meckling, 1976). More specifically, firms should use executive call options on firm stock and/or option-like instruments to better align managers' interests with those of outside shareholders (Haugen and Senbet, 1981; Smith and Stulz, 1985). The theoretical arguments advanced above are consistent with existing empirical evidence. For example, Jensen and Murphy (1990), Hall and Liebman (1998), and Frydman and Saks (2010) show that firms extensively use executive stock options to incentivize top management. Moreover, these studies indicate a positive and significant relationship between firm performance and value-increasing pay incentives.

Furthermore, previous research documents that both family CEOs and outside CEOs in family firms receive value-enhancing incentives based on firm equity. For example, McConaughy (2000) reports positive pay-performance sensitivity of executive stock options for family and non-family CEOs. Michiels et al. (2013) find that pay-for-performance plays a significant role in privately-held family firms run by families and outside CEOs. From a somewhat different perspective, Schulze et al. (2003) argue that altruism in family firms compromises the ability of family CEOs to monitor and discipline other family members in top management, thus family firms should grant value-enhancing pay incentives to all family senior executives.

In light of the above discussion of theoretical predictions regarding both types of agency problem and the empirical evidence that the classic ownership-manager conflict in non-family firms is more costly than the conflict between family and non-family shareholders in family firms, we posit that non-family firms should adopt greater value-increasing pay incentives relative to family firms. This conjecture stems from the fact that, as compared to family firms, non-family firms have higher agency costs attributable to agency conflicts between management and disperse shareholders. The above predictions can be formalized as follows:

Hypothesis 1 (H1): Non-family firms have higher agency costs than family firms, hence non-family firms should adopt higher value-enhancing pay incentives than family firms.

Agency problems can be alleviated by equity ownership which provides incentives to maximize shareholder wealth. Therefore, equity ownership can be viewed as a substitute for incentive pay. According to Jensen and Meckling (1976), low stock ownership may be the most important source of manager-shareholder conflict. In diffusely held firms, manager ownership is accumulated mainly through the exercise of executive stock options. Typically, option awards are granted to senior executives on a regular basis throughout their job tenures at firms. It is not uncommon, however, for grants to be made several times during the fiscal year. Interestingly, new CEOs, when assuming office, receive exceptionally large stock option awards of firm shares to instantly provide them with a critical mass of equity ownership. Overall, managers' ownership stake should increase with the length of their tenures, thus increasing their value-enhancing incentives. However, despite the use of stock options and other types of stock-based compensation for the purpose of providing senior executives with a stake in the firm, Ofek and Yermack (2000) show that executives accumulate stock ownership only up to a certain

point, after which they actively trade their holdings.

In a typical family-controlled firm, low equity ownership by management is not a major concern. Family firms usually own a substantial fraction of equity enabling them to exercise control over the firm. The size of the average ownership stake for the largest U.S. family firms is approximately 17% (Anderson and Reeb, 2003; Villalonga and Amit, 2006). Moreover, Holderness (2009) reports that blockholders (including families) own on average 39% of the common stock of publicly listed firms in the U.S. Such concentrated ownership provides incentives to monitor outside CEOs and reduces the need to load managers with executive stock options to boost equity ownership. In light of the above discussion, we formulate our next hypothesis:

Hypothesis 2 (H2): Equity ownership provides value-enhancing incentives per se, hence high equity ownership should markedly reduce the need for value-increasing pay incentives.

As noted above, firms with high agency costs should adopt value-enhancing incentive pay. In other words, such incentive pay is viewed as a remedy to typical agency problems, and thus should effectively improve performance ex-post. For the purpose of this study, we believe that it is crucial to account for value-increasing pay incentives when assessing the impact of family control on firm performance. Prior research on family firms largely ignores the role of compensation incentives in value creation and typically does not include information on pay incentives in empirical specification (see, e.g., Barontini and Caprio, 2006; Maury, 2006; Villalonga and Amit, 2006). We conjecture that if controlled for performance-enhancing incentives, the mere effect of family control on performance could diminish. The above discussion motivates the final hypothesis in our study:

Hypothesis 3 (H3): Incentive pay mediates the relation between family involvement and firm performance,

hence the difference in performance between different types of family firms and non-family firms should be less pronounced.

Methods

Data and Sample

Our analysis focuses on small firms because, in addition to their economic significance¹, small firms tend to be young and have more concentrated ownership, as it has been shown that a decrease in insider ownership is a positive function of time elapsed after an IPO (Helwege, Pirinsky, and Stulz, 2007). Therefore, among small firms we should expect a higher proportion of family firms. As family firms have less severe agency problems than non-family firms, a typical small firm should have lower agency costs than a typical large firm. Besides, a well-known stylized fact about executive compensation is that the value of executive pay packages rises with firm size. Large firms are more complex, often diversified, and thus more difficult to manage. Accordingly, large firms attract top talent who are granted high levels of total compensation as compared to top executives in small firms (Gabaix and Landier, 2008). In the context of our study, nevertheless, there is little theoretical and/or empirical literature indicating different compensation structures with firm size.

We form our sample from companies in the S&P600 SmallCap Index between 2001 and 2005, the most recent period with no major disruptive economic events. Our sample starts in 2001, so that we can avoid market-based performance measures that were significantly inflated in 2000 when the dot-com bubble reached

¹ According to the 2009 OECD report, small and medium-sized enterprises (SMEs) account for more than 99% of all enterprises in the European Union and more than half of the labor force in the private sector in the OECD area.

its climax. Our sample ends in 2005 because in 2006, the U.S. Securities and Exchange Commission introduced new disclosure rules on executive pay, so that the most recent compensation data are not fully compatible with the pre-2006 format. Hence, our sample period is also relatively free of major financial or regulatory events. We exclude firms in this Index that did not survive the full sample period, ensuring that our sample firms remain relatively small. We further exclude utility (SIC codes 1311, 4911 to 4991) and financial firms (SIC codes 6020 to 6799) because these firms are typically under government regulations that might affect their investment policies and ownership structures. We also exclude spin-off firms. These sample selection criteria result in 1,756 firm-year observations representing 362 unique firms. We match our final sample with available accounting data in Compustat, compensation data in ExecuComp, and corporate governance data in RiskMetrics.

To identify family firms, we manually check proxy statements for each company along with other sources when needed², providing us with the following information: identity, ownership, tenure, and biographies of founder(s), board members, blockholders, and the top-five managers when such information is available. We classify family firms based on two dimensions, i.e., family affiliation of board members (control) and of CEOs (management). Following Anderson and Reeb (2003) and Villalonga and Amit (2006), we classify a firm with family control as long as one of the following two criteria is met: (1) the founder or a descendant of the founder sits on the board and/or is a blockholder; (2) at least two board members are related either by blood or marriage. Overall, 48.46% of the sample observations are affiliated with founding families, 46.41% are run and owned by outsiders, and 5.13% are affiliated with non-founding families. We include non-founding family firms among

² We utilize several online sources, such as <http://www.fundinguniverse.com/>.

family-controlled firms in our sample (e.g., Miller, Le Breton-Miller, Lester, and Cannella, 2007)³. Among our 1,756 firm-year observations, 546 (31.09%) are of active family firms, 395 (22.49%) are of passive family firms, and 815 (46.41%) are of non-family firms. It is true that in our sample (of small publicly-traded firms), family firms are more common than non-family firms compared to their more established counterparts. But this does not affect our analysis because our main focus is the comparison between family and non-family firms.

Measures

Incentive Pay Our main estimator of incentive pay is the CEO option portfolio price sensitivity *delta*. Generally, we follow Core and Guay (2002) and Brockman et al. (2010) in using this estimate, which is defined as the change in the value of a CEO's stock holding and option portfolio in response to a 1% change in the firm's stock price. Partial derivatives of the option price with respect to stock price (*delta* δ) are based on the Black-Scholes model (1973) for valuing European call options, adjusted for dividend payouts by Merton (1973)⁴. In our study, we assume that incentive pay serves as a remedy for agency problems. In other words, incentive pay captures the magnitude of agency costs for different types of firm in our sample.

Performance We use two measures of firm performance, namely, return on assets (ROA) and Tobin's Q (Q), which summarize information on operating and market performance, respectively. ROA is calculated by dividing the earnings before interest and taxes by total assets. This ratio is an accounting measure of performance, where performance can also be viewed as realized performance (backward-looking). Q is the market-to-book ratio, defined as the market value of assets scaled by their book value. In contrast to ROA, Q is

³ In some cases, we cannot obtain founder information. It is also likely that we lose track of founding family members. Thus, we underestimate the true proportion of family firms in the sample. This would potentially work against our testing hypotheses.

⁴ For instance, see Brockman et al. (2010) for a detailed description of the computation of the option delta.

viewed as a measure of firm valuation (forward-looking). Bartholomeusz and Tanewski (2006) argue that Q can be used to measure deviations from wealth maximization. In this paper, we adopt both measures, providing us with different perspectives on firm performance.

Control Variables In our regression analysis, to avoid confounding effects, we include several control variables that have been found to influence incentive pay and/or performance (e.g., Coles, Daniel and Naveen 2006; Kale, Reis, and Venkateswaran 2009). For incentive pay, we use CEO age and ownership, firm size, firm age, leverage, investment, and a set of corporate governance proxies for minority shareholder protection and board structure/independence. To measure minority shareholder protection, we use the GIM Index (Gompers, Ishii, and Metrick 2003) and the Entrenchment Index (Bebchuk, Cohen, and Ferrell 2009). Higher index scores imply that more anti-takeover provisions have been adopted by firms, suggesting less protection for minority shareholders. For performance, we include firm size, firm age, firm risk, leverage, investment, dividend payouts, and three corporate governance proxies for board structure/independence. We provide detailed definitions and data sources for all variables in the regression analysis in Appendix A.

Empirical Specification

To analyze the relations between incentive pay (*delta*) and family firm type (to test *H1* and *H2*), we employ a Tobit model (e.g., Hartzell and Starks 2003) due to the intermittent feature of option grants as compensation.

The main model specification is as follows:

$$Incentive\ Pay = \beta_1 * \Delta(MV) + \beta_2 * \Delta(MV) * D(Passive\ Family\ Firm) + \beta_3 * \Delta(MV) * D(Active\ Family\ Firm) + \beta_4 * D(Passive\ Family\ Firm) + \beta_5 * D(Active\ Family\ Firm) + \sum \beta_k (Control\ Variables)$$

where $\Delta(MV)$ is the change in market capitalization in the current year. Two dummy variables proxy for family firm types. In each specification, we control for year fixed effects and industry fixed effects, using 1-digit Standard Industrial Classification (SIC) codes. Standard deviations are clustered at the 1-digit SIC level. Our main coefficients of interest are β_4 and β_5 , which are both predicted to have negative values, according to *H1*.

To examine whether (family) ownership has differential effects on incentive pay, for each firm type, we form two subgroups based on ownership and run separate regressions. Estimates of the ownership variable capture the direct effect of ownership in six different subgroups. Specifically, we simplify our aforementioned model specification as follows:

$$\text{Incentive Pay} = \beta_1 * \Delta(MV) + \beta_2 * \text{Ownership} + \sum \beta_k (\text{Control Variables})$$

Our main coefficient of interest is β_2 , which is expected to differ (in terms of magnitude and/or sign) in the two subgroups for each type of family firm, according to *H2*.

Next, to test *H3*, i.e., whether value-enhancing incentive pay adopted by families effectively addresses agency problems, we adopt a structural equation model (SEM) that encompasses a wide range of models by considering various paths (causality) and correlations between variables, both dependent and independent. Relevant to our purposes, a properly specified structural equation model can be used to address endogeneity issues and produce estimates similar to those of seemingly unrelated regression or simultaneous equation analyses, among other desirable features (Tomarken and Waller, 2005). The path diagram in our structural model is displayed in Figure 1. A path, shown as an arrow drawn from one variable to another, indicates a (causal)

relationship between two variables.

[Please insert Figure 1 here]

As shown in Figure 1, there are two sets of linear regressions in the model, one related to performance (direct effect) and one related to decisions regarding incentive pay, which are allowed to further affect performance (indirect effect). We also specify variables to be correlated (based on the correlations between variables of interest). Standard deviations are clustered at the industry-level. Note that, to test our hypothesis properly, family presence is allowed to directly impact performance. This can capture the effects of missing variables or any channels other than incentive pay through which families may affect performance. Accordingly to *H3*, the direct and indirect effects of family presence on performance should have opposite signs. The sum of the direct and indirect effects (i.e., the total effect) should not be significantly different from zero. Specifically, the model specification is as follows,

$$\left\{ \begin{array}{l}
 \text{Performance} = \beta_1 * \text{Incentive Pay} + \beta_2 * D(\text{Passive Family Firm}) + \beta_3 * D(\text{Active Family} \\
 \text{Firm}) + \sum \beta_i (\text{Firm-Specific Control Variables}) \\
 \text{Incentive Pay} = \gamma_1 * D(\text{Passive Family Firm}) + \gamma_2 * D(\text{Active Family Firm}) + \gamma_3 * \text{CEO Age} + \sum \gamma_j (\text{Firm-Specific} \\
 \text{and Corporate Governance Control Variables})
 \end{array} \right.$$

The direct effect of family presence on performance is β_2 (passive) and β_3 (active), and the indirect effect of family presence on performance is $\beta_1 * \gamma_1$ (passive) and $\beta_1 * \gamma_2$ (active). Therefore, the total effects are $\beta_2 + \beta_1 * \gamma_1$ and $\beta_3 + \beta_1 * \gamma_2$ for passive and active family firms, respectively.

Results

Descriptive Statistics

Table 1 presents summary statistics for selected CEO- and firm-specific attributes for the whole sample.

Table 2 presents between-sample comparisons of these attributes.

[Please insert Tables 1 and 2 here]

Generally, CEOs in active family firms have the lowest median cash-based and total compensation. The CEO option *delta* (including stock holdings) is highest in active family firms while on average option *delta* (without stock holding) is lowest in passive family firms. In addition to the compensation components, we find that CEOs in active family firms are older and have much larger equity stakes.

With regard to firm-specific characteristics, there is, as a whole, no significant difference among the three firm types in terms of firm size, investment level, and operating performance. Compared with non-family firms, family firms (active and passive) have higher Q and issue less debt. Passive family firms pay higher dividends. Firms managed by founding families tend to be young and face higher firm risk. In addition, such firms are less entrenched than other firms, with fewer anti-takeover provisions and smaller boards of directors, which are generally viewed as more effective (Yermack 1996). However, their boards are less independent, and their CEOs are more likely to serve as chairman and sit on compensation committees. Note that it is least likely that an outside CEO serves as chairman when there is family control within the firm which tends to have largest board size. These results are consistent with Bartholomeusz and Tanewski (2006) and family firms adopt corporate governance structures that differ substantially from those of non-family firms.

Primary Findings

Table 3 presents standardized coefficients, estimated by a Tobit regression, for the determinants of CEO incentive pay.

[Please insert Table 3 here]

Models (1)-(7) use option-based incentive pay (option *delta* only) as the dependent variable. The reasons we adopt option-based incentive pay, rather than equity-based incentive pay (sum of stock *delta* and option *delta*), as our main measure of incentive pay are as follows⁵. First, we expect founding family CEOs to have the highest equity-based incentive pay because of the high degree of family ownership of such firms. This positive relationship may arise for control purposes more than incentive purposes. Moreover, downside risk entails greater misalignment of managerial incentives when executives receive options rather than straight equity (Chidambaran and Prabhala 2003). Therefore, option grants appear to reflect incentive pay more effectively than straight equity. Another benefit of using option-based incentive pay is that it enables us to separate the effect of family influence from that of concentrated ownership. Model (1) is the baseline model, which does not take family influence and corporate governance into consideration. Models (2)-(4) include family influence and different measures of corporate governance. In addition to pooled regressions, we conduct subsample regressions in Models (5) and (6), based on CEO (family) ownership, to examine whether concentrated ownership has varying effects on the determinants of CEO incentive pay. Finally, Model (7) includes the square of ownership as an additional explanatory variable to test whether ownership effects are nonlinear.

At first glance, the explanatory power of the main models appears to be much greater than that of the

⁵ As a robustness check, we use equity-based incentive pay as one alternative measure of incentive pay.

baseline model, suggesting that family influence and corporate governance help explain CEO incentive pay. In general, portfolio price sensitivity is positively related to changes in shareholder wealth (although the relation is not statistically significant). This positive relationship, however, weakens once family involvement and/or corporate governance are taken into account. Moreover, when key control variables are accounted for, conditional on past performance, CEOs have similar incentive pay, regardless of family involvement. As shown in Model (1), ownership itself, independently of family involvement and corporate governance, is negatively correlated with incentive pay. This supports the notion that ownership creates incentives and thus reduces the need for incentive pay. Controlling for ownership and unconditional on past performance, option-based incentive pay is significantly lower for family firms than for non-family firms, with similar estimates (lower levels) for active and passive family firms. This finding supports *H1*. Meanwhile, managerial ownership itself is no longer related to incentive pay. Additionally, CEO age is negatively associated with incentive pay.

With respect to firm-specific control variables, our results show that larger firms with higher investment levels tend to have higher incentive pay, which is also observed in young firms with less debt. With regard to the relationship between corporate governance and incentive pay, our findings are mixed. On the one hand, the estimated coefficients for the GIM and Entrenchment indexes are positive for incentive pay. In other words, weaker minority shareholder protection is associated with higher incentive pay, which suggests that these two governance mechanisms are substitutes. On the other hand, smaller boards with greater independence (except in cases of CEO duality) - a mode of corporate governance typically viewed as superior - are likely to implement higher incentive pay, which suggests that these mechanisms are complements. Hence, our results indicate that

corporate governance is a complex system in which the underlying mechanisms cannot be simply described as substitutes or complements. In summary, when option portfolio price sensitivity is viewed as an incentive-alignment mechanism, our results suggest that both active and passive family firms have lower agency costs than non-family firms. This supports the notion that the classic ownership-manager conflict (Agency Problem I) in non-family firms is more costly than the conflict between family and non-family shareholders (Agency Problem II) in founder-CEO firms, a finding that is consistent with Villalonga and Amit (2006).

Although we find no linear relationship between managerial ownership and incentive pay when family presence is taken into account, the relationship could be non-linear. To examine this possibility, we form two subgroups based on different levels of ownership (low versus high, with median ownership over the whole sample providing the cutoff point) and conduct similar analyses. Interestingly, in Models (5) and (6), we find that the relationship between managerial ownership and option-based incentive pay is not symmetric. Ownership increases incentive pay in the low ownership subgroup, whereas it decreases incentive pay in the high ownership subgroup. This also shows that the negative overall relationship between ownership and incentive pay in Model (1) is driven by the high ownership subgroup. In Model (7), we find a concave relationship between managerial ownership and option-based incentive pay, as the estimate of ownership is positive, and the estimate of its square is negative.

To further investigate whether ownership creates value-enhancing incentives that reduce the need for value-enhancing pay incentives, we divide our sample into six subgroups based on varying degrees of family involvement and (managerial/family) ownership and conduct similar analyses for each of these groups. Table 4

provides standardized coefficient estimates for the Tobit regression of incentive pay in active family, passive family, and non-family firms, contingent on CEO ownership.

[Please insert Table 4 here]

We focus here on the CEO equity-based ownership variable. In general, the results for family firms are similar to those for Models (5) and (6) in Table 3. In terms of absolute value, a CEO with high ownership tends to have high incentive pay, regardless of family presence⁶. However, for family firms, the incremental effect of ownership on incentive pay is negative when the CEO has high ownership and positive otherwise, as shown in Models (1)-(4). This asymmetric or nonlinear pattern appears to be more pronounced in passive family firms than in active family firms, perhaps reflecting effective monitoring by board members who are members of founding families. In Models (5) and (6), we do not observe this pattern in non-family firms, where the relationship between ownership and incentive pay appears to be unaffected by managerial ownership. In sum, our results suggest that high equity ownership by CEOs provides value-enhancing incentives. Equity ownership by CEOs thus appears to alleviate concerns about misaligned incentives or agency issues, resulting in lower incentive pay, especially in family firms and to a lesser degree in non-family firms. This finding supports *H2*.

CEO Incentive Pay and Performance

In this section, we examine how incentive pay in family firms affects performance or firm valuation while controlling for important determinants of both incentive pay and firm valuation. Following the structural equation model discussed above (Figure 1), Table 5 reports coefficient estimates representing the direct, indirect,

⁶ In both the high and low ownership groups, the level of incentive pay is lower among passive family firms than among both active family and non-family firms. These results are not tabulated but are available upon request.

and total effects of our variables of interest on firm performance.

[Please insert Table 5 here]

Overall, incentive pay enhances firm performance. Therefore, value-enhancing incentive pay itself is effective *ex-post*. Interestingly, the indirect effect of family involvement via incentive pay is negative, offsetting the positive direct effect of family involvement on firm valuation. In other words, lower incentive pay set by families mediates the direct relationship between family involvement and firm performance compared with non-family firms. With regard to control variables, we find that managerial ownership does not affect performance. In addition, we find that firm size is positively associated with ROA but negatively associated with Q. Firm age, firm risk, and leverage are negatively related to firm performance. Corporate investment enhances Q, while higher dividend payout is associated with better firm performance⁷. Moreover, the total effect of family involvement on either ROA or Q is not significantly different from zero, suggesting that family presence is neither value enhancing nor detrimental to corporate performance. This finding also indicates that family firms have market valuations similar to those of non-family firms, after accounting for the mediating effect of incentive pay and controlling for key factors that drive firm valuation. Altogether, these results support *H3*.

Sensitivity Analyses

In this section, we conduct robustness checks of the incentive pay analysis (*H1* testing) and the performance analysis (*H3* testing) by applying alternative estimation models.

⁷ Our two-stage-least-squares regression estimates for these control variables are similar to the SEM estimates, which are available upon request.

First, one concern regarding the relationship between family presence and incentive pay is possible reverse causality. For example, family members might only be appointed to CEO positions in firms with particular pay packages, in which case, causality would run from incentive pay to family control. To address this endogeneity concern, we follow the two-stage strategy employed by Pindado, Requejo, and de la Torre (2012) in the context of dividend policy. Specifically, we run first-stage logit regressions of our sample for each year from 2001 to 2005 to estimate the probability that a firm is family-controlled. Consistent with Pindado et al. (2012), we use ownership, dual share class, firm size, firm risk, and Q as explanatory variables. We then estimate the empirical specifications in the incentive pay models (Models (2)-(7) in Table 3) by using the fitted family dummies⁸ in the Tobit regressions. Similarly to Table 3, Panel A in Table 6 provides standardized coefficients for the determinants of CEO incentive pay, estimated by a Tobit regression. We do not report estimates of the firm-specific control variables for simplicity.

Overall, our main results hold under this alternative estimation method. When we control for reverse causality, the explanatory power of the main models (Models (1)-(3)) is slightly higher than Models (2)-(4) in Table 3. The estimates of the two family dummy variables, our main variables of interest, have similar values and the same signs as the estimates presented in Table 3. The non-linear or concave relationship between managerial ownership and incentive pay also remains.

Second, we use a dynamic panel generalized method of moments (i.e., system GMM) to replicate the performance analysis in the previous section. Specifically, we follow Wintoki, Linck, and Netter (2012) in using

⁸ Two separate logit regressions and one multinomial logit regression all yield the same fitted values.

a dynamic GMM estimator to alleviate endogeneity concerns, which are rampant in corporate governance research, i.e., unobserved heterogeneity and simultaneity. The system GMM model potentially helps us estimate the governance-performance relationship while simultaneously controlling for past performance and fixed-effects. Including past performance in the data generating process accounts for the dynamic aspects involved. At the same time, the fixed-effects capture time-invariant unobservable heterogeneity that may characterize such a relationship. Panel B in Table 6 reports the GMM coefficient estimates for our variables of interest, the results of the specification tests, and the results of a test of the exogeneity of a subset of our instruments⁹. We do not report estimates of the firm-specific control variables for simplicity.

The system GMM estimates suggest that incentive pay increases Q but not ROA. Thus, incentive pay effectively enhances market valuation but not accounting or realized performance after some endogeneity issues in the model have been addressed. The differences in performance between family and non-family firms are not statistically significant, a finding that is consistent with our main results for the previous structural models. Overall, family firms and non-family firms exhibit similar performance after controlling for important determinants such as past performance and fixed-effects. We cannot reject the hypothesis that our instruments are valid because the p-value for the Hansen test of over-identification is above the 10% threshold in all four model specifications.

[Please insert Table 6 here]

As a final part of the sensitivity analyses, we use equity-based incentive pay as an alternative measure of

⁹ We use `xtabond2` in Stata to generate the system GMM estimators and the test results.

incentive pay to test the robustness of our findings. Basically, our results are qualitatively the same (not tabulated and available upon request). One main difference is that, unconditional on past performance, equity-based incentive pay is highest among active family firms and lowest among passive family firms. This is not surprising, as family CEOs own substantial equity stakes in family-controlled firms, likely for the control purposes as noted before. In addition, CEO age is positively associated with equity-based incentive pay. Lastly, the indirect effect of active family firms via incentive pay is positive, although the total effect on performance or firm valuation is not significantly different from zero.

Discussion and Implications

In this paper, we have revisited agency theory and examined the relationship between founding families and agency costs via the design of CEO compensation. Rather than the absolute level of CEO compensation, we have focused primarily on the option *delta* because it more accurately captures the degree of incentive alignment between managers and shareholders. Although family control is one means of solving the conflict of interest between ownership and control, it creates another agency problem through the private benefits of control or the potential expropriation of minority shareholders. CEO compensation is one potential remedy for the dual agency problems. We posit that family firms (run either by the families or outside CEOs) are less prone to these problems than firms without family control or involvement. This conjecture predicts lower CEO incentive pay in family firms than in non-family firms.

We find that, when stock holdings are excluded, both active and passive family firms have lower incentive pay than non-family firms, even after controlling for the effects of important CEO- and firm-specific factors.

This suggests that, consistent with our conjecture, firms under family control are less subject than other firms to dual agency problems, a fact that manifests itself in lower incentive pay among family-controlled firms. Also consistent with our conjecture, we do not observe significant differences in incentive pay between active and passive family firms. Thus, both types of family firms evidently have comparable agency costs, in spite of different sources of agency costs. In addition, we find a non-linear (specifically, a concave) relationship between managerial ownership and incentive pay.

Moreover, without considering family presence or involvement, executive ownership is negatively related to incentive pay because ownership itself creates incentives and thus reduces the need for incentive-alignment mechanisms. Once family involvement is taken into account, however, ownership no longer matters. This suggests that family control consists of more than concentrated ownership. Nonetheless, this non-result is due to the offsetting forces from different ownership subgroups. More specifically, executive ownership has different incremental effects on incentive pay, depending on the ownership stakes of CEOs—negative for high ownership CEOs and positive for their low ownership CEOs, especially in family firms. Therefore, executive ownership weakens the need for incentive alignment only when ownership reaches a certain threshold. Taken together, our findings suggest that, given family control, managerial ownership reduces the need for incentive pay only when the CEO already has a sufficient equity stake. Furthermore, this non-linear relationship generally holds irrespective of the degree of family involvement but with different intensities depending on firm type. Specifically, the relationship appears to be more pronounced for (passive) family firms than for non-family firms, findings that are consistent with the predictions of the dual agency cost hypothesis.

Other things equal, higher agency costs should result in lower firm performance or valuation. Using a simultaneous equation framework, we find that incentive pay is value-enhancing. In addition, there appears to be no significant relationship between degree of family involvement and operating performance (ROA) and market valuation (Q) after controlling for important factors that potentially explain both performance measures. This is because the direct and indirect effects (through incentive pay) on both measures have opposing signs that cancel each other out, a finding that accords with our hypothesis that incentive pay should provide a remedy for agency issues. On the one hand, non-family firms may experience higher agency costs than family firms because the classic ownership-manager conflict in non-family firms is more costly than the conflict between family and non-family shareholders in active family firms. On the other hand, passive family firms might have lower agency costs as a result of effective family monitoring. Our findings are in line with the extant literature on performance of family firms (e.g., Anderson and Reeb, 2003; Barontini and Caprio, 2006; Maury, 2006; Villalonga and Amit, 2006).

In summary, we find that family firms and non-family firms have different corporate governance structures. Specifically, we find that active family firms have better protection for minority shareholders and smaller boards but less board independence. These results indicate that corporate governance is a complex system in which the mechanisms involved are neither simple substitutes nor complements. In addition, incentive pay in family-controlled firms is lower than in non-family-controlled firms because the former are less subject to dual agency problems and thus have lower agency costs. Higher equity ownership reduces the need for value-enhancing incentive pay because ownership itself provides incentives that reduce the need for incentive

alignment. Through pay incentives, family presence has a mediating effect on the relationship between family control and performance. Higher incentive pay, adopted by non-family firms due to higher agency costs, effectively enhances performance, resulting in performance levels similar to those of family firms. Overall, our study shows that the incentive pay of family firms differs from that of non-family firms, reflecting different agency costs that correspond to varying degrees of family involvement and different sources of agency costs. We do not observe differences in performance between family and non-family firms once we account for differences in incentive pay adopted by these firms.

Conclusion

To conclude, family firms are a prevalent and ubiquitous organizational form in the financial landscape. Owing to differing considerations and preferences of families, decision making processes within firms can differ, leading to differences in firm value. Our study provides evidence that family firms experience different kinds of agency cost, which are manifested in different CEO incentive compensation policies. The paper also demonstrates the importance of CEO family affiliation, in addition to family ownership, in classifying family firms. We find that firms with differing degrees of family involvement implement differing executive equity-based compensation policies. With respect to option-based incentive pay, active and passive family firms alike differ from non-family firms. Nevertheless, similar levels of such pay observed in both types of family firm suggests that the two different types of firm experience different magnitudes and/or types of agency costs. As a result, research based on the standard family firm classification, which considers only family ownership, may lead to spurious relationships and implications.

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Table 1
Summary Statistics: CEO and Firm Characteristics

	Mean	Median	Std. Dev.	Min	P25	P75	Max
Panel A: CEO Characteristics							
Cash Compensation (\$M)	870.04	680.55	920.19	0.00	469.25	1,015.12	21,119.34
Total Compensation (\$M)	2,232.51	1,449.36	6,358.65	0.00	836.79	2,462.38	245,016.90
Equity-based Incentive Pay (\$M)	299.19	132.14	582.82	0.00	58.14	298.85	8,277.63
Option-based Incentive Pay (\$M)	102.34	59.22	185.87	0.00	22.80	124.63	4,319.91
CEO Age	55.48	55.00	7.71	29.00	50.00	61.00	84.00
CEO Equity-based Ownership (%)	8.23	2.50	14.47	0.00	1.26	7.38	81.20
CEO Stock Ownership (%)	3.50	0.68	7.59	0.00	0.19	2.50	62.76
Panel B: Firm Characteristics							
Firm Size (\$MM)	805.40	503.41	1,004.71	0.00	249.22	905.70	10,973.32
Firm Age	47.35	36.00	35.01	0.00	21.00	60.00	230.00
Firm Risk	0.55	0.51	0.21	0.18	0.39	0.67	1.53
Leverage	0.18	0.16	0.17	0.00	0.01	0.31	1.62
Investment	0.08	0.06	0.08	0.00	0.03	0.12	0.82
Dividend Payout	0.01	0.00	0.02	0.00	0.00	0.01	0.45
ROA	0.08	0.08	0.12	-1.65	0.04	0.13	0.66
Tobin's Q	1.78	1.45	1.08	0.39	1.14	2.05	11.13
GIM Index	8.76	9.00	2.63	2.00	7.00	10.00	17.00
Entrenchment Index	2.20	2.00	1.29	0.00	1.00	3.00	5.00
Board Size	7.89	8.00	1.94	1.00	6.00	9.00	15.00
Inside Director	0.22	0.20	0.12	0.00	0.13	0.29	1.00
CEO Duality (0/1)	0.54	1.00	0.50	0.00	0.00	1.00	1.00
CEO on Compensation Committee (0/1)	0.01	0.00	0.11	0.00	0.00	0.00	1.00

This table presents summary statistics for selected CEO and firm characteristics of small public firms between 2001 and 2005. Raw scores are reported, and all variables are defined in Appendix A.

Table 2
Comparisons of Selected Characteristics among Firm Types

Variable	Active Family Firm (I)		Passive Family Firm (II)		Non Family Firm (III)		Mean and Median Tests		
	Mean	Median	Mean	Median	Mean	Median	I – II	II – III	I – III
Panel A: CEO Characteristics									
Cash Compensation (\$M)	898	611	842	694	865	700	0.7698 [0.4416] (0.0031)	-0.5615 [0.5745] (0.2488)	0.6099 [0.542] (0)
Total Compensation (\$M)	1,937	1,332	1,942	1,419	2,572	1,610	-0.0284 [0.9774] (0.0018)	-1.4069 [0.1597] (0.0176)	-1.6038 [0.109] (0)
Equity-based Incentive Pay (\$M)	611	311	144	99	165	92	9.8953 *** [0] (0)	-1.6502 * [0.0992] (0.1994)	13.2298 *** [0] (0)
Option-based Incentive Pay (\$M)	113	50	81	57	106	64	2.1616 ** [0.0309] (0.2032)	-3.566 *** [0.0004] (0.0037)	0.6347 [0.5257] (0)
CEO Age	57	58	54	54	55	55	4.3313 *** [0] (0)	-1.3823 [0.1671] (0.0945)	4.342 *** [0] (0)
CEO Equity-based Ownership (%)	20.09	12.27	2.57	1.50	3.04	1.80	17.0808 *** [0] (0)	-1.2793 [0.201] (0.0001)	23.0923 *** [0] (0)
CEO Stock Ownership (%)	9.01	4.61	1.13	0.33	0.96	0.39	13.4701 *** [0] (0)	1.0688 [0.2854] (0.113)	20.0021 *** [0] (0)
Panel B: Firm Characteristics									
Firm Size (\$MM)	838	418	806	533	783	547	0.4195 [0.6749] (0.0027)	0.4736 [0.6359] (0.963)	0.9634 [0.3355] (0.0003)
Firm Age	38	30	48	38	53	44	-4.8505 *** [0] (0.0001)	-2.454 ** [0.0143] (0.0157)	-8.0974 *** [0] (0)
Firm Risk	0.587	0.570	0.527	0.478	0.528	0.483	4.4056 *** [0] (0)	-0.1132 [0.9099] (0.8458)	5.0507 *** [0] (0)

Leverage	0.167	0.117	0.163	0.134	0.196	0.188	0.3674 [0.7134] (0.8537)	-3.1894 *** [0.0015] (0.0012)	-3.0008 *** [0.0027] (0.0002)
Investment	0.084	0.068	0.090	0.060	0.083	0.061	-1.0476 [0.2951] (0.6628)	1.5589 [0.1193] (0.6828)	0.3373 [0.736] (0.8777)
Dividend Payout	0.006	0.000	0.010	0.002	0.006	0.000	-3.1419 *** [0.0017] (0)	2.6443 *** [0.0083] (0)	-0.4561 [0.6484] (0.1565)
ROA	0.081	0.086	0.077	0.083	0.079	0.083	0.4842 [0.6283] (0.9407)	-0.3097 [0.7569] (0.4473)	0.2744 [0.7838] (0.4808)
Tobin's Q	1.826	1.540	1.891	1.475	1.700	1.403	-0.8659 [0.3868] (0.8369)	2.8842 *** [0.004] (0.0046)	2.227 ** [0.0261] (0.005)
GIM Index	7.99	8.00	8.94	9.00	9.17	9.00	-4.8697 *** [0] (0)	-1.1729 [0.2412] (0.3927)	-6.8996 *** [0] (0)
Entrenchment Index	1.73	2.00	2.17	2.00	2.53	3.00	-4.2792 *** [0] (0)	-4.0744 *** [0.0001] (0.0003)	-9.9148 *** [0] (0)
Board Size	7.56	7.00	8.38	8.00	7.87	8.00	-5.3589 *** [0] (0)	4.0696 *** [0.0001] (0.0008)	-2.5663 ** [0.0104] (0.0006)
Inside Director	0.27	0.25	0.22	0.20	0.19	0.17	5.1317 *** [0] (0)	3.5876 *** [0.0004] (0.0004)	9.8187 *** [0] (0)
CEO Duality (0/1)	0.68	1.00	0.36	0.00	0.53	1.00	9.1772 *** [0] (0)	-4.7587 *** [0] (0)	5.1887 *** [0] (0)
CEO on Compensation Committee (0/1)	0.03	0.00	0.01	0.00	0.00	0.00	2.3089 ** [0.0212] (0.0213)	0.2831 [0.7772] (0.777)	3.2988 *** [0.001] (0.001)

This table presents means and medians of selected characteristics of subgroups of small public firms between 2001 and 2005. Raw scores are reported, and all variables are defined in Appendix A. P-values of the mean (median) tests are reported in brackets (parentheses). The statistical significance at the 0.1, 0.05, and 0.01 levels of t-values of the mean tests are represented by symbols *, **, and ***, respectively.

Table 3
Family Firm and CEO Incentive Pay

	Option-based Incentive Pay						
	Baseline (1)	(2)	Main (3)	(4)	(5): Low	Ownership (6): High	(7): Pooled
△(Shareholder Wealth)	0.072 (1.07)	0.025 (0.27)	0.028 (0.31)	0.033 (0.37)	0.051 (0.41)	0.067 (1.48)	0.037 (0.4)
△(Shareholder Wealth)* Passive Family Firm		0.034 (1.32)	0.032 (1.18)	0.055* (1.68)	0.07 (1.47)	0.029 (1.42)	0.055 (1.54)
△(Shareholder Wealth)* Active Family Firm		0.055 (1.28)	0.049 (1.1)	0.064** (2.06)	0.029 (1.1)	0.046 (1.23)	0.057 (1.59)
Passive Family Firm		-0.189*** (-8.21)	-0.167*** (-8.25)	-0.122*** (-4.35)	-0.162*** (-3.49)	-0.063** (-2.6)	-0.1*** (-3.69)
Active Family Firm		-0.199** (-2.31)	-0.18* (-1.76)	-0.167* (-1.96)	-0.088* (-1.9)	-0.116 (-1.14)	-0.186** (-2.08)
CEO Age	-0.092** (-2.19)	-0.068* (-1.79)	-0.064** (-1.97)	-0.076** (-2.23)	-0.096*** (-2.89)	-0.087* (-1.71)	-0.074** (-2.4)
CEO Equity-based Ownership	-0.111** (-2.26)	0.023 (0.36)	0.048 (0.75)	0.009 (0.15)	0.315*** (9.53)	-0.195** (-2.03)	1.002*** (13.57)
CEO Equity-based Ownership^2							-1.012*** (-7.14)
Firm Size	0.151*** (4.53)	0.24*** (6.4)	0.221*** (5.83)	0.213*** (7.8)	0.338*** (20.9)	0.132** (2.25)	0.219*** (6.47)
Firm Age	-0.126* (-1.73)	-0.181*** (-3.21)	-0.175*** (-3.27)	-0.178*** (-2.61)	-0.224*** (-4.97)	-0.1 (-1.2)	-0.148** (-2.49)
Leverage	0.013 (0.48)	0.000 (0.01)	-0.004 (-0.14)	-0.011 (-0.32)	-0.072 (-1.39)	0.012 (0.21)	-0.025 (-0.91)
Investment	0.129*** (3.8)	0.2*** (14.12)	0.192*** (22.56)	0.158*** (5.26)	0.137*** (5.24)	0.153*** (4.85)	0.145*** (5.16)
GIM Index		0.046* (1.73)					
Entrenchment Index			0.163*** (4.22)				
Board Size				-0.065*** (-2.98)	-0.092** (-2.41)	-0.027 (-1.16)	-0.058*** (-3.12)
Inside Director				-0.167*** (-4.1)	-0.078 (-1.3)	-0.178*** (-4.53)	-0.129*** (-3.45)
CEO Duality				0.106*** (4)	0.049 (1.52)	0.062* (1.8)	0.069*** (3.15)
CEO on Compensation Committee				-0.034* (-1.96)	0.007 (0.52)	-0.047** (-2)	-0.032** (-2.04)
Year and Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0355	0.0542	0.0612	0.0614	0.1118	0.0789	0.0838
Number of Observations	1,742	1,216	1,216	1,356	701	655	1,356

This table provides the standardized coefficient estimates for the Tobit regression of CEO incentive pay against the change in shareholder wealth while controlling for some executive- and firm-specific attributes. All control variables, except for the dummy variables, are winsorized at the 1% and 99% levels, respectively, and are defined in the Appendix A. Low (Model 5) versus high (Model 6) refer to two separate regressions for the subsamples formed by using the median ownership over the whole sample as the cutoff point. Industry fixed effects adopt 1-digit SIC code. Standard deviations are clustered at the 1-digit SIC level. T-values are reported in parentheses, and the symbols *, **, and *** represent statistical significance at the 0.1, 0.05, and 0.01 levels, respectively.

Table 4
Family Firm, CEO Ownership, and Incentive Pay

	Option-based Incentive Pay					
	Active Family Firm		Passive Family Firm		Non Family Firm	
	(1): Low	(2): High	(3): Low	(4): High	(5): Low	(6): High
Δ (Shareholder Wealth)	0.256*** (6.87)	0.117*** (3.49)	0.137*** (7.47)	0.232*** (2.99)	0.076 (0.49)	0.036 (1.33)
CEO Equity-based Ownership	0.288*** (5.18)	-0.224*** (-3.83)	0.368*** (6.21)	-0.345** (-2.03)	0.284*** (6.88)	0.224*** (5.42)
CEO Age	0.129 (1.44)	-0.087* (-1.65)	-0.137 (-1.48)	-0.252*** (-5.05)	-0.006 (-0.19)	-0.013 (-0.13)
Firm Size	0.296* (1.79)	0.14*** (3.51)	0.255*** (5.12)	-0.227** (-2.35)	0.396*** (7.33)	0.354*** (2.7)
Firm Age	-0.289** (-2.43)	-0.13*** (-2.94)	-0.295*** (-3.38)	0.087 (0.82)	-0.191** (-2.56)	0.108 (0.52)
Leverage	-0.199* (-1.89)	0.008 (0.17)	0.006 (0.07)	0.193** (2.3)	-0.123** (-2.18)	-0.374*** (-6.85)
Investment	0.033 (0.24)	0.224*** (6.97)	0.17 (1.41)	-0.04 (-0.4)	0.111** (2.4)	0.158 (0.84)
Board Size	-0.26** (-2.07)	-0.036 (-0.72)	0.046 (0.75)	-0.012 (-0.1)	-0.174*** (-3.16)	0.026 (0.37)
Inside Director	-0.754*** (-4.52)	-0.207*** (-4.18)	-0.049 (-0.55)	-0.271*** (-5.42)	-0.043 (-0.88)	0.033 (0.36)
CEO Duality	0.013 (0.13)	0.018 (0.43)	0.077 (1.6)	0.123 (0.68)	0.035 (0.48)	0.039 (0.68)
CEO on Compensation Committee	-0.039 (-1.33)	-0.051** (-2.11)	0.089** (1.98)		-0.053*** (-6.23)	0.029*** (3.94)
Year and Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.5436	0.0993	0.1356	0.1956	0.1216	0.0844
Number of Observations	38	392	249	66	414	197

This table provides the standardized coefficient estimates for the Tobit regression of CEO incentive pay against the change in shareholder wealth while controlling for some executive- and firm-specific attributes. All control variables, except for the dummy variables, are winsorized at the 1% and 99% levels, respectively, and are defined in the Appendix A. Low (Models 1, 3, 5) versus high (Models 2, 4, 6) refer to six separate regressions for the subsamples formed by using the median ownership over the whole sample as the cutoff point. Industry fixed effects adopt 1-digit SIC code. Standard deviations are clustered at the 1-digit SIC level. T-values are reported in parentheses, and the symbols *, **, and *** represent statistical significance at the 0.1, 0.05, and 0.01 levels, respectively.

Figure 1
Simple Illustration of Structural Equation Model

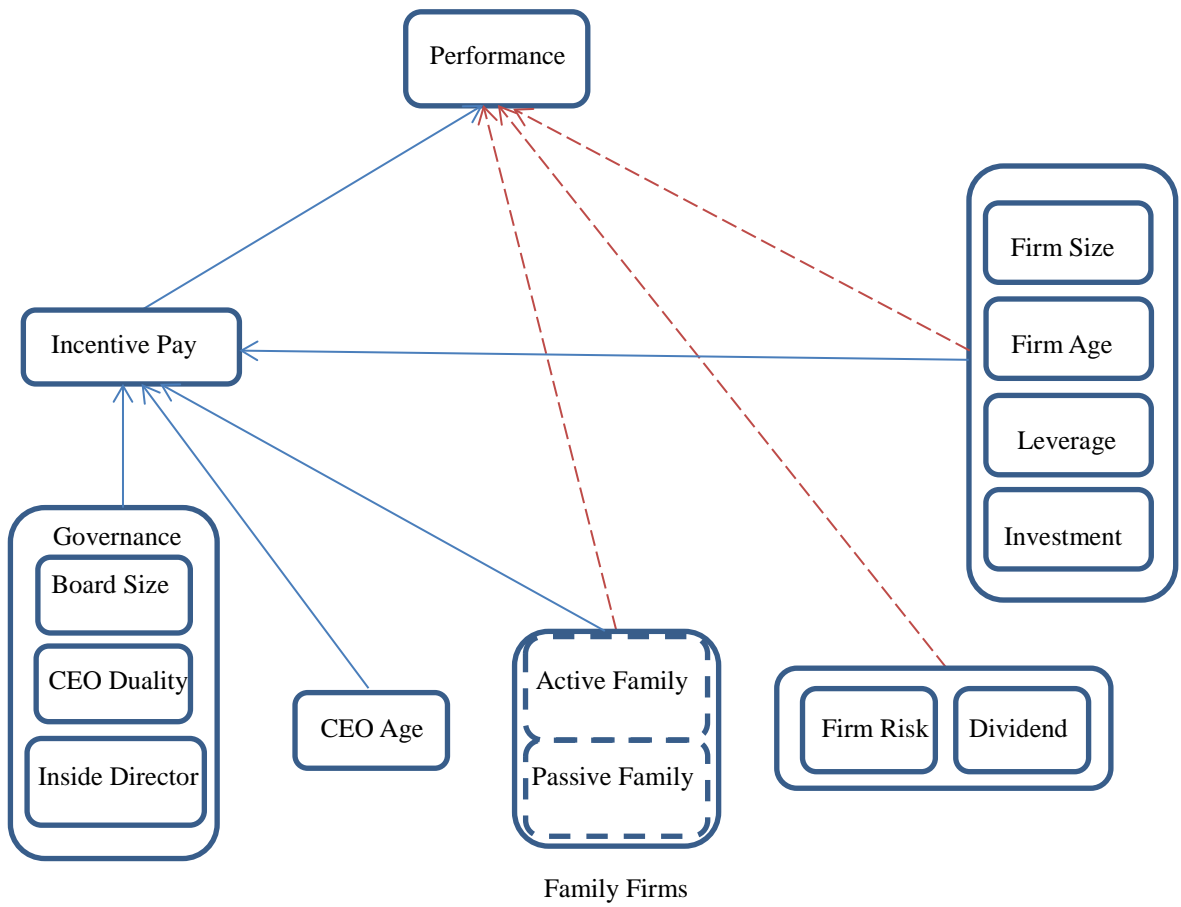


Table 5
Family Firm, CEO Incentive Pay, and Performance

	(1): ROA			(2): Tobin's Q		
	Direct Effect	Indirect Effect	Total Effect	Direct Effect	Indirect Effect	Total Effect
Option-based Incentive Pay	0.007*** (5.26)		0.007*** (5.26)	0.14*** (6.84)		0.14*** (6.84)
Passive Family Firm	0.000 (0.04)	-0.002** (-2.07)	-0.001 (-0.18)	0.128** (2.57)	-0.035** (-2.3)	0.092 (1.53)
Active Family Firm	0.008 (0.65)	-0.003* (-1.9)	0.005 (0.35)	0.116*** (3.05)	-0.065** (-2.09)	0.05 (0.78)
CEO Age		-0.008*** (-2.99)	-0.008*** (-2.99)		-0.17*** (-3.4)	-0.17*** (-3.4)
CEO Equity-based Ownership		0.000 (0.36)	0.000 (0.36)		0.004 (0.36)	0.004 (0.36)
Firm Size	0.017*** (3.55)	0.002*** (3.52)	0.019*** (4.02)	-0.177*** (-2.65)	0.046*** (3.9)	-0.131* (-1.95)
Firm Age	-0.023*** (-3.21)	-0.003** (-2.14)	-0.026*** (-3.14)	-0.214*** (-3.33)	-0.052** (-2.24)	-0.266*** (-3.18)
Firm Risk	-0.158*** (-6.8)		-0.158*** (-6.8)	-0.552 (-1.5)		-0.552 (-1.5)
Leverage	-0.086*** (-2.64)	-0.003* (-1.65)	-0.089*** (-2.89)	-1.117*** (-4)	-0.063 (-1.6)	-1.18*** (-4.46)
Investment	-0.025 (-0.3)	0.013 (1.48)	-0.011 (-0.15)	3.037*** (4.79)	0.272 (1.53)	3.309*** (4.66)
Dividend Payout	0.511** (2.38)		0.511** (2.38)	7.06*** (2.96)		7.06*** (2.96)
Board Size		-0.000* (-1.69)	-0.000* (-1.69)		-0.005 (-1.64)	-0.005 (-1.64)
Inside Director		-0.017*** (-5.05)	-0.017*** (-5.05)		-0.35*** (-5.26)	-0.35*** (-5.26)
CEO Duality		0.003*** (3.25)	0.003*** (3.25)		0.051*** (3.26)	0.051*** (3.26)
Equation-level R2: Incentive Pay			0.127			0.126
Equation-level R2: Performance			0.216			0.282
Model R2			0.302			0.343
Number of observations			1,756			1,756

Structural equation model (SEM) estimates are reported. The total effect is the sum of the direct effect (related to performance) and the indirect effect (related to performance through incentive pay). All control variables, except for the dummy variables, are winsorized at the 1% and 99% levels, respectively, and are defined in the Appendix A. Z-values are reported in parentheses, and the symbols *, **, and *** represent statistical significance at the 0.1, 0.05, and 0.01 levels, respectively.

Table 6
Robustness Checks

Panel A: Family Firm and CEO Incentive Pay						
	Option-based Incentive Pay					
	(1)	Main (2)	(3)	Ownership		
				(4): Low	(5): High	(6): Pooled
△(Shareholder Wealth)	0.045	0.046	0.051	0.062	0.081*	0.057
	(0.46)	(0.48)	(0.55)	(0.48)	(1.67)	(0.57)
△(Shareholder Wealth)*	0.032	0.028	0.03	0.035	0.025	0.026
Passive Family Firm	(1.19)	(1.09)	(1.19)	(0.96)	(0.81)	(1.05)
△(Shareholder Wealth)*	0.063	0.06	0.065*	0.022	0.055	0.054
Active Family Firm	(1.29)	(1.17)	(1.66)	(0.96)	(1.06)	(1.2)
Passive Family Firm	-0.178***	-0.152***	-0.145***	-0.143***	-0.017	-0.09***
	(-6.39)	(-6.06)	(-5.43)	(-3.95)	(-0.57)	(-3.38)
Active Family Firm	-0.396***	-0.372***	-0.371***	-0.047	-0.218	-0.281**
	(-5.57)	(-4.23)	(-5.42)	(-1.26)	(-1.47)	(-2.59)
CEO Age	-0.078**	-0.076**	-0.077**	-0.089*	-0.088*	-0.077***
	(-2.12)	(-2.29)	(-2.6)	(-1.77)	(-1.86)	(-2.63)
CEO Equity-based	0.214***	0.231***	0.222***	0.293***	-0.084	0.955***
Ownership	(3.64)	(3.97)	(4.11)	(8.46)	(-0.52)	(6.52)
CEO Equity-based						-0.816***
Ownership^2						(-3.4)
Firm-specific Control Variables,						
Year and Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0608	0.0650	0.0644	0.1063	0.0716	0.0785
Number of Observations	1,194	1,194	1,227	658	569	1,227
Panel B: Family Firm, CEO Incentive Pay, and Performance						
	(1): ROA			(2): Tobin's Q		
Lagged Performance (t-1)	0.585***			0.178*		
	(4.59)			(1.88)		
Option-based Incentive Pay	-0.003			0.275*		
	(-0.22)			(1.94)		
Passive Family Firm	-0.033			-0.028		
	(-1.12)			(-0.07)		
Active Family Firm	-0.020			0.350		
	(-0.49)			(0.86)		
CEO Age	-0.225*			0.320		
	(-1.97)			(0.26)		
CEO Equity-based Ownership	-0.006			-0.519**		
	(-0.37)			(-2.59)		
Firm-specific Control Variables	Yes			Yes		
AR(1) test (p-value)	0.001			0.001		
AR(2) test (p-value)	0.613			0.696		

Hansen test (p-value)	0.332	0.289
Difference-in-Hansen test (p-value)	0.901	0.197
Number of Observations	1,101	1,101

Panel A provides the standardized coefficient estimates for the Tobit regression of CEO incentive pay against the change in shareholder wealth while controlling for some executive- and firm-specific attributes. The two family dummy variables are fitted values predicted by logit regressions with a set of explanatory variables. Low (Model 4) versus high (Model 5) refer to two separate regressions for the subsamples formed by using the median ownership over the whole sample as the cutoff point. Following Table 3, firm-specific control variables include firm size, firm age, leverage, investment, GIM Index, Entrenchment Index, board size, inside director, CEO duality, and CEO on compensation committee. Industry fixed effects adopt 1-digit SIC code. Standard deviations are clustered at the 1-digit SIC level. Panel B reports GMM estimates. Following Table 5, firm-specific control variables include firm size, firm age, firm risk, leverage, investment, dividend payout, board size, inside director, and CEO duality. All control variables, except for the dummy variables, are winsorized at the 1% and 99% levels, respectively, and are defined in the Appendix A. T-values are reported in parentheses, and the symbols *, **, and *** represent statistical significance at the 0.1, 0.05, and 0.01 levels, respectively.

Appendix A

Variable Labels and Definitions

Variable	Definition	Data Source
<i>CEO Characteristics</i>		
Cash Compensation	Total current compensation comprised of salary and bonus	ExecuComp item <i>total_current</i>
Total Compensation	Total compensation (salary + bonus + other annual + restricted stock grants + LTIP payouts + all other + value of option grants)	ExecuComp item <i>tdc1</i>
Equity-based Incentive Pay	The change in the value of CEO's stock holding and option portfolio in response to a 1% change in the firm's stock price, scaled by natural logarithm	
Option-based Incentive Pay	The change in the value of CEO's option portfolio (only) in response to a 1% change in the firm's stock price, scaled by natural logarithm	
CEO Age	Age of CEO, scaled by natural logarithm	ExecuComp item <i>age</i>
CEO Equity-based Ownership	Percentage of CEO equity holding, including options and equity holding of family members, if applicable, scaled by natural logarithm	Proxy statements (DEF 14A)
CEO Stock Ownership	Percentage of CEO shareholding (excluding options and equity holding of family members)	ExecuComp item <i>shrown_excl_opts</i> scaled by Compustat item <i>shrsout</i>
<i>Firm Characteristics</i>		
Ownership Structure		
Active Family Firm	A dummy variable that is assigned to one if a firm is controlled and managed by the founding family member(s), and zero otherwise	Proxy statements (DEF 14A)
Passive Family Firm	A dummy variable that is assigned to one if a firm is controlled but not managed by the founding family member(s), and zero otherwise	Proxy statements (DEF 14A)
Non-family Firm	A dummy variable that is assigned to one if a firm is neither controlled nor managed by the founding family member(s), and zero otherwise	Proxy statements (DEF 14A)
Corporate Governance		
GIM Index	Follows Gompers, Ishii, and Metrick (2003)	RiskMetrics Governance Legacy item <i>gindex</i>
Entrenchment Index	Follows Bebchuk, Cohen, and Ferrell (2009)	RiskMetrics Governance Legacy items <i>cboard+supermajor+ppill+goldenparachute+lachtr+labylw</i>
Board Size	Number of directors on the board, scaled by natural logarithm	RiskMetrics Directors Legacy
Inside Director	The percentage of inside directors on the board	RiskMetrics Directors Legacy

CEO Duality	A binary variable that equals one when CEO serves as company chairman	RiskMetrics Directors Legacy
CEO on Compensation Committee	A dummy variable that is assigned to one if CEO serves on the compensation committee, and zero otherwise	RiskMetrics Directors Legacy
Others		
ROA	A ratio of earnings before interest and taxes scaled by total assets	Compustat items $ebit/at$
Tobin's Q	Market-to-book ratio, defined as total assets plus the market value of common stock less the sum of book value of common equity and balance sheet deferred taxes scaled by total assets	Compustat items $(at+csho*prcc_f-ceq-txdb)/at$
Firm Size	Annual sales, scaled by natural logarithm	Compustat item $sale$
Firm Age	Difference between the founding year and the data year, scaled by natural logarithm	Online sources (e.g., www.funduniverse.com)
Firm Risk	Standard deviation volatility over the past 60 months	Compustat item $bs_volatility$
Leverage	Year-end debt scaled by total assets	Compustat items $(dltt+dlc)/at$
Investment	Sum of capital and R&D expenditures scaled by total assets	Compustat items $(capx+xrd)/at$
Dividend Payout	Annual cash dividends scaled by total assets	Compustat item dv/at
Shareholder Wealth	Market value of equity	Compustat items $csho*prcc$
