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### Essays on top management and corporate behavior

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## Chapter 4

# Small Family Firm, Agency Costs, and CEO Performance Pay

*It has been discussed extensively in the literature regarding the relationship between family firm and performance. But there is little study exploring the mechanisms involved in corporate governance. This chapter aims to provide a potential link, the design or the structure of CEO compensation. More specifically, the question is, does family ownership help alleviate the traditional principal-agent problem in small corporations that have more pronounced family influences?*

### 4.1 Introduction

In modern corporations, there exists a common organization form noted for its separation of ownership and control, which gives rise to the typical principal-agent problem due to the conflict of interest between shareholders and managers. Concentrated ownership, together with unification of ownership and management, is able to overcome the free-rider problem and provide a remedy to this agency problem (Jensen and Meckling, 1976).

Demsetz and Lehn (1985) and Shleifer and Vishny (1986) have long argued that this Berle and Means (1932) type of firms with separated ownership and control is not a comprehensive form of publicly traded corporations, which is supported by various cross-country studies (e.g. La Porta et al., 1999; Morck et al., 2000; Claessens et al., 2000; Faccio and Lang, 2002). In the U.S., while public firms are generally regarded as owned by dispersed shareholders, family ownership in fact exists in more than one-third of S&P500 firms, and

families own 18 percent of shares on average (Anderson and Reeb, 2003; Villalonga and Amit, 2006).

A large amount of literature on family firms attempts to relate family firms to performance<sup>1</sup>, and little attention has been devoted to corporate governance structures<sup>2</sup>. Among others, an essential mechanism is the design of top executive (CEO) compensation. To the best of my knowledge, Gomez-Mejia et al. (2003) first investigate the determinants of executive compensation in the U.S. publicly traded family firms. They show that family CEOs receive lower total income than outside CEOs, in which the difference increases with family ownership. Cai et al. (2008) use a survey of managers in Chinese private family firms and find that family firms reward higher pay (both salary and bonus) with lower performance (bonus only) sensitivity to family managers than outside managers. Bandiera et al. (2010) use survey data of Italian service sector executives and find that, compared with non-family firms, family firms pay less to their managers whose pay is less sensitive to performance.

In this chapter, I aim to examine whether family influences help mitigate the agency problem, and in particular how CEO compensation structure is shaped in family firms. However, instead of using absolute pay level as in Gomez-Mejia et al. (2003), I focus on pay-performance sensitivity<sup>3</sup> because it captures incentives better. Moreover, I study small firms because, in addition to their economic significance<sup>4</sup>, family influences are more prominent and effective in small firms compared with their more established counterparts. Lastly, unlike the two-type categorization commonly adopted in the literature, I classify firms as three types. Type I is the active family-controlled firm: owned by family stake and run by family CEO. Type II is the passive family-controlled firm: owned by family stake and run by outside CEO. Type III is the non-family firm: without family stake and run by outside CEO.

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<sup>1</sup>See Pérez-González (2006) for a review in both theory and empirics.

<sup>2</sup>See Wallevik (2009) for a survey in corporate governance research on family firms.

<sup>3</sup>Unlike Bandiera et al. (2010) who use dummy variables and index to measure sensitivity of pay to performance, I measure it by calculating the performance pay elasticity directly.

<sup>4</sup>According to the 2009 OECD report, Small and median-sized enterprises (SMEs) account for more than 99% of all enterprises in the European Union, and more than half of labor force in the private sector in the OECD area.

My sample construction starts with companies in the S&P600 SmallCap Index between 2001 and 2005. After filtering out the non-surviving companies during this period, there are 168 companies left, with 840 firm-year observations. To identify family firms, I manually check the proxy statements and other sources. I form a dataset on identity, ownership, tenure, and biographies of founder(s), board members, blockholders, and the top 5 managers. I classify a firm as a family firm when one of the two criteria is met: 1. founder or descendant of the founder sits on the board and/or is a blockholder; 2. at least two board members are family-related, either by blood or marriage<sup>5</sup>. When matched with available firm accounting and CEO compensation data, I have 785 firm-year observations. Among them, 396 (50.45%) have family influences within the firm. This is consistent with the impression that family control is more common in small firms.

I study whether agency problem is less serious in small firms, and if so, whether the existence of family influences is able to further alleviate the problem by the design of CEO compensation. Following Ang et al. (2000), I calculate two measures that indirectly evaluate the agency costs, i.e. the asset utilization ratio and the expense ratio. The former measures how effective is the management in deploying its assets; the latter measures how effective is the management in controlling its operating expenses. I find that on average the asset utilization ratio is higher in active family firms, with higher volatility though. Moreover, family firms (both active and passive) have low expense ratios compared with their non-family counterparts. It thus suggests lower agency costs in family firms, despite great variations within the group.

To measure performance sensitivity, I focus on both absolute (elasticity) and incremental values (the first order difference) of CEO pay. I hypothesize that, since pay-performance is designed to incentivize managers, the pay-performance estimates should vary across firms with different degree of owner involvement. Namely, pay-performance (elasticity) should be higher for non-family firms, followed by those in passive family firms, while the active

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<sup>5</sup>Follow Gomez-Mejia et al. (2003), I consider father, mother, sister, brother, son, daughter, spouse, in-laws, aunt, uncle, niece, nephew, and cousin.

family firms would have the lowest values. My evidence supports this prediction. Note that this pattern is more pronounced in total compensation than in basic salary<sup>6</sup> component, indicating a lower use of performance pay such as stock options in family firms. For instance, in non-family firms, a 1% increase of firm value corresponds to an approximately 0.33% (0.16%) increase of total compensation (basic salary).

Ownership reduces CEO pay in general. Contingent on firm type, in terms of basic salary, ownership of outside CEO in non-family firms lowers while CEO ownership in family firms increases pay-performance elasticity. It thus implies that this conditional ownership provides a moderating effect for incentive purposes, which is not observed when it comes to total compensation. In summary, the findings suggest that family influences might reduce the need for alternative governance mechanisms to exercise control. Consequently, family ownership and performance pay seem substitutes as corporate governance mechanisms.

My study contributes to the literature on two fronts. First, I analyze how family ownership might influence the structure of CEO compensation. Furthermore, I refine the typical categorization of "family versus non-family" firms in terms of degree of involvement by family members. Indeed, the pay-performance estimates appears to differ, a result which could not be captured by the traditional family firm categorization.

The remainder of this chapter proceeds as follows: Section 2 gives a brief literature review on family firms that relates to performance, agency problems, and CEO compensation. Section 3 contains hypotheses to be tested. Section 4 describes the dataset and the sample formation used in the analyses. Section 5 shows the estimation methods and testing results. Section 6 summaries the findings and concludes. Section 7 displays the tables and figures.

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<sup>6</sup>In this chapter, for simplicity, the basic salary includes both the cash and the bonus component.

## 4.2 Literature Review

### 4.2.1 Family Firm and Performance

The majority of the literature on family firms analyses the relationship between family ownership and firm performance. Besides, it further draws the distinction between founder CEOs and descendant CEOs, to examine whether managers who inherit their positions perform differently. On the whole, it shows that heir-controlled firms underperform their counterparts, and mixed results for founder-led family firms in general.

### Theory

Family firms may be beneficial to performance for several reasons. First, family involvement provides higher nonmonetary rewards associated with firm's success that other CEOs do not share (Kandel and Lazear, 1992; Davis, Schoorman, and Donaldson, 1997). Secondly, top family managers are more likely to possess hard-to-obtain, firm-specific knowledge and higher levels of trust from key stakeholders (Donnelley, 1964) that facilitate firm-specific investments, easing cooperation and the transmission of knowledge within organizations (Barnes and Hershon, 1976). Thirdly, they might have long-term perspectives than unrelated managers (Cadbury, 2000). Last but not the least, family ownership might be able to reduce agency problems by concentrating substantial decision and cash-flow rights (Fama and Jensen, 1983; Anderson and Reeb, 2003). Alternatively, besides size limitation, the downside for family firms is due to: 1. the tensions between family and business objectives might harm the efficient allocation of management positions, executive pay, or other resources. (e.g. Christiansen, 1953; Levinson, 1971; Barnes and Hershon, 1976; Lansberg, 1983); 2. The candidates might be drawn from a limited managerial talent pool (Burkart, Panunzi and Shleifer, 2003; Pérez-González, 2006).

Regarding CEO succession decision, the models usually assume that the outside professional is better equipped than the heir. Burkart et al. (2003) present a model of succession in a firm owned and managed by its founder, who decides between hiring a professional

manager or leaving management to his heir, also simultaneously on what fraction of the company to float on the stock exchange, contingent on the legal environment. They show that (active) family firms are optimal for regimes with weak legal protection of minority shareholders, while non-family firms are optimal for those with the strongest protection. Bhattacharya and Ravikumar (2005) develop a dynamic model to analyze how this tradeoff between better qualification and agency problem affects the evolution of the family firm. They find that family firms initially grow in size by accumulating capital and then, after reaching a critical size, professionalize their management.

### **Empirics**

Morck et al. (1988b) find a significantly positive correlation between founding family management and Market-to-Book ratios for young firms, while a negative one for old firms. Irrespective of firm age, McConaughy et al. (1998) find a positive impact of founding family CEOs on M-B ratios, while Yermack (1996) find a negative correlation. More recently, Anderson and Reeb (2003) find a positive correlation between founding family ownership and firm profitability, as well as Market-to-Book ratios, conditionally on family ownership or not. Therefore, they argue that family ownership is an effective organizational structure. Villalonga and Amit (2006) show that founding families enhance value only when founders are active as executives or directors. However, dual share classes, pyramids, and voting agreements reduce such premium. The findings suggest that the agency problem resulted from the conflict between family owner and outside manager in non-family firms is more severe than that between family and non-family shareholders in founder-CEO firms.

Regarding CEO succession, Morck et al. (2000) and Villalonga and Amit (2006) find that families hurt valuations in firms managed by descendant CEOs. Bennedsen et al. (2007) adopt a unique dataset from Denmark and, by using the gender of a departing CEO's firstborn child as an instrument variable, investigate the impact of family characteristics in CEO succession decisions and the consequences of these decisions on firm performance. They find that family successions have a large negative causal impact on firm

performance. Furthermore, they show that family-CEO underperformance is particularly large in fast-growing industries, industries with highly skilled labor force, and relatively large firms. Similarly, Pérez-González (2006) finds that inherited control is detrimental to firm performance. Moreover, consistent with wasteful nepotism, this underperformance is prominent in firms in which the appointed family CEOs are not graduated from "selective" universities. Hence, it suggests that inherited control destroys firm value by limiting the scope of labour market competition.

#### 4.2.2 Family Firm and Dual Agency Problems

As mentioned in the beginning, the typical agency problem stems from the separation of ownership and control. Family ownership is able to minimize the free-rider problem that hinders effective monitoring, and to reduce the agency costs when united with management. Additionally, since family members tend to accumulate their wealth through their businesses, they are less likely to have a short time horizon in an opportunistic manner during decision making process (e.g. Anderson and Reeb, 2003; Bartholomeusz and Tanewski, 2006). Family managers can also create altruistic effects that are beneficial to stakeholders (Schulze et al., 2001).

However, there exists another type of agency problem in corporate governance, i.e. the expropriation of small shareholders in family firms. Faccio et al. (2001) argue that concentrated ownership gives rise to expropriation of minority shareholder interests in listed family firms. DeAngelo and DeAngelo (2000) and Anderson and Reeb (2003) suggest that founding family firms are more subject to issues derived from private benefit of control such as extraordinary dividend payouts, risk avoidance, excessive compensation schemes, and related party transactions. In addition, agency costs in family firms might be created through management entrenchment. For instance, several empirical studies document that founding family firms are more reluctant to maintain board independence (e.g. Anderson and Reeb, 2004; Bartholomeusz and Tanewski, 2006) .

Although, for agency costs, I have no direct measurement, several estimates have been



used. Anderson et al. (2003) find a negative relationship between founding family firm ownership and agency cost of debt. They argue that family's sustained presence in the firm also creates powerful reputation effects which provide incentives for family managers to improve firm performance. Chen et al. (2007) investigate the impact of the founding family's presence on the extent of agency problems. They argue that, due to the dual agency problems, they expect the CEO turnover-performance sensitivity to be lower in family firms run by a family CEO, compared with an outsider. The reasoning is that family firms run by a professional CEO, while facing the separation of ownership and control, are under the founding family's effective monitoring of management. They find evidence supporting this conjecture, and the agency costs reflect in lower firm value after poor performance. Overall, their results indicate that, family ownership can mitigate agency problems, but not so once family members become engaged with management.

Ang et al. (2000) use data on small corporations in the U.S. to measure absolute and relative equity agency costs under different ownership and management structures. They find significantly higher agency costs when an outsider manages the firm, inversely related to the manager's stake of equity. These costs increase with the number of non-manager shareholders, and to a lesser extent, decrease with greater monitoring by banks.

### 4.2.3 Family Firm and CEO Compensation

To my best knowledge, there is little discussion on family stake and CEO compensation. Gomez-Mejia et al. (2003) first investigate the determinants of executive compensation in publicly traded family firms in the U.S., and they find that family CEOs of family-controlled firms receive lower total income than outside professional CEOs, in which the difference increases with family ownership concentration. Meanwhile, their pay tends to be more insulated from systematic risk, which is further moderated by the presence of institutional investors and R&D intensity. They argue that institutional investors might reduce equity-based income in order to avoid conservative decisions in an already risk-averse family business context.

More recently, Cai et al. (2008) use a detailed survey of Chinese private family firms to examine the relationship between managerial family ties and compensation. They find that family managers receive more salary and bonus, hold higher positions, and are given more decision rights and more job responsibilities than non-family managers. Alternatively, the contracts of outside managers are more performance-sensitive in bonus. Bandiera et al. (2010) build a theoretical model and examine the match between firms, managers, and incentives, with a particular focus on the difference between family and non-family firms. To test their theoretical predictions, they conduct a new survey in Italy with information on managers' risk profile as well as human capital, and on their compensation schemes, along with the firms that employ them. They find that, compared with non-family firms, family firms are more likely to offer lower and flatter compensation schemes. These firms attract less talented and more risk averse managers, who would put less effort into work and receive lower satisfaction from work. Note that since almost none of their sample managers belong to the family who owns the firm, in their paper family firms in fact refer to passive family firms in my setup.

### 4.3 Hypotheses

#### 4.3.1 Agency Costs

Similar to Chen et al. (2007), I classify firms by two criteria, i.e. the identification of CEO (whether family members or not) and the family ownership.

	Family CEO	Non-Family CEO
Family Ownership	Active Family Firm (I)	Passive Family Firm (II)
No Family Ownership		Non-Family Firm (III)

Facing the conflict of interest between ownership and control, family controlled firms are less prone to agency issues. In addition, since some family influences derived from family ownership, such as effective monitoring, should also be able to provide a remedy to the agency problem, the agency costs among different types of firms are expected to be,

	Active Family (I)	Passive Family (II)	Non-Family (III)
Agency Costs	Low	Median	High

### 4.3.2 Pay-Performance

I postulate that, since pay-performance is one way to address the agency problem described above, i.e. to incentivize (outside) managers, the pay-performance estimates among different types of firms should be as follows,

	Active Family (I)	Passive Family (II)	Non-Family (III)
Pay-Performance	Low	Median	High

Once I consider CEO equity ownership, which should mitigate the need for incentives, the relations become the following,

	Active Family (I)	Passive Family (II)	Non-Family (III)
High Ownership	< Low	< Median	< High
Low Ownership	Low	Median	High

## 4.4 Data and Sample

I form my sample by using companies in the S&P600 SmallCap Index between 2001 and 2005, the most recent period which has no major disruptive financial events. I include only companies that survive during this entire period, leaving 168 companies. To identify family firms, I manually check the proxy statements for each company, along with other sources whenever needed<sup>7</sup>, and I create a dataset<sup>8</sup> which contains the following information: identity, ownership, tenure, and biographies of founder(s), board members, blockholders, and the top 5 managers, whenever available. I classify a firm as a family firm as long as

<sup>7</sup>Such as, LinkedIn, Zoominfo, the website of the company, and etc.

<sup>8</sup>There are 11,228 person-firm-year observations in total.

one of the following two criteria is met: 1. founder or 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<sup>9</sup>. Initially, I have 840 firm-year observations in which about half are identified as family firms. I match this sample with accounting data in Compustat and conduct tests on agency costs.

I use Execucomp to collect CEO compensation data. Due to some inconsistencies between these two datasets, the final sample size reduces to 785 firm-year observations<sup>10</sup>. Among them, 225 (28.66%) are active family-controlled firms; 171 (21.78%) are passive family-controlled firms; 389 (49.55%) are non-family firms. To supplement the data, I also use Compustat and RiskMetrics for accounting and governance data, respectively.

Using 2001 data, Table 1 provides summary statistics of my sample small family firms, whether sorted by firm types or not. Panel A and B show the size distribution in terms of market value and number of employees, respectively. Panel C and D show the firm age distribution and industry orientation of the sample firms. The majority of the sample firms have market value less than 600 million dollars (63.95%) and hire less than 3,000 employees (56.73%), despite some outliers remain in both distributions. Sorted by firm types, there seems to be more outliers in active family firms, while a flatter distribution in passive family firms and more of a normal distribution in non-family firms. The number of employees (both mean and median) is lowest in passive family firms, followed by active family firms, and highest in non-family firms. Once disregarding the outliers, I do not find significant variations in size among different firm types.

In addition, the majority of the sample firms as a whole are founded after 1960 (68.82%), and among them, 38.82% are founded after 1980, which suggests my sample firms tend to be young. Both the mean and median firm age are lowest in active family firms, followed by passive family firms, and highest in non-family firms. This pattern is consistent with the

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<sup>9</sup>Follow Gomez-Mejia et al. (2003), I consider father, mother, sister, brother, son, daughter, spouse, in-laws, aunt, uncle, niece, nephew, and cousin.

<sup>10</sup>Whenever the inconsistency regarding CEO identification occurs, I use the one in Execucomp (CEOANN) and match data from my dataset.

organizational evolution of firm. As for the industry orientation, more than a third of the sample firms are in the manufacturing industry, followed by construction (16.86%), finance (15.7%), and wholesale (15.12%) industry. The distribution among firm types is similar, although non-family firms seem more likely to be in the transportation, communications, and utility industry whereas active family firms are more services oriented.

## 4.5 Estimation and Testing Results

### 4.5.1 Agency Costs

Following Ang et al. (2000), I calculate two proxies for agency costs, i.e. the asset utilization ratio and the expense ratio. The asset utilization ratio is the annual sales divided by total assets, a measure of how effectively the firm's management deploys its assets. The expense ratio is the operating expense scaled by annual sales, a measure of how effectively the firm's management controls operating costs. Table 2 shows the basic statistics of these two ratios among three types of firms. Figure 1 and 3 display the corresponding histograms, and Figure 2 and 4 display the ratios based on different industry classifications, regardless of firm types.

Looking at the asset utilization ratio, I find that on average the ratios are higher in active family firms than those in the other two types of firms, despite the higher volatility. There is no significant difference between passive family firms and non-family firms. As for the expense ratio, on average the cost management of these three types of firms are similar. However, when eliminating the effects of outliers, active family firms (passive family firms) have significantly lower expense ratios than non-family firms at 1% (5%) level, but there is no significant difference between these two types of family firms. Again, the volatility is the highest for active family firms, whereas the lowest for non-family firms. Therefore, the results suggest that agency costs are lower in family firms, despite the pattern varies more compared with their non-family counterparts<sup>11</sup>.

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<sup>11</sup>The tables do not report these testing results, which are available upon request.

Regardless of firm type, I find that the asset utilization ratios differ greatly among industries, in which firms in the wholesale industry have highest and those in the public administration industry have lowest ratios. On the other hand, except financial and public administration related firms, the expense ratios are similar (and lower) across industries.

#### 4.5.2 Pay-Performance

I follow Jensen and Murphy (1990) to calculate the pay-performance estimates while further controlling for other attributes that might affect compensation. Table 3 provides summary statistics regarding the CEO compensation information, as well as the two corporate governance proxies, staggered board and GIM Index<sup>12</sup>. In general, the levels of basic salary are similar among three types of firms. When taking into account other elements of compensation, it seems that non-family firms award more market-based compensation to their CEOs than family firms<sup>13</sup>. Note that in the sample, some CEOs in the active family firms receive a tremendous amount of pay which might drive the estimation results<sup>14</sup>.

Other than compensation components, I also find that CEOs in active family firms are older, own much more equity stake, and more experienced than their counterparts. Contrast with my expectation, active family firms have fewer anti-takeover mechanisms, along with a lower propensity to have staggered boards. It suggests that family stake might reduce the need for alternative mechanisms to exert control. On the other hand, there seems no substantial differences between passive family firms and non-family firms in terms of the factors discussed above.

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<sup>12</sup>See Gompers, Ishii, and Metrick (2003) for the construction of the GIM Index.

<sup>13</sup>The OLS regression results show that there is no significant difference in CEO compensation among firm types, unlike Gomez-Mejia et al. (2003) and Bandiera et al. (2010).

<sup>14</sup>To address this issue, I also winsorize the compensation data, and the empirical results remain.

### Regression Analysis

I estimate pay-performance coefficients, in which the pay is measured by the natural log of the absolute value (elasticity) and the incremental value (first order difference)<sup>15</sup>, in two models described as follows,

$$Pay_{it} = \alpha_0 + \beta_1 FV_{it} + \beta_2 FV_{it} D(TypeII)_{it} + \beta_3 FV_{it} D(TypeI)_{it} + controls_{it} + \varepsilon_{it} \dots Model(1)$$

where  $FV$  is the market value of the firm, and the two  $D(Type.)$  refer to dummy variables assigned to one for companies classified as particular firm types. The control variables include CEO age, CEO tenure, return on assets (a ratio of earnings before interest and tax scaled by total assets), firm size (total assets), and two corporate governance proxies (GIM index and the existence of staggered board).

Because of higher agency costs in non-family firms, followed by passive and then active family firms, the pay-performance (elasticity) estimates, i.e. the betas, contingent on firm types are,

	Active Family (I)	Passive Family (II)	Non-Family (III)
Pay-Performance	$\beta_1 + \beta_3$	$\beta_1 + \beta_2$	$\beta_1$

where my conjectures are that  $\beta_1 > 0$  and  $\beta_3 < \beta_2 < 0$ .

Once I consider CEO equity ownership that should mitigate the need for incentives, I add more interaction terms and thus Model (1) becomes,

$$Pay_{it} = \alpha_0 + \beta_1 FV_{it} + \beta_2 FV_{it} D(TypeII)_{it} + \beta_3 FV_{it} D(TypeI)_{it} + \beta_4 FV_{it} D(HO)_{it} + \beta_5 FV_{it} D(TypeII)_{it} D(HO)_{it} + \beta_6 FV_{it} D(TypeI)_{it} D(HO)_{it} + controls_{it} + \varepsilon_{it} \dots Model(2)$$

where, similar to Model (1),  $FV$  is the market value of the firm. The two  $D(Type.)$  are dummy variables assigned to one for companies classified as particular firm types, and

<sup>15</sup>Note that the first difference measurement applied to the dependent variable (pay) and the main explanatory variable of interest (firm value) only. The reason is that most of the other control variables are stable over time (or simply no variations across observations).

$D(HO)$  is a dummy variable that indicates whether the CEO ownership exceeds some threshold<sup>16</sup>. The control variables are the same as those in Model (1).

Contingent on ownership level, the pay-performance (elasticity) estimates among different firm type become the following,

	Active Family (I)	Passive Family (II)	Non-Family (III)
High Ownership	$\beta_1 + \beta_3 + \beta_6$	$\beta_1 + \beta_2 + \beta_5$	$\beta_1 + \beta_4$
Low Ownership	$\beta_1 + \beta_3$	$\beta_1 + \beta_2$	$\beta_1$

where my conjectures are that  $\beta_1 > 0$ ,  $\beta_3 < \beta_2 < 0$ , and  $\beta_i < 0, i \in \{4, 5, 6\}$ .

I use the simple ordinary least square (OLS) for estimation. As shown in Table 5 and Table 6, specification (2)-(5) apply the basic Model (1)<sup>17</sup>, while (1) does not have control variables. Specification (6) and (13) represent Model (2), in which (6)-(9) adopt the 5% cutoff and (10)-(13) use the median value as the threshold for ownership. Specification (4), (5), (8), (9), (12), and (13) further control for time and industry fixed effects.

Regarding the absolute value of CEO pay, since I take natural log of both the pay and the firm value, the set of values  $(\beta_1, \beta_2, \beta_3)$  indicate the firm value elasticity of compensation<sup>18</sup>. In other words, these estimates measure the rate of response of compensation paid out due to a firm value change. The results in Table 5 show that, regardless of firm type, the pay-performance elasticity are higher in total compensation than in basic salary, either in terms of absolute magnitude or statistical significance. For instance, in non-family firms, a 1% increase of firm value corresponds to a roughly 0.33% (0.16%) increase of total compensation (basic salary). Contingent on firm type, I find that this pay-performance elasticity is always positive for non-family firms. Other than that, this elasticity, in particular in total compensation, is lower for active family firms than that for passive family ones.

<sup>16</sup>We first use 5%, the definition of a blockholder, as the cutoff point, then median as an alternative threshold.

<sup>17</sup>The only difference lies in the choice of corporate governance proxy.

<sup>18</sup>For the purpose of simplicity, hereafter I refer pay-performance elasticity to this firm value elasticity of compensation.



Considering ownership, on the whole, the evidence indicates a negative relationship between ownership and compensation. Conditional on firm type, the (family) ownership affects pay-performance elasticity in basic salary but not in total compensation. Inconsistent with my conjectures, to CEOs, having higher ownership mitigates the need for incentives only in the non-family firms while higher ownership in family firms, active or passive, reinforces the incentives. Moreover, I observe the discrepancies in elasticity among firm types only when I take into account this conditional ownership, which suggests a moderating effect on the elasticity. As for other control variables, I find that CEO age is negatively related with compensation, while CEO tenure and firm size are positively associated with CEO pay. Note that weak governance, either measured by the number of anti-takeover provisions or simply the existence of staggered board, leads to higher basic salary pay, but not total compensation.

Table 6 shows the estimation results with regard to the incremental value of CEO pay. Similar to the previous findings, regardless of firm type, the pay-performance estimates are higher in total compensation than in basic salary. For instance, in non-family firms, a 1 dollar increase of firm value corresponds to a roughly 1.55 to 2.32 (0.61 to 0.73) dollar increase of total compensation (basic salary). However, except for non-family firms, the estimates lose the statistical significance, and in general the first difference models have much lower explanatory power compared with the elasticity models. In addition, the ownership, whether contingent on firm type or not, does not influence the compensation. These findings suggest that across firms, the (incremental) performance pay is similar and independent of family influences.

## **Robustness**

### **Firm Size and Firm Age**

I also test whether performance pay varies among firm types through other channels such as firm size and firm age. Based on Model (2), I replace the set of  $D(HO)$  variables with ones indicate whether the firm size (age) exceeds the median value. Table 7 and Table 8

show the results for pay-performance estimates in elasticity and in difference, respectively.

In terms of elasticity, firm size contingent on firm type does not matter in basic salary, despite being large passive family firms reduces the elasticity in total compensation. Old passive family firms increase the elasticity in basic salary. In terms of incremental pay, large non-family firms reduce the performance pay in total compensation, while old active family firms enhance performance pay in the basic salary.

Furthermore, to better understand the pay-performance elasticity, I run separate regressions based on firm size sorted by quartile<sup>19</sup>. I find that the elasticity pattern in the largest 25% of firms is inconsistent with my priors ( $\beta_1 > 0$ ,  $\beta_2 < 0$ ,  $\beta_3 = 0$ ), compared with median size firms ( $\beta_1 > 0$ ,  $\beta_2 = 0$ ,  $\beta_3 < 0$ ). The smallest 25% of firms do not show discrepancies among firm types ( $\beta_1 > 0$ ,  $\beta_2 = \beta_3 = 0$ ). Similarly, when I group firms based on firm age by quartile, the pay in the median age firms have what I expect among firm types ( $\beta_1 > 0$ ,  $\beta_2 < 0$ ,  $\beta_3 < 0$ ). This elasticity pattern in younger firms again does not vary among firm types ( $\beta_1 > 0$ ,  $\beta_2 = \beta_3 = 0$ ), while in very old firms, the pattern is consistent with my priors ( $\beta_1 > 0$ ,  $\beta_2 = 0$ ,  $\beta_3 < 0$ ).

### Firm Type

Other than the pooled models in the previous section, I also estimate the coefficients separately. As shown in Table 9 and Table 10, I use the simple OLS in specification (1)-(5), while specification (4) and (5) control for time and industry fixed effects. Specification (6) and (7) use fixed effects panel estimation. In Table 9, I look at the (natural log of) absolute level of CEO pay, and find that all three types of firms link CEO pay packages to performance. Still, as expected, there are discrepancies among different firm types. In particular, what stands out is that the pay-performance elasticity estimates in non-family firms are economically and statistically larger than those in family firms, either run by insider or outsider. For family firms, the pattern is not clear, despite the magnitude is higher in passive family firms than that in active ones. Note that the ownership reduces

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<sup>19</sup>The results are not tabled and are available upon request.

the compensation for active family firms only.

In Table 10, I examine the incremental level of CEO pay. As a whole, in active family firms, the basic salary component, as well as the total compensation, is not sensitive to performance anymore. Alternatively, the pay-performance estimates in non-family firms are higher than those in passive family firms. Moreover, unlike Jensen and Murphy (1990), the estimates are economically higher for each type of firms. More specifically, for every dollar generated in a non-family firm, its CEO would receive approximately 1.64 to 2.09 dollars more in total compensation. Similarly, in a passive family firm, the range is between 0.96 and 1.43.

#### 4.6 Concluding Remarks

Does the existence of family influences help alleviate the traditional principal-agent problem in small corporations? In this chapter, by using a sample of 168 small publicly-traded U.S. firms between 2001 and 2005, I measure the agency costs and further examine how the CEO compensation structure varies among different types of firms, if any. Following Ang et al. (2000), I adopt asset utilization ratio and expense ratio to indirectly measure agency costs. I find that agency costs are lower in family firms than those in non-family firms. Notwithstanding, the flatter distribution patterns in terms of both measurements, especially in active family firms, indicate that the way that family firms make use of their resources varies greatly. Still, it verifies the assumption behind my study that the principle-agent problem does exist in small firms.

My estimates for pay-performance (elasticity) are the highest in non-family firms, followed by those in passive family firms, and the lowest in the active family firms. Besides, this pattern is more pronounced in total compensation than in basic salary component. For instance, in non-family firms, a 1% increase of firm value corresponds to an approximately 0.33% (0.16%) increase of total compensation (basic salary). As a whole, the elasticity models fit more than their incremental value models. Without considering firm type, ownership reduces CEO compensation in general. Based on firm type, I observe variations regarding

how CEO ownership influences pay-performance elasticity in basic salary, but not so in total compensation. Taken together, these findings suggest that family influences might reduce the need for alternative governance mechanisms to exercise control. As a result, family control and performance pay seem substitutes as corporate governance mechanisms.

My next step is to link CEO compensation, in particular the pay-performance estimates, to (post-) firm performance, and see whether different types of firms lead to heterogeneous firm performance, via CEO compensation structure and ownership, so that I could evaluate the effectiveness of different governance mechanisms at play. In addition, one caveat of this study is that the sample includes only firms that survive throughout the entire sample period of 2001-2005. I would check whether survival issues exist in order to address potential selection bias.

#### **4.7 Table and Figure**

**Table 1 Sample Statistics**

This table provides a summary of the sample small family firms, based on the information in 2001. The full sample consists of 172 companies in the S&P 600 SmallCap Index that survive during the whole period of 2001 to 2005. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. Panel A and B show two size distribution, in terms of market value (U.S. million dollars) and the number of employees, of the sample firms, respectively. Panel C and D show firm age distribution and industrial orientation, based on the SIC codes, of the sample firms.

Panel A: Size (Market Value)							
	Total	Type I		Type II		Type III	
	Number of Firms	Number of Firms	Fraction in %	Number of Firms	Fraction in %	Number of Firms	Fraction in %
< 100	8	6	10.91	1	2.63	1	1.33
100-200	22	5	9.09	5	13.16	12	16.00
200-300	12	3	5.45	2	5.26	7	9.33
300-400	22	7	12.73	3	7.89	12	16.00
400-500	20	4	7.27	6	15.79	10	13.33
500-600	22	6	10.91	3	7.89	13	17.33
600-700	12	3	5.45	3	7.89	6	8.00
700-800	10	4	7.27	3	7.89	3	4.00
800-900	11	3	5.45	4	10.53	4	5.33
900-1000	8	3	5.45	4	10.53	1	1.33
> 1,000	21	11	20.00	4	10.53	6	8.00
Sample Size	168	55	100.00	38	100.00	75	100.00

Panel B: Size (Number of Employees)							
	Total	Type I		Type II		Type III	
	Number of Firms	Number of Firms	Fraction in %	Number of Firms	Fraction in %	Number of Firms	Fraction in %
< 500	18	6	11.11	6	16.67	6	8.00
500-1,000	23	5	9.26	9	25.00	9	12.00
1,000-2,000	30	15	27.78	6	16.67	9	12.00
2,000-3,000	22	3	5.56	4	11.11	15	20.00
3,000-4,000	16	7	12.96	1	2.78	8	10.67
4,000-5,000	10	5	9.26	2	5.56	3	4.00
5,000-6,000	9	2	3.70	1	2.78	6	8.00
6,000-7,000	7	1	1.85	2	5.56	4	5.33
7,000-8,000	5	2	3.70	0	0.00	3	4.00
8,000-9,000	2	1	1.85	0	0.00	1	1.33
9,000-10,000	4	1	1.85	1	2.78	2	2.67
> 10,000	19	6	11.11	4	11.11	9	12.00
Sample Size	165	54	100.00	36	100.00	75	100.00

Panel C: Firm Age							
	Total	Type I		Type II		Type III	
	Number of Firms	Number of Firms	Fraction in %	Number of Firms	Fraction in %	Number of Firms	Fraction in %
< 10	26	7	12.73	5	13.51	14	18.92
10-20	46	18	32.73	15	40.54	13	17.57
20-30	21	9	16.36	5	13.51	7	9.46
30-40	26	11	20.00	4	10.81	11	14.86
40-50	11	2	3.64	2	5.41	7	9.46
50-60	7	2	3.64	0	0.00	5	6.76
60-70	4	0	0.00	2	5.41	2	2.70
70-80	11	5	9.09	0	0.00	6	8.11
80-90	5	0	0.00	1	2.70	4	5.41
> 90	9	1	1.82	3	8.11	5	6.76
Sample Size	166	55	100.00	37	100.00	74	100.00

Panel D: Industry Orientation							
	Total	Type I		Type II		Type III	
	Number of Firms	Number of Firms	Fraction in %	Number of Firms	Fraction in %	Number of Firms	Fraction in %
Agriculture, Forestry, and Fishing	1	0	0.00	0	0.00	1	1.33
Mining	12	4	7.27	3	7.89	5	6.67
Construction	29	9	16.36	6	15.79	14	18.67
Manufacturing	58	17	30.91	15	39.47	26	34.67
Transportation, Communications, and Utilities	7	0	0.00	1	2.63	6	8.00
Wholesale Trade	26	10	18.18	6	15.79	10	13.33
Finance, Insurance, and Real Estate	27	9	16.36	6	15.79	12	16.00
Service Industries	7	5	9.09	1	2.63	1	1.33
Public Administration	1	1	1.82	0	0.00	0	0.00
Sample Size	168	55	100.00	38	100.00	75	100.00

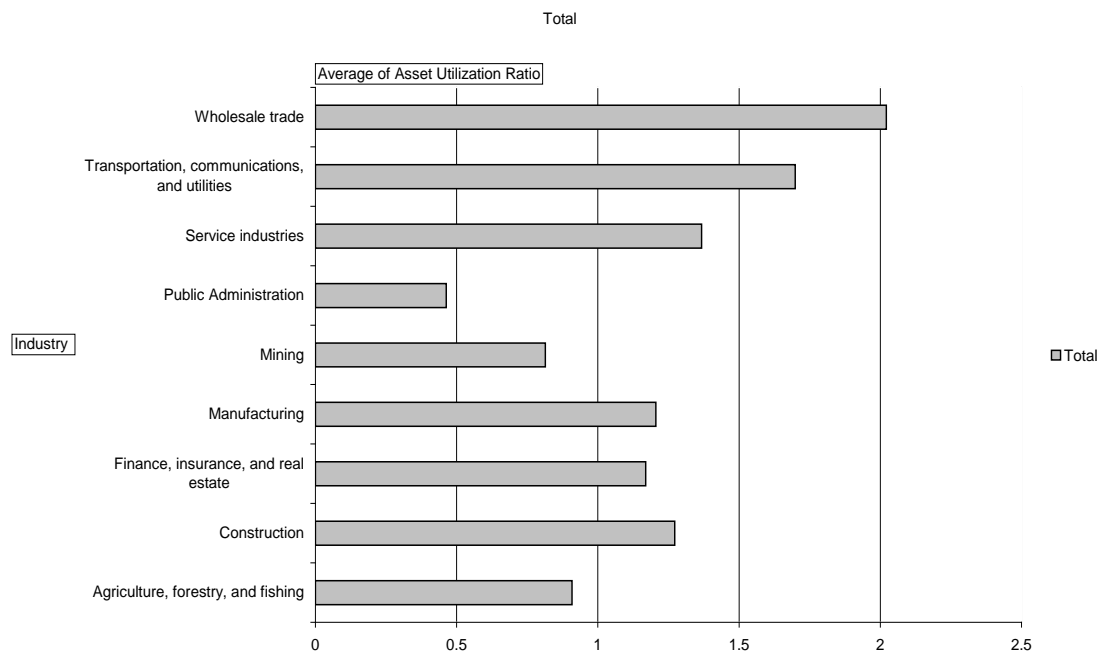
**Table 2 Small Family Firm and Agency Costs**

This table shows the relations of different types of firms and the agency costs, proxied by two measures, the asset utilization ratio (Panel A) and the expense ratio (Panel B). The asset utilization ratio is the annual sales divided by total assets, a measure of how effectively the firm’s management deploys its assets. The expense ratio is the operating expense scaled by annual sales, a measure of how effectively the firm’s management controls operating costs. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO.

Panel A: Asset Utilization Ratio				
	Total	Type I	Type II	Type III
Mean	1.2021	1.2975	1.1220	1.1795
Standard Deviation	0.6913	0.8187	0.5657	0.6513
Median	1.0382	1.0596	1.0419	1.0164
Max	4.3598	4.3598	3.8895	3.8195
Min	0	0	0.0796	0.2116
Sample Size	788	232	166	390



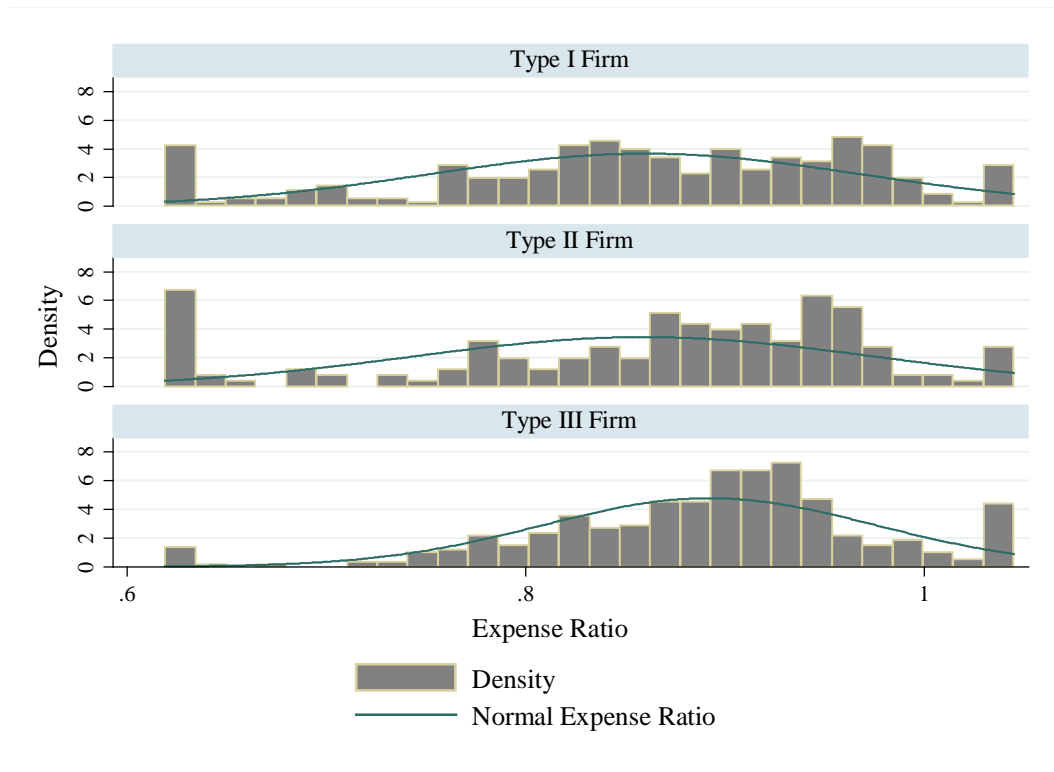
**Figure 1 Histogram of Asset Utilization Ratio**



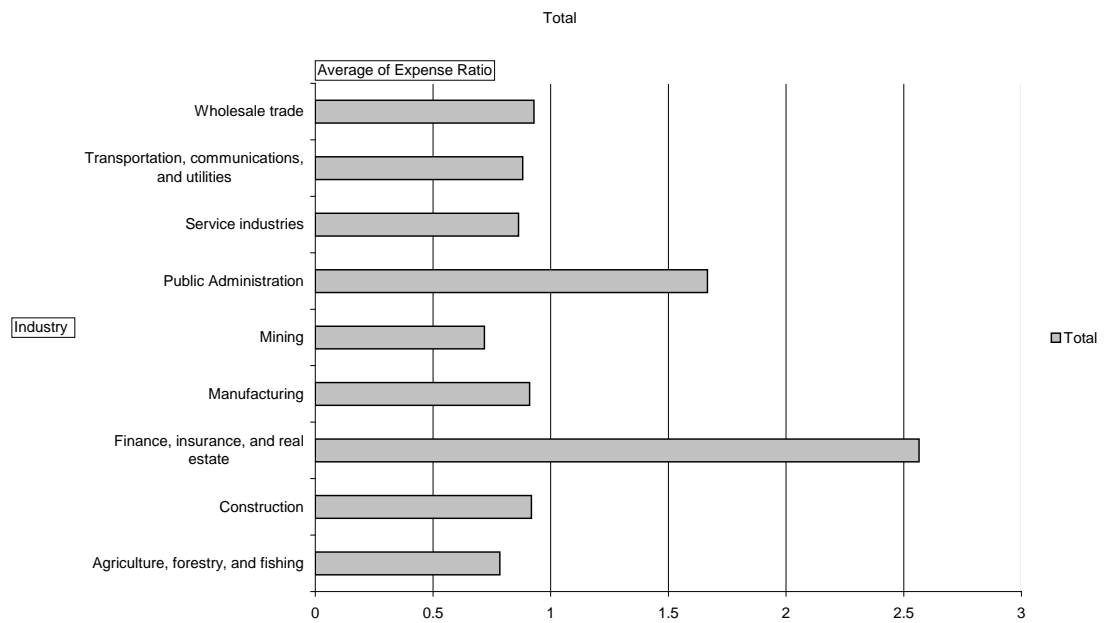
**Figure2 Sales-to-Asset Ratio by One-Digit SIC**

	Panel B: Expense Ratio			
	Total	Type I	Type II	Type III
Mean	1.0885	1.4697	0.9666	0.9145
Standard Deviation	4.8527	8.8955	1.2065	0.2345
Median	0.8941	0.8662	0.8846	0.9033
Max	135.9874	135.9874	15.7010	3.5029
Min	0.2363	0.2363	0.4433	0.2799
Sample Size	787	231	166	390





**Figure3 Histogram of Expense Ratio (Winsorized at 5% Level)**



**Figure4 Operating Expense-to-Sales Ratio by One-Digit SIC**

**Table 3 Sample Statistics: CEO Compensation and Corporate Governance**

	Firm Type <sup>1</sup>	Salary	Bonus	Total Basic	TDC1 <sup>2</sup>	TDC2 <sup>3</sup>	Stockholder Equity	Market Value	CEO Age	CEO Ownership	CEO Tenure	GIM Index	Classified Board
Mean	I	536.47	679.95	1216.42	2586.18	3513.42	329.60	793.82	56.43	15.44	15.54	8.12	0.57
	II	483.96	356.36	840.32	2074.49	1933.85	348.07	781.19	52.52	1.84	4.11	9.31	0.75
	III	524.95	418.25	943.20	2543.13	2429.29	336.39	695.84	53.71	1.97	5.61	9.50	0.64
	Total	519.32	479.78	999.10	2454.39	2632.11	336.99	742.57	54.23	5.80	8.13	9.07	0.64
Standard Deviation	I	260.49	2173.33	2267.41	5035.22	8922.20	257.99	758.30	8.37	14.64	10.61	1.99	0.50
	II	178.62	413.00	526.71	1669.45	2724.30	285.21	667.36	7.15	1.76	4.01	2.39	0.43
	III	199.41	730.04	822.80	2893.45	3253.70	287.41	589.58	6.38	1.79	5.28	2.37	0.48
	Total	215.31	1291.11	1372.85	3469.49	5471.99	278.53	659.67	7.31	10.04	8.48	2.34	0.48
Median	I	500	250	755.429	1490.471	1249.743	261.415	552.7918	57	10.6	14	8	1
	II	450	262.406	727.443	1577.583	1032.915	237.613	606.839	51	1.3	3	10	1
	III	506.629	252	753	1723.685	1238.457	274.591	530.9488	54	1.54	4	10	1
	Total	500	254.303	750	1627.999	1197.883	266.929	548.6886	54	2.23	5	9	1
Maximum	I	1700	20500	21500	58981.34	94303.28	1952.109	5058.036	77	63.6	43	12	1
	II	950	2381.075	3324.075	9296.409	20230.9	1497.067	3950.856	70	12.9	21	14	1
	III	1229.167	11475.03	12475.03	32640.02	28834.72	1936.488	3717.736	69	13.1	31	17	1
	Total	1700	20500	21500	58981.34	94303.28	1952.109	5058.036	77	63.6	43	17	1
Minimum	I	0	0	205	246.014	230.823	-48.428	42.0266	40	1.5	0	3	0
	II	8.88	0	8.88	324.27	164.583	-33.9	20.0428	39	0	0	3	0
	III	0	-0.001	0	37.083	0	-1474.28	27.4528	35	0	0	3	0
	Total	0	-0.001	0	37.083	0	-1474.28	20.0428	35	0	0	3	0

<sup>1</sup> Type 1: Active Family-Controlled Firm; Type 2: Passive Family-Controlled Firm; Type 3: Non-Family Firm<sup>2</sup> Total Compensation (Salary + Bonus + Other Annual + Restricted Stock Grants + LTIP Payouts + All Other + Value of Option Grants)<sup>3</sup> Total Compensation (Salary + Bonus + Other Annual + Restricted Stock Grants + LTIP Payouts + All Other + Value of Options Exercised)

**Table 4 Correlation Matrix**

This table reports the correlations between explanatory variables Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. Firm Value is measured by natural log of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets).

	Firm Value	Firm Value *Dummy(Type II Firm)	Firm Value *Dummy(Type I Firm)	CEO Ownership	CEO Age	CEO Tenure	Return on Assets	Firm Size	GIM Index	Classified Board
Firm Value	1									
Firm Value *Dummy(Type II Firm)	0.1161	1								
Firm Value *Dummy(Type I Firm)	0.1456	-0.3123	1							
CEO Ownership	-0.0917	-0.2048	0.5822	1						
CEO Age	0.1118	-0.1110	0.2227	0.3326	1					
CEO Tenure	-0.0161	-0.2366	0.5170	0.6263	0.4395	1				
Return on Assets	0.4668	0.0071	0.1714	0.0723	0.0552	0.0644	1			
Firm Size	0.6531	0.0488	0.0040	-0.1141	0.1981	-0.0058	0.3317	1		
GIM Index	0.0693	0.0400	-0.2490	-0.2172	-0.0317	-0.1026	0.0704	0.1817	1	
Classified Board	0.1121	0.1026	-0.0969	-0.1314	0.0180	-0.0089	0.1800	0.1573	0.5087	1

**Table 5 Pay-Performance of CEO Compensation (Elasticity)**

This table shows the estimates of the pooled models that estimate how different types of firms affect the determinants of CEO compensation, in terms of the absolute level. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. The dependent variable, CEO compensation, is scaled by the natural log. For the explanatory variables, firm value is measured by natural log of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets). Specification (1) is the basic model, while (2) and (3) include control variables. Specification (6) and (7) control for ownership that exceeds the 5% holding threshold, while (10) and (11) adopts the median threshold. Specification (4), (5), (8), (9), (12) and (13) control for time and industry fixed effects. Industry fixed effects adopt one-digit SIC codes. Panel A displays the estimates for the basic salary and bonus. Panel B shows the estimation results with regard to total compensation that includes value of option grants (TDC1). Standard deviations are reported in the parentheses and the symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> represent statistical significance at the 0.1, 0.05, 0.01 level, respectively.

Panel A: Basic Salary and Bonus													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Value	0.331 <sup>c</sup> (0.024)	0.163 <sup>c</sup> (0.039)	0.164 <sup>c</sup> (0.039)	0.132 <sup>c</sup> (0.04)	0.134 <sup>c</sup> (0.04)	0.189 <sup>c</sup> (0.038)	0.191 <sup>c</sup> (0.038)	0.158 <sup>c</sup> (0.039)	0.159 <sup>c</sup> (0.039)	0.181 <sup>c</sup> (0.039)	0.183 <sup>c</sup> (0.039)	0.148 <sup>c</sup> (0.04)	0.149 <sup>c</sup> (0.04)
Firm Value *Dummy(Type II Firm)	-0.020 <sup>b</sup> (0.009)	-0.013 (0.01)	-0.015 (0.01)	-0.014 (0.01)	-0.017 <sup>a</sup> (0.01)	-0.018 <sup>a</sup> (0.011)	-0.021 <sup>b</sup> (0.011)	-0.020 <sup>a</sup> (0.011)	-0.023 <sup>b</sup> (0.01)	-0.024 <sup>a</sup> (0.012)	-0.028 <sup>b</sup> (0.012)	-0.027 <sup>b</sup> (0.012)	-0.031 <sup>b</sup> (0.012)
Firm Value *Dummy(Type I Firm)	0.002 (0.008)	0.008 (0.012)	0.006 (0.012)	0.007 (0.012)	0.005 (0.012)	-0.028 <sup>a</sup> (0.016)	-0.030 <sup>a</sup> (0.016)	-0.025 (0.016)	-0.027 <sup>a</sup> (0.016)	-0.048 <sup>b</sup> (0.024)	-0.051 <sup>b</sup> (0.024)	-0.050 <sup>b</sup> (0.024)	-0.053 <sup>b</sup> (0.024)
CEO Ownership		-0.009 <sup>c</sup> (0.003)	-0.008 <sup>b</sup> (0.003)	-0.008 <sup>b</sup> (0.003)	-0.007 <sup>b</sup> (0.003)								
Firm Value *Dummy(Block Ownership)						-0.375 <sup>c</sup> (0.083)	-0.388 <sup>c</sup> (0.083)	-0.369 <sup>c</sup> (0.082)	-0.383 <sup>c</sup> (0.082)				
Firm Value *Dummy(Type II Firm) *Dummy(Block Ownership)						0.407 <sup>c</sup> (0.09)	0.413 <sup>c</sup> (0.09)	0.396 <sup>c</sup> (0.09)	0.398 <sup>c</sup> (0.09)				
Firm Value *Dummy(Type I Firm) *Dummy(Block Ownership)						0.407 <sup>c</sup> (0.085)	0.421 <sup>c</sup> (0.085)	0.396 <sup>c</sup> (0.084)	0.411 <sup>c</sup> (0.083)				

Panel A: Basic Salary and Bonus													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Value													
*Dummy(High Ownership)										-0.008 (0.013)	-0.011 (0.013)	-0.012 (0.013)	-0.016 (0.013)
Firm Value													
*Dummy(Type II Firm)													
*Dummy(High Ownership)										0.036 (0.024)	0.039 <sup>a</sup> (0.024)	0.040 <sup>a</sup> (0.023)	0.042 <sup>a</sup> (0.023)
Firm Value													
*Dummy(Type I Firm)													
*Dummy(High Ownership)										0.057 <sup>b</sup> (0.027)	0.060 <sup>b</sup> (0.027)	0.062 <sup>b</sup> (0.027)	0.066 <sup>b</sup> (0.027)
Controls:													
CEO Age		-0.007 <sup>a</sup> (0.004)	-0.007 <sup>a</sup> (0.004)	-0.007 <sup>a</sup> (0.004)	-0.007 <sup>a</sup> (0.004)	-0.008 <sup>b</sup> (0.004)	-0.008 <sup>b</sup> (0.004)	-0.008 <sup>a</sup> (0.004)	-0.008 <sup>a</sup> (0.004)	-0.009 <sup>b</sup> (0.004)	-0.009 <sup>b</sup> (0.004)	-0.008 <sup>b</sup> (0.004)	-0.008 <sup>b</sup> (0.004)
CEO Tenure		0.017 <sup>c</sup> (0.004)	0.016 <sup>c</sup> (0.004)	0.016 <sup>c</sup> (0.004)	0.015 <sup>c</sup> (0.004)	0.011 <sup>c</sup> (0.004)	0.011 <sup>c</sup> (0.004)	0.011 <sup>c</sup> (0.004)	0.010 <sup>c</sup> (0.004)	0.012 <sup>c</sup> (0.004)	0.012 <sup>c</sup> (0.004)	0.011 <sup>c</sup> (0.004)	0.011 <sup>c</sup> (0.004)
Return on Assets		0.213 (0.222)	0.151 (0.224)	0.272 (0.222)	0.203 (0.223)	0.110 (0.219)	0.033 (0.22)	0.186 (0.219)	0.105 (0.219)	0.088 (0.224)	0.017 (0.226)	0.151 (0.224)	0.075 (0.224)
Firm Size		0.687 <sup>c</sup> (0.094)	0.691 <sup>c</sup> (0.093)	0.642 <sup>c</sup> (0.098)	0.642 <sup>c</sup> (0.097)	0.683 <sup>c</sup> (0.093)	0.685 <sup>c</sup> (0.092)	0.648 <sup>c</sup> (0.097)	0.642 <sup>c</sup> (0.095)	0.714 <sup>c</sup> (0.095)	0.719 <sup>c</sup> (0.094)	0.673 <sup>c</sup> (0.099)	0.672 <sup>c</sup> (0.097)
GIM Index		0.018 (0.011)		0.016 (0.011)		0.022 <sup>b</sup> (0.011)		0.018 (0.011)		0.022 <sup>a</sup> (0.011)		0.019 <sup>a</sup> (0.011)	
Classified Board			0.128 <sup>b</sup> (0.055)		0.139 <sup>b</sup> (0.055)		0.159 <sup>c</sup> (0.054)		0.168 <sup>c</sup> (0.054)		0.150 <sup>c</sup> (0.055)		0.162 <sup>c</sup> (0.054)
Industry FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.2084	0.3552	0.3588	0.3951	0.4009	0.3779	0.384	0.4161	0.4248	0.3546	0.3594	0.3967	0.4044
Adjusted R <sup>2</sup>	0.2054	0.3432	0.3469	0.3696	0.3755	0.3637	0.3699	0.3888	0.3979	0.3399	0.3448	0.3685	0.3765
Sample Size	780	494	494	494	494	494	494	494	494	494	494	494	494

Panel B: Total Compensation													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Value	0.466 <sup>c</sup> (0.029)	0.340 <sup>c</sup> (0.048)	0.339 <sup>c</sup> (0.048)	0.318 <sup>c</sup> (0.05)	0.318 <sup>c</sup> (0.05)	0.363 <sup>c</sup> (0.048)	0.362 <sup>c</sup> (0.048)	0.336 <sup>c</sup> (0.05)	0.335 <sup>c</sup> (0.05)	0.363 <sup>c</sup> (0.048)	0.362 <sup>c</sup> (0.048)	0.338 <sup>c</sup> (0.05)	0.337 <sup>c</sup> (0.05)
Firm Value *Dummy(Type II Firm)	-0.024 <sup>b</sup> (0.011)	-0.018 (0.013)	-0.019 (0.013)	-0.023 <sup>a</sup> (0.013)	-0.024 <sup>a</sup> (0.013)	-0.022 (0.013)	-0.023 <sup>a</sup> (0.013)	-0.026 <sup>a</sup> (0.013)	-0.027 <sup>b</sup> (0.013)	-0.028 <sup>a</sup> (0.015)	-0.030 <sup>b</sup> (0.015)	-0.035 <sup>b</sup> (0.015)	-0.037 <sup>b</sup> (0.015)
Firm Value *Dummy(Type I Firm)	-0.027 <sup>c</sup> (0.01)	-0.019 (0.015)	-0.022 (0.014)	-0.022 (0.015)	-0.023 (0.014)	-0.036 <sup>a</sup> (0.02)	-0.039 <sup>a</sup> (0.02)	-0.035 <sup>a</sup> (0.02)	-0.036 <sup>a</sup> (0.02)	-0.051 <sup>a</sup> (0.03)	-0.053 <sup>a</sup> (0.03)	-0.054 <sup>a</sup> (0.029)	-0.056 <sup>a</sup> (0.029)
CEO Ownership		-0.012 <sup>c</sup> (0.004)	-0.012 <sup>c</sup> (0.004)	-0.011 <sup>c</sup> (0.004)	-0.011 <sup>c</sup> (0.004)								
Firm Value *Dummy(Block Ownership)						-0.023 (0.06)	-0.021 (0.06)	-0.033 (0.06)	-0.032 (0.06)				
Firm Value *Dummy(Type II Firm) *Dummy(Block Ownership)						0.043 (0.075)	0.039 (0.075)	0.040 (0.077)	0.034 (0.077)				
Firm Value *Dummy(Type I Firm) *Dummy(Block Ownership)						0.023 (0.064)	0.021 (0.064)	0.028 (0.064)	0.028 (0.064)				
Firm Value *Dummy(High Ownership)										-0.003 (0.016)	-0.005 (0.016)	-0.010 (0.016)	-0.012 (0.016)
Firm Value *Dummy(Type II Firm) *Dummy(High Ownership)										0.029 (0.029)	0.032 (0.029)	0.037 (0.029)	0.039 (0.029)
Firm Value *Dummy(Type I Firm) *Dummy(High Ownership)										0.021 (0.034)	0.020 (0.034)	0.026 (0.033)	0.027 (0.033)
Controls:													
CEO Age		-0.013 <sup>c</sup> (0.005)	-0.013 <sup>c</sup> (0.005)	-0.012 <sup>b</sup> (0.005)	-0.012 <sup>b</sup> (0.005)	-0.015 <sup>c</sup> (0.005)	-0.015 <sup>c</sup> (0.005)	-0.014 <sup>c</sup> (0.005)	-0.014 <sup>c</sup> (0.005)	-0.014 <sup>c</sup> (0.005)	-0.014 <sup>c</sup> (0.005)	-0.014 <sup>c</sup> (0.005)	-0.014 <sup>c</sup> (0.005)

Panel B: Total Compensation													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
CEO Tenure		0.018 <sup>c</sup>	0.019 <sup>c</sup>	0.017 <sup>c</sup>	0.017 <sup>c</sup>	0.013 <sup>c</sup>	0.013 <sup>c</sup>	0.012 <sup>c</sup>	0.012 <sup>c</sup>	0.012 <sup>c</sup>	0.012 <sup>c</sup>	0.012 <sup>b</sup>	0.011 <sup>b</sup>
		(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Return on Assets		0.218	0.216	0.244	0.229	0.143	0.132	0.190	0.167	0.100	0.088	0.132	0.107
		(0.273)	(0.276)	(0.274)	(0.276)	(0.276)	(0.279)	(0.277)	(0.279)	(0.277)	(0.28)	(0.278)	(0.28)
Firm Size		0.480 <sup>c</sup>	0.496 <sup>c</sup>	0.470 <sup>c</sup>	0.477 <sup>c</sup>	0.496 <sup>c</sup>	0.513 <sup>c</sup>	0.485 <sup>c</sup>	0.492 <sup>c</sup>	0.509 <sup>c</sup>	0.526 <sup>c</sup>	0.502 <sup>c</sup>	0.508 <sup>c</sup>
		(0.116)	(0.115)	(0.121)	(0.12)	(0.117)	(0.117)	(0.123)	(0.122)	(0.117)	(0.116)	(0.123)	(0.121)
GIM Index		0.017		0.010		0.022		0.014		0.021		0.013	
		(0.014)		(0.014)		(0.014)		(0.014)		(0.014)		(0.014)	
Classified Board			0.040		0.048		0.064		0.073		0.065		0.074
			(0.068)		(0.068)		(0.068)		(0.068)		(0.068)		(0.068)
Industry FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.2486	0.3462	0.3446	0.3769	0.3769	0.3343	0.3323	0.3671	0.3674	0.3359	0.334	0.3692	0.3697
Adjusted R <sup>2</sup>	0.2456	0.334	0.3324	0.3505	0.3505	0.3191	0.3171	0.3375	0.3378	0.3207	0.3188	0.3397	0.3402
Sample Size	778	494	494	494	494	494	494	494	494	494	494	494	494

**Table 6 Pay-Performance of CEO Compensation (Incremental Value)**

This table shows the estimates of the pooled models that estimate how different types of firms affect the determinants of CEO compensation, in terms of the incremental value. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. The dependent variable, CEO compensation, is scaled by the natural log. For the explanatory variables, firm value is measured by natural log of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets). Specification (1) is the basic model, while (2) and (3) include control variables. Specification (6) and (7) control for ownership that exceeds the 5% holding threshold, while (10) and (11) adopts the median threshold. Specification (4), (5), (8), (9), (12) and (13) control for time and industry fixed effects. Industry fixed effects adopt one-digit SIC codes. Panel A displays the estimates for the basic salary and bonus. Panel B shows the estimation results with regard to total compensation that includes value of option grants (TDC1). Standard deviations are reported in the parentheses and the symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> represent statistical significance at the 0.1, 0.05, 0.01 level, respectively.

Panel A: Basic Salary and Bonus													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Value	0.61 <sup>c</sup> (0.12)	0.65 <sup>c</sup> (0.19)	0.65 <sup>c</sup> (0.19)	0.63 <sup>c</sup> (0.19)	0.63 <sup>c</sup> (0.19)	0.67 <sup>c</sup> (0.19)	0.67 <sup>c</sup> (0.19)	0.63 <sup>c</sup> (0.20)	0.64 <sup>c</sup> (0.19)	0.73 <sup>c</sup> (0.20)	0.72 <sup>c</sup> (0.20)	0.67 <sup>c</sup> (0.21)	0.67 <sup>c</sup> (0.21)
Firm Value *Dummy(Type II Firm)	-0.11 (0.21)	-0.41 (0.30)	-0.41 (0.30)	-0.49 (0.30)	-0.50 (0.30)	-0.43 (0.30)	-0.43 (0.30)	-0.50 <sup>a</sup> (0.30)	-0.51 <sup>a</sup> (0.30)	-0.65 <sup>b</sup> (0.32)	-0.64 <sup>b</sup> (0.32)	-0.73 <sup>b</sup> (0.32)	-0.74 <sup>b</sup> (0.32)
Firm Value *Dummy(Type I Firm)	-0.03 (0.17)	-0.16 (0.24)	-0.16 (0.24)	-0.23 (0.24)	-0.23 (0.24)	-0.67 (0.50)	-0.66 (0.50)	-0.67 (0.50)	-0.66 (0.50)	-0.66 (0.76)	-0.64 (0.76)	-0.85 (0.75)	-0.83 (0.75)
CEO Ownership		-2.21 (5.10)	-1.80 (5.10)	-1.94 (5.12)	-1.58 (5.12)								
Firm Value *Dummy(Block Ownership)						-0.47 (1.76)	-0.51 (1.76)	-0.22 (1.76)	-0.27 (1.76)				
Firm Value *Dummy(Type II Firm) *Dummy(Block Ownership)						2.32 (3.13)	2.41 (3.13)	1.47 (3.30)	1.64 (3.30)				
Firm Value *Dummy(Type I Firm) *Dummy(Block Ownership)						1.03 (1.83)	1.06 (1.83)	0.71 (1.83)	0.75 (1.83)				
Firm Value *Dummy(High Ownership)										-0.36 (0.44)	-0.34 (0.45)	-0.25 (0.45)	-0.24 (0.45)



Panel A: Basic Salary and Bonus													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Value													
*Dummy(Type II Firm)													
*Dummy(High Ownership)										1.58 <sup>a</sup>	1.56 <sup>a</sup>	1.69 <sup>b</sup>	1.68 <sup>b</sup>
										(0.83)	(0.83)	(0.84)	(0.84)
Firm Value													
*Dummy(Type I Firm)													
*Dummy(High Ownership)										0.79	0.77	0.85	0.82
										(0.87)	(0.88)	(0.87)	(0.87)
Controls:													
CEO Age		-8.09	-8.11	-10.43	-10.54	-8.17	-8.14	-10.61 <sup>a</sup>	-10.64 <sup>a</sup>	-8.32	-8.30	-10.85 <sup>a</sup>	-10.92 <sup>a</sup>
		(6.21)	(6.21)	(6.69)	(6.39)	(6.16)	(6.15)	(6.34)	(6.33)	(6.18)	(6.18)	(6.34)	(6.33)
CEO Tenure		7.60	7.44	8.80	8.54	6.57	6.64	7.77	7.71	6.67	6.74	8.09	8.03
		(6.06)	(6.06)	(6.08)	(6.10)	(5.18)	(5.16)	(5.21)	(5.20)	(5.15)	(5.13)	(5.18)	(5.16)
Return on Assets		-259.69	-286.00	-286.98	-314.24	-285.03	-311.29	-308.42	-335.75	-262.06	-283.97	-281.24	-306.02
		(315.12)	(319.27)	(317.38)	(320.88)	(314.36)	(317.88)	(316.73)	(319.52)	(313.37)	(316.89)	(315.08)	(317.91)
Firm Size		422.10 <sup>c</sup>	416.91 <sup>c</sup>	356.35 <sup>c</sup>	352.74 <sup>c</sup>	415.35 <sup>c</sup>	408.97 <sup>c</sup>	352.33 <sup>c</sup>	347.31 <sup>c</sup>	418.63 <sup>c</sup>	412.62 <sup>c</sup>	339.93 <sup>b</sup>	335.93 <sup>b</sup>
		(125.15)	(124.42)	(132.56)	(131.57)	(124.35)	(123.45)	(132.16)	(130.99)	(124.10)	(123.15)	(131.31)	(130.11)
GIM Index		-2.16		1.63		-0.76		2.97		-1.45		2.62	
		(17.35)		(17.63)		(17.21)		(17.54)		(17.16)		(17.41)	
Classified Board			40.36		50.24		46.00		56.47		37.97		50.89
			(87.24)		(87.68)		(86.60)		(87.23)		(86.53)		(86.66)
Industry FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.0777	0.1037	0.1041	0.1437	0.1445	0.1075	0.1081	0.1461	0.147	0.1126	0.113	0.155	0.1557
Adjusted R <sup>2</sup>	0.0731	0.0828	0.0833	0.1006	0.1013	0.082	0.0827	0.0982	0.0992	0.0872	0.0877	0.1077	0.1084
Sample Size	607	397	397	397	397	397	397	397	397	397	397	397	397

Panel B: Total Compensation													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Value	1.62 <sup>c</sup> (0.58)	2.23 <sup>b</sup> (0.88)	2.32 <sup>c</sup> (0.88)	2.00 <sup>b</sup> (0.93)	2.09 <sup>b</sup> (0.93)	2.22 <sup>b</sup> (0.89)	2.32 <sup>c</sup> (0.89)	1.98 <sup>b</sup> (0.94)	2.08 <sup>b</sup> (0.94)	1.75 <sup>a</sup> (0.96)	1.86 <sup>a</sup> (0.96)	1.55 (1.01)	1.66 (1.01)
Firm Value *Dummy(Type II Firm)	-1.34 (1.01)	-1.51 (1.45)	-1.58 (1.45)	-1.42 (1.49)	-1.49 (1.49)	-1.52 (1.46)	-1.59 (1.46)	-1.41 (1.50)	-1.49 (1.50)	-1.31 (1.59)	-1.38 (1.59)	-1.27 (1.62)	-1.34 (1.62)
Firm Value *Dummy(Type I Firm)	-2.20 <sup>c</sup> (0.82)	-3.13 <sup>c</sup> (1.15)	-3.22 <sup>c</sup> (1.15)	-2.98 <sup>b</sup> (1.18)	-3.07 <sup>b</sup> (1.18)	-1.49 (2.38)	-1.56 (2.38)	-1.67 (2.40)	-1.75 (2.41)	0.90 (3.59)	0.88 (3.60)	1.08 (3.64)	1.04 (3.64)
CEO Ownership		-7.10 (24.55)	-9.30 (24.52)	-6.90 (25.09)	-9.42 (25.09)								
Firm Value *Dummy(Block Ownership)						0.51 (8.34)	0.01 (8.35)	2.41 (8.51)	1.81 (8.52)				
Firm Value *Dummy(Type II Firm) *Dummy(Block Ownership)						-1.22 (14.85)	-0.99 (14.88)	-4.27 (15.88)	-4.11 (15.96)				
Firm Value *Dummy(Type I Firm) *Dummy(Block Ownership)						-2.43 (8.68)	-1.97 (8.69)	-3.92 (8.84)	-3.36 (8.85)				
Firm Value *Dummy(High Ownership)										2.63 (2.11)	2.61 (2.12)	2.52 (2.17)	2.50 (2.18)
Firm Value *Dummy(Type II Firm) *Dummy(High Ownership)										-0.90 (3.94)	-0.97 (3.94)	-0.71 (4.06)	-0.77 (4.07)
Firm Value *Dummy(Type I Firm) *Dummy(High Ownership)										-6.40 (4.15)	-6.48 (4.16)	-6.34 (4.20)	-6.41 (4.22)
Controls:													
CEO Age		-49.18 <sup>a</sup> (29.68)	-49.80 <sup>a</sup> (29.72)	-55.17 <sup>a</sup> (31.09)	-55.38 <sup>a</sup> (31.15)	-51.12 <sup>a</sup> (29.47)	-52.11 <sup>a</sup> (29.48)	-57.67 <sup>a</sup> (30.81)	-58.30 <sup>a</sup> (30.85)	-55.45 <sup>a</sup> (29.57)	-56.64 <sup>a</sup> (29.59)	-61.56 <sup>b</sup> (30.88)	-62.43 <sup>b</sup> (30.92)
CEO Tenure		30.53 (28.79)	29.78 (28.87)	32.30 (29.44)	31.51 (29.57)	25.97 (25.03)	23.73 (24.97)	28.13 (25.63)	25.62 (25.59)	25.95 (24.87)	23.66 (24.82)	27.98 (25.51)	25.41 (25.48)
Return on Assets		-3047.14 <sup>b</sup> (1515.82)	-3135.55 <sup>b</sup> (1534.80)	-3136.88 <sup>b</sup> (1549.06)	-3211.53 <sup>b</sup> (1566.92)	-3034.14 <sup>b</sup> (1513.02)	-3148.73 <sup>b</sup> (1529.14)	-3143.60 <sup>b</sup> (1545.95)	-3243.49 <sup>b</sup> (1560.55)	-3011.91 <sup>b</sup> (1508.01)	-3153.79 <sup>b</sup> (1523.93)	-3104.04 <sup>b</sup> (1540.85)	-3231.04 <sup>b</sup> (1555.57)

Panel B: Total Compensation													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Firm Size		1141.64 <sup>a</sup> (593.69)	1200.74 <sup>b</sup> (590.91)	1175.27 <sup>a</sup> (642.42)	1253.60 <sup>a</sup> (638.80)	1196.98 <sup>b</sup> (590.64)	1265.33 <sup>b</sup> (586.87)	1229.92 <sup>a</sup> (640.85)	1322.21 <sup>b</sup> (636.16)	1159.25 <sup>a</sup> (589.47)	1231.60 <sup>b</sup> (585.34)	1201.77 <sup>a</sup> (638.21)	1293.71 <sup>b</sup> (633.26)
GIM Index		89.69 (84.76)		98.43 (87.41)		92.88 (84.10)		102.10 (86.91)		99.59 (83.89)		107.56 (86.47)	
Classified Board			213.88 (417.1)		202.65 (426.94)		239.42 (415.02)		221.48 (425.65)		290.61 (414.85)		276.45 (423.87)
Industry FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.0151	0.0504	0.0483	0.0606	0.058	0.0519	0.0496	0.0617	0.0589	0.0575	0.0552	0.0675	0.0647
Adjusted R <sup>2</sup>	0.0101	0.0279	0.0257	0.0124	0.0096	0.0243	0.022	0.0082	0.0052	0.0301	0.0277	0.0143	0.0113
Sample Size	599	390	390	390	390	390	390	390	390	390	390	390	390

**Table 7 Robustness: Firm Size and Firm Age (Elasticity)**

This table shows the estimates of the pooled models that estimate how different types of firms affect the determinants of CEO compensation, in terms of the absolute level. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. The dependent variable, CEO compensation, is scaled by the natural log. For the explanatory variables, firm value is measured by natural log of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets). Specification (1)-(4) control for (family) firm size and specification (5) and (8) control for (family) firm age (calculated by the difference of the founding year and the sample year), both with a dummy variable that uses median value the threshold. Specification (3), (4), (7), and (8) control for time and industry fixed effects. Industry fixed effects adopt one-digit SIC codes. Panel A displays the estimates for the basic salary and bonus. Panel B shows the estimation results with regard to total compensation that includes value of option grants (TDC1). Standard deviations are reported in the parentheses and the symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> represent statistical significance at the 0.1, 0.05, 0.01 level, respectively.

Panel A: Basic Salary and Bonus								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm Value	0.153 <sup>c</sup> (0.041)	0.154 <sup>c</sup> (0.04)	0.126 <sup>c</sup> (0.042)	0.129 <sup>c</sup> (0.042)	0.174 <sup>c</sup> (0.039)	0.175 <sup>c</sup> (0.039)	0.144 <sup>c</sup> (0.041)	0.145 <sup>c</sup> (0.04)
Firm Value *Dummy(Type II Firm)	-0.016 (0.017)	-0.016 (0.017)	-0.013 (0.017)	-0.015 (0.017)	-0.039 <sup>c</sup> (0.015)	-0.040 <sup>c</sup> (0.015)	-0.034 <sup>b</sup> (0.015)	-0.035 <sup>b</sup> (0.015)
Firm Value *Dummy(Type I Firm)	0.016 (0.018)	0.013 (0.017)	0.019 (0.018)	0.016 (0.017)	0.002 (0.015)	0.001 (0.015)	0.004 (0.015)	0.004 (0.015)
Firm Value *Dummy(Large Firm)	0.018 (0.016)	0.017 (0.016)	0.013 (0.016)	0.011 (0.016)				
Firm Value *Dummy(Type II Firm) *Dummy(Large Firm)	0.004 (0.022)	0.001 (0.022)	-0.002 (0.022)	-0.004 (0.021)				
Firm Value *Dummy(Type I Firm) *Dummy(Large Firm)	-0.013 (0.02)	-0.012 (0.02)	-0.019 (0.02)	-0.016 (0.02)				
Firm Value *Dummy(Old Firm)					-0.008 (0.012)	-0.006 (0.012)	-0.002 (0.012)	0.001 (0.012)
Firm Value *Dummy(Type II Firm) *Dummy(Old Firm)					0.053 <sup>b</sup> (0.021)	0.050 <sup>b</sup> (0.021)	0.040 <sup>a</sup> (0.021)	0.037 <sup>a</sup> (0.021)
Firm Value *Dummy(Type I Firm) *Dummy(Old Firm)					0.011 (0.02)	0.008 (0.02)	0.005 (0.02)	0.002 (0.02)
Controls:								
CEO Ownership	-0.009 <sup>c</sup> (0.003)	-0.008 <sup>b</sup> (0.003)	-0.008 <sup>b</sup> (0.003)	-0.008 <sup>b</sup> (0.003)	-0.009 <sup>b</sup> (0.003)	-0.009 <sup>b</sup> (0.003)	-0.008 <sup>b</sup> (0.003)	-0.008 <sup>b</sup> (0.003)
CEO Age	-0.007 <sup>a</sup> (0.004)	-0.008 <sup>a</sup> (0.004)	-0.007 <sup>a</sup> (0.004)	-0.007 <sup>a</sup> (0.004)	-0.008 <sup>a</sup> (0.004)	-0.008 <sup>a</sup> (0.004)	-0.008 <sup>a</sup> (0.004)	-0.008 <sup>a</sup> (0.004)
CEO Tenure	0.016 <sup>c</sup> (0.004)	0.016 <sup>c</sup> (0.004)	0.015 <sup>c</sup> (0.004)	0.015 <sup>c</sup> (0.004)	0.017 <sup>c</sup> (0.004)	0.017 <sup>c</sup> (0.004)	0.016 <sup>c</sup> (0.004)	0.016 <sup>c</sup> (0.004)
Return on Assets	0.264 (0.229)	0.202 (0.231)	0.287 (0.228)	0.215 (0.23)	0.206 (0.222)	0.142 (0.225)	0.253 (0.222)	0.182 (0.223)
Firm Size	0.578 <sup>c</sup> (0.135)	0.590 <sup>c</sup> (0.134)	0.592 <sup>c</sup> (0.136)	0.605 <sup>c</sup> (0.135)	0.662 <sup>c</sup> (0.095)	0.665 <sup>c</sup> (0.095)	0.614 <sup>c</sup> (0.1)	0.613 <sup>c</sup> (0.098)

Panel A: Basic Salary and Bonus								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GIM Index	0.018 (0.011)		0.015 (0.011)		0.019 <sup>a</sup> (0.011)		0.016 (0.011)	
Classified Board		0.123 <sup>b</sup> (0.055)		0.135 <sup>b</sup> (0.055)		0.126 <sup>b</sup> (0.055)		0.138 <sup>b</sup> (0.055)
Industry FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.3575	0.3607	0.3966	0.4019	0.3646	0.3678	0.4014	0.4069
Adjusted R <sup>2</sup>	0.3415	0.3447	0.3671	0.3726	0.3488	0.352	0.3721	0.3778
Sample Size	494	494	494	494	494	494	494	494

Panel B: Total Compensation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm Value	0.345 <sup>c</sup> (0.049)	0.344 <sup>c</sup> (0.049)	0.328 <sup>c</sup> (0.051)	0.329 <sup>c</sup> (0.051)	0.332 <sup>c</sup> (0.048)	0.331 <sup>c</sup> (0.048)	0.309 <sup>c</sup> (0.05)	0.308 <sup>c</sup> (0.05)
Firm Value *Dummy(Type II Firm)	0.011 (0.021)	0.012 (0.021)	0.007 (0.021)	0.007 (0.021)	-0.028 (0.018)	-0.028 (0.018)	-0.026 (0.018)	-0.026 (0.018)
Firm Value *Dummy(Type I Firm)	-0.009 (0.021)	-0.011 (0.021)	-0.007 (0.021)	-0.009 (0.021)	-0.012 (0.018)	-0.014 (0.018)	-0.008 (0.019)	-0.009 (0.019)
Firm Value *Dummy(Large Firm)	-0.007 (0.02)	-0.007 (0.02)	-0.015 (0.02)	-0.015 (0.02)				
Firm Value *Dummy(Type II Firm) *Dummy(Large Firm)	-0.047 <sup>a</sup> (0.027)	-0.050 <sup>a</sup> (0.027)	-0.048 <sup>a</sup> (0.027)	-0.049 <sup>a</sup> (0.027)				
Firm Value *Dummy(Type I Firm) *Dummy(Large Firm)	-0.016 (0.024)	-0.016 (0.024)	-0.022 (0.024)	-0.022 (0.024)				
Firm Value *Dummy(Old Firm)					-0.020 (0.014)	-0.018 (0.014)	-0.014 (0.015)	-0.012 (0.015)
Firm Value *Dummy(Type II Firm) *Dummy(Old Firm)					0.018 (0.026)	0.016 (0.026)	0.007 (0.026)	0.005 (0.026)
Firm Value *Dummy(Type I Firm) *Dummy(Old Firm)					-0.028 (0.024)	-0.030 (0.024)	-0.038 (0.025)	-0.040 (0.025)
Controls:								
CEO Ownership	-0.012 <sup>c</sup> (0.004)	-0.012 <sup>c</sup> (0.004)	-0.011 <sup>c</sup> (0.004)	-0.011 <sup>c</sup> (0.004)	-0.010 <sup>b</sup> (0.004)	-0.010 <sup>b</sup> (0.004)	-0.008 <sup>b</sup> (0.004)	-0.008 <sup>b</sup> (0.004)
CEO Age	-0.013 <sup>c</sup> (0.005)	-0.013 <sup>c</sup> (0.005)	-0.012 <sup>b</sup> (0.005)	-0.012 <sup>b</sup> (0.005)	-0.011 <sup>b</sup> (0.005)	-0.011 <sup>b</sup> (0.005)	-0.010 <sup>b</sup> (0.005)	-0.010 <sup>b</sup> (0.005)
CEO Tenure	0.018 <sup>c</sup> (0.005)	0.018 <sup>c</sup> (0.005)	0.016 <sup>c</sup> (0.005)	0.016 <sup>c</sup> (0.005)	0.020 <sup>c</sup> (0.005)	0.020 <sup>c</sup> (0.005)	0.019 <sup>c</sup> (0.005)	0.018 <sup>c</sup> (0.005)
Return on Assets	0.140 (0.28)	0.134 (0.283)	0.131 (0.28)	0.110 (0.282)	0.254 (0.273)	0.250 (0.276)	0.252 (0.273)	0.237 (0.276)
Firm Size	0.639 <sup>c</sup> (0.165)	0.654 <sup>c</sup> (0.164)	0.689 <sup>c</sup> (0.168)	0.697 <sup>c</sup> (0.167)	0.517 <sup>c</sup> (0.117)	0.533 <sup>c</sup> (0.116)	0.508 <sup>c</sup> (0.123)	0.515 <sup>c</sup> (0.122)
GIM Index	0.016 (0.014)		0.008 (0.014)		0.020 (0.014)		0.011 (0.014)	

Panel B: Total Compensation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Classified Board		0.043 (0.068)		0.051 (0.068)		0.043 (0.068)		0.046 (0.068)
Industry FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.3523	0.3512	0.3854	0.3857	0.3562	0.3541	0.3861	0.3859
Adjusted R <sup>2</sup>	0.3362	0.335	0.3553	0.3556	0.3402	0.338	0.3561	0.3559
Sample Size	494	494	494	494	494	494	494	494

**Table 8 Robustness: Firm Size and Firm Age (Incremental Value)**

This table shows the estimates of the pooled models that estimate how different types of firms affect the determinants of CEO compensation, in terms of the incremental value. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. The dependent variable, CEO compensation, is scaled by the natural log. For the explanatory variables, firm value is measured by natural log of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets). Specification (1)-(4) control for (family) firm size and specification (5) and (8) control for (family) firm age (calculated by the difference of the founding year and the sample year), both with a dummy variable that uses median value the threshold. Specification (3), (4), (7), and (8) control for time and industry fixed effects. Industry fixed effects adopt one-digit SIC codes. Panel A displays the estimates for the basic salary and bonus. Panel B shows the estimation results with regard to total compensation that includes value of option grants (TDC1). Standard deviations are reported in the parentheses and the symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> represent statistical significance at the 0.1, 0.05, 0.01 level, respectively.

Panel A: Basic Salary and Bonus								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm Value	0.457 (0.492)	0.450 (0.489)	0.369 (0.493)	0.370 (0.49)	0.865 <sup>c</sup> (0.252)	0.861 <sup>c</sup> (0.251)	0.839 <sup>c</sup> (0.256)	0.838 <sup>c</sup> (0.256)
Firm Value *Dummy(Type II Firm)	-0.243 (0.709)	-0.234 (0.709)	-0.167 (0.711)	-0.155 (0.711)	-0.776 <sup>a</sup> (0.451)	-0.774 <sup>a</sup> (0.451)	-0.885 <sup>a</sup> (0.45)	-0.886 <sup>b</sup> (0.45)
Firm Value *Dummy(Type I Firm)	-0.140 (0.717)	-0.152 (0.717)	-0.015 (0.73)	-0.033 (0.729)	-0.755 <sup>b</sup> (0.316)	-0.748 <sup>b</sup> (0.316)	-0.876 <sup>c</sup> (0.319)	-0.873 <sup>c</sup> (0.319)
Firm Value *Dummy(Large Firm)	0.227 (0.527)	0.235 (0.525)	0.299 (0.527)	0.300 (0.525)				
Firm Value *Dummy(Type II Firm) *Dummy(Large Firm)	-0.187 (0.786)	-0.196 (0.785)	-0.383 (0.785)	-0.402 (0.785)				
Firm Value *Dummy(Type I Firm) *Dummy(Large Firm)	-0.034 (0.762)	-0.019 (0.763)	-0.248 (0.774)	-0.229 (0.774)				
Firm Value *Dummy(Old Firm)					-0.421 (0.343)	-0.418 (0.343)	-0.431 (0.343)	-0.427 (0.343)
Firm Value *Dummy(Type II Firm) *Dummy(Old Firm)					0.681 (0.598)	0.682 (0.598)	0.723 (0.594)	0.723 (0.593)
Firm Value *Dummy(Type I Firm) *Dummy(Old Firm)					1.625 <sup>c</sup> (0.491)	1.616 <sup>c</sup> (0.492)	1.741 <sup>c</sup> (0.493)	1.730 <sup>c</sup> (0.493)
Controls:								
CEO Ownership	-2.068 (5.127)	-1.670 (5.12)	-1.794 (5.142)	-1.445 (5.143)	-4.034 (5.057)	-3.749 (5.059)	-3.508 (5.049)	-3.268 (5.056)
CEO Age	-8.489 (6.276)	-8.548 (6.275)	-10.845 <sup>a</sup> (6.457)	-10.973 <sup>a</sup> (6.458)	-7.617 (6.134)	-7.614 (6.133)	-9.966 (6.291)	-10.039 (6.292)
CEO Tenure	7.600 (6.084)	7.428 (6.092)	8.787 (6.114)	8.508 (6.13)	8.805 (6.002)	8.718 (6.013)	9.623 (6.002)	9.446 (6.019)
Return on Assets	-243.942 (317.946)	-270.596 (321.927)	-268.987 (319.945)	-296.792 (323.36)	-207.587 (311.51)	-221.834 (315.784)	-230.361 (312.679)	-248.537 (316.264)
Firm Size	418.273 <sup>c</sup> (125.929)	413.539 <sup>c</sup> (125.07)	351.554 <sup>c</sup> (133.583)	348.321 <sup>c</sup> (132.428)	403.753 <sup>c</sup> (124.326)	399.510 <sup>c</sup> (123.62)	324.920 <sup>b</sup> (131.655)	322.603 <sup>b</sup> (130.681)
GIM Index	-1.199 (17.565)		2.255 (17.831)		-2.986 (17.125)		1.203 (17.346)	
Classified Board		43.540 (87.822)		52.433 (88.225)		19.383 (86.347)		33.344 (86.421)

Panel A: Basic Salary and Bonus								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Industry FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.1044	0.1049	0.1445	0.1453	0.1341	0.1342	0.1783	0.1786
Adjusted R <sup>2</sup>	0.0764	0.077	0.0942	0.095	0.1071	0.1071	0.13	0.1303
Sample Size	397	397	397	397	397	397	397	397

Panel B: Total Compensation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm Value	6.184 <sup>c</sup> (2.323)	6.392 <sup>c</sup> (2.311)	5.918 <sup>b</sup> (2.369)	6.146 <sup>b</sup> (2.358)	2.432 <sup>b</sup> (1.207)	2.508 <sup>b</sup> (1.206)	2.071 (1.256)	2.159 <sup>a</sup> (1.255)
Firm Value *Dummy(Type II Firm)	-5.132 (3.421)	-5.198 (3.423)	-4.806 (3.491)	-4.891 (3.495)	-1.579 (2.191)	-1.678 (2.191)	-1.358 (2.235)	-1.469 (2.236)
Firm Value *Dummy(Type I Firm)	-4.845 (3.442)	-5.061 (3.442)	-5.000 (3.527)	-5.224 (3.528)	-4.433 <sup>c</sup> (1.519)	-4.511 <sup>c</sup> (1.519)	-4.169 <sup>c</sup> (1.565)	-4.252 <sup>c</sup> (1.565)
Firm Value *Dummy(Large Firm)	-4.591 <sup>a</sup> (2.486)	-4.749 <sup>a</sup> (2.48)	-4.597 <sup>a</sup> (2.531)	-4.779 <sup>a</sup> (2.524)				
Firm Value *Dummy(Type II Firm) *Dummy(Large Firm)	4.104 (3.791)	4.103 (3.795)	3.789 (3.854)	3.804 (3.861)				
Firm Value *Dummy(Type I Firm) *Dummy(Large Firm)	2.104 (3.649)	2.268 (3.652)	2.442 (3.738)	2.615 (3.742)				
Firm Value *Dummy(Old Firm)					-0.415 (1.644)	-0.394 (1.647)	-0.189 (1.678)	-0.184 (1.681)
Firm Value *Dummy(Type II Firm) *Dummy(Old Firm)					0.181 (2.933)	0.241 (2.936)	-0.051 (2.974)	0.024 (2.978)
Firm Value *Dummy(Type I Firm) *Dummy(Old Firm)					3.878 (2.355)	3.856 (2.363)	3.552 (2.412)	3.535 (2.419)
Controls:								
CEO Ownership	-10.052 (24.557)	-11.944 (24.5)	-9.329 (25.089)	-11.460 (25.067)	-11.683 (24.639)	-14.146 (24.624)	-10.526 (25.147)	-13.293 (25.158)
CEO Age	-42.254 (29.835)	-42.613 (29.865)	-48.519 (31.267)	-48.541 (31.312)	-48.450 (29.665)	-48.985 (29.702)	-54.454 <sup>a</sup> (31.077)	-54.574 <sup>a</sup> (31.134)
CEO Tenure	30.432 (28.762)	29.743 (28.836)	31.447 (29.435)	30.663 (29.563)	32.469 (28.86)	31.928 (28.951)	32.854 (29.489)	32.279 (29.632)
Return on Assets	-3335.674 <sup>b</sup> (1522.745)	-3415.257 <sup>b</sup> (1540.456)	-3392.708 <sup>b</sup> (1555.651)	-3464.520 <sup>b</sup> (1572.19)	-2905.097 <sup>a</sup> (1515.574)	-2961.737 <sup>a</sup> (1535.099)	-2986.914 <sup>a</sup> (1549.745)	-3041.581 <sup>a</sup> (1568.022)
Firm Size	1210.389 <sup>b</sup> (594.23)	1262.049 <sup>b</sup> (590.79)	1275.330 <sup>b</sup> (643.951)	1344.129 <sup>b</sup> (639.422)	1098.989 <sup>a</sup> (596.585)	1157.417 <sup>a</sup> (594.14)	1098.986 <sup>a</sup> (648.096)	1178.167 <sup>a</sup> (644.872)
GIM Index	73.990 (85.041)		82.023 (87.724)		85.978 (84.664)		97.034 (87.334)	
Classified Board		176.703 (417.548)		173.082 (427.627)		156.296 (417.605)		163.790 (427.259)
Industry FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	No	No	Yes	Yes	No	No	Yes	Yes
R <sup>2</sup>	0.0609	0.0595	0.0706	0.0688	0.0611	0.0589	0.0704	0.0676
Adjusted R <sup>2</sup>	0.0311	0.0296	0.0149	0.013	0.0312	0.0289	0.0146	0.0117
Sample Size	390	390	390	390	390	390	390	390



**Table 9 Robustness: Firm Type (Elasticity)**

This table shows the estimates of the separate models that estimate how different types of firms affect the determinants of CEO compensation, in terms of the absolute level. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. The dependent variable, CEO compensation, is scaled by the natural log. For the explanatory variables, firm value is measured by natural log of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets). Specification (1)-(3) use OLS estimation, while (4) and (5) control for time and industry fixed effects. Specification (6) and (7) use fixed effects panel estimation. Panel A displays the estimates for the basic salary and bonus. Panel B shows the estimation results with regard to total compensation that includes value of option grants (TDC1). Standard deviations are reported in the parentheses and the symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> represent statistical significance at the 0.1, 0.05, 0.01 level, respectively.

		Panel A: Basic Salary and Bonus						
	Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Firm Value	I	0.296 <sup>c</sup> (0.046)	-0.263 <sup>c</sup> (0.087)	-0.247 <sup>c</sup> (0.088)	-0.274 <sup>c</sup> (0.096)	-0.267 <sup>c</sup> (0.094)	0.306 <sup>b</sup> (0.129)	0.313 <sup>b</sup> (0.13)
	II	0.313 <sup>c</sup> (0.046)	0.157 <sup>a</sup> (0.084)	0.147 <sup>a</sup> (0.084)	0.139 (0.094)	0.126 (0.092)	0.342 <sup>c</sup> (0.104)	0.342 <sup>c</sup> (0.103)
	III	0.359 <sup>c</sup> (0.033)	0.232 <sup>c</sup> (0.047)	0.224 <sup>c</sup> (0.048)	0.177 <sup>c</sup> (0.049)	0.174 <sup>c</sup> (0.05)	0.517 <sup>c</sup> (0.11)	0.514 <sup>c</sup> (0.109)
CEO Ownership	I		-0.016 <sup>c</sup> (0.004)	-0.011 <sup>c</sup> (0.004)	-0.013 <sup>c</sup> (0.004)	-0.009 <sup>b</sup> (0.004)	-0.001 (0.016)	-0.004 (0.016)
	II		0.054 (0.051)	0.061 (0.051)	0.077 (0.056)	0.079 (0.056)	-0.008 (0.086)	-0.008 (0.085)
	III		-0.052 <sup>a</sup> (0.026)	-0.054 <sup>b</sup> (0.027)	-0.073 <sup>c</sup> (0.026)	-0.075 <sup>c</sup> (0.027)	-0.080 <sup>a</sup> (0.047)	-0.078 (0.047)
Controls:	I		-0.012 <sup>a</sup> (0.007)	-0.011 <sup>a</sup> (0.007)	-0.014 <sup>b</sup> (0.007)	-0.014 <sup>b</sup> (0.007)	0.002 (0.026)	0.006 (0.025)
	II		-0.009 (0.009)	-0.010 (0.009)	-0.007 (0.01)	-0.007 (0.01)	-0.003 (0.012)	-0.003 (0.012)
	III		0.002 (0.006)	0.001 (0.006)	0.003 (0.005)	0.003 (0.006)	0.006 (0.01)	0.007 (0.01)
CEO Tenure	I		0.023 <sup>c</sup> (0.005)	0.016 <sup>c</sup> (0.005)	0.022 <sup>c</sup> (0.005)	0.016 <sup>c</sup> (0.005)	-0.006 (0.01)	-0.006 (0.01)
	II		0.023 (0.017)	0.022 (0.017)	0.012 (0.022)	0.012 (0.022)	0.086 <sup>c</sup> (0.028)	0.086 <sup>c</sup> (0.028)
	III		0.018 <sup>c</sup> (0.006)	0.017 <sup>b</sup> (0.007)	0.017 <sup>c</sup> (0.006)	0.016 <sup>b</sup> (0.006)	0.009 (0.016)	0.010 (0.016)
Return on Assets	I		4.252 <sup>c</sup> (0.7)	3.954 <sup>c</sup> (0.708)	3.962 <sup>c</sup> (0.863)	3.782 <sup>c</sup> (0.841)	1.513 <sup>a</sup> (0.823)	1.583 <sup>a</sup> (0.824)
	II		-0.680 <sup>a</sup> (0.361)	-0.629 <sup>a</sup> (0.375)	-0.783 <sup>b</sup> (0.369)	-0.785 <sup>b</sup> (0.376)	0.194 (0.689)	0.197 (0.68)
	III		0.190 (0.292)	0.176 (0.302)	0.453 (0.284)	0.420 (0.291)	0.328 (0.699)	0.289 (0.697)
Firm Size	I		1.391 <sup>c</sup> (0.199)	1.353 <sup>c</sup> (0.2)	1.217 <sup>c</sup> (0.226)	1.188 <sup>c</sup> (0.219)	0.242 (0.438)	0.226 (0.44)
	II		0.855 <sup>c</sup> (0.205)	0.869 <sup>c</sup> (0.208)	1.075 <sup>c</sup> (0.241)	1.085 <sup>c</sup> (0.241)	0.027 (0.439)	0.020 (0.412)
	III		0.394 <sup>c</sup> (0.118)	0.496 <sup>c</sup> (0.117)	0.378 <sup>c</sup> (0.121)	0.460 <sup>c</sup> (0.121)	-0.138 (0.38)	-0.058 (0.369)
GIM Index	I		-0.059 <sup>b</sup> (0.024)		-0.028 (0.027)		0.050 (0.046)	
	II		0.027 (0.025)		0.019 (0.026)		-0.003 (0.062)	

Panel A: Basic Salary and Bonus								
	Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	III		0.050 <sup>c</sup> (0.013)		0.047 <sup>c</sup> (0.013)		0.047 (0.054)	
	I			0.241 <sup>b</sup> (0.1)		0.292 <sup>c</sup> (0.098)		0.180 (0.183)
Classified Board	II			0.011 (0.149)		0.083 (0.15)		
	III			0.082 (0.07)		0.116 <sup>a</sup> (0.069)		
Year		No	No	No	Yes	Yes	No	No
Industry		No	No	No	Yes	Yes	No	No
Firm		No	No	No	No	No	Yes	Yes
Adjusted R <sup>2</sup> /F	I	0.1519	0.4735	0.4733	0.4908	0.5198	6.15	6.09
Statistics	II	0.2126	0.332	0.3239	0.3664	0.3645	6.79	8.07
	III	0.2389	0.4109	0.3794	0.4658	0.4432	10.29	11.89
Sample Size	I	225	144	144	144	144	144	144
	II	171	101	101	101	101	101	101
	III	384	249	249	249	249	249	249

Panel B: Total Compensation								
	Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Firm Value	I	0.414 <sup>c</sup> (0.055)	-0.077 (0.111)	-0.080 (0.113)	-0.062 (0.125)	-0.064 (0.126)	0.421 <sup>b</sup> (0.177)	0.435 <sup>b</sup> (0.178)
	II	0.360 <sup>c</sup> (0.053)	0.187 <sup>b</sup> (0.086)	0.161 <sup>a</sup> (0.084)	0.127 (0.091)	0.109 (0.086)	0.295 (0.198)	0.296 (0.196)
	III	0.527 <sup>c</sup> (0.042)	0.492 <sup>c</sup> (0.064)	0.486 <sup>c</sup> (0.065)	0.481 <sup>c</sup> (0.068)	0.479 <sup>c</sup> (0.068)	0.536 <sup>c</sup> (0.145)	0.535 <sup>c</sup> (0.145)
CEO Ownership	I		-0.020 <sup>c</sup> (0.005)	-0.017 <sup>c</sup> (0.005)	-0.019 <sup>c</sup> (0.005)	-0.016 <sup>c</sup> (0.005)	-0.012 (0.022)	-0.015 (0.022)
	II		0.045 (0.052)	0.071 (0.052)	0.087 (0.053)	0.112 <sup>b</sup> (0.052)	-0.076 (0.164)	-0.077 (0.162)
	III		-0.007 (0.028)	-0.006 (0.028)	-0.024 (0.029)	-0.025 (0.029)	-0.041 (0.041)	-0.040 (0.041)
CEO Age	I		-0.021 <sup>b</sup> (0.008)	-0.022 <sup>c</sup> (0.008)	-0.019 <sup>b</sup> (0.009)	-0.021 <sup>b</sup> (0.009)	-0.047 (0.036)	-0.049 (0.035)
	II		-0.010 (0.009)	-0.011 (0.009)	-0.011 (0.009)	-0.012 (0.009)	0.022 (0.023)	0.022 (0.023)
	III		-0.005 (0.007)	-0.006 (0.008)	-0.004 (0.007)	-0.006 (0.008)	0.017 (0.013)	0.017 (0.013)
CEO Tenure	I		0.030 <sup>c</sup> (0.007)	0.026 <sup>c</sup> (0.007)	0.029 <sup>c</sup> (0.007)	0.026 <sup>c</sup> (0.007)	0.000 (0.014)	0.000 (0.014)
	II		0.005 (0.018)	0.002 (0.017)	-0.009 (0.021)	-0.014 (0.021)	0.024 (0.054)	0.024 (0.053)
	III		0.011 (0.008)	0.010 (0.009)	0.006 (0.009)	0.006 (0.009)	-0.008 (0.02)	-0.007 (0.02)
Return on Assets	I		3.631 <sup>c</sup> (0.889)	3.569 <sup>c</sup> (0.913)	2.670 <sup>b</sup> (1.115)	2.685 <sup>b</sup> (1.131)	0.794 (1.133)	0.846 (1.128)
	II		-0.147 (0.373)	0.167 (0.376)	-0.246 (0.354)	-0.033 (0.351)	0.436 (1.315)	0.422 (1.296)
	III		-0.102 (0.397)	-0.116 (0.402)	0.080 (0.394)	0.041 (0.396)	0.341 (0.925)	0.327 (0.92)
Firm Size	I		1.125 <sup>c</sup> (0.253)	1.117 <sup>c</sup> (0.257)	0.917 <sup>c</sup> (0.292)	0.880 <sup>c</sup> (0.294)	0.697 (0.602)	0.664 (0.602)

		Panel B: Total Compensation						
Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
	II	0.510 <sup>b</sup>	0.600 <sup>c</sup>	0.890 <sup>c</sup>	0.975 <sup>c</sup>	0.424	0.457	
		(0.212)	(0.209)	(0.232)	(0.225)	(0.835)	(0.779)	
	III	0.335 <sup>b</sup>	0.403 <sup>b</sup>	0.325 <sup>a</sup>	0.360 <sup>b</sup>	0.544	0.569	
		(0.161)	(0.157)	(0.169)	(0.165)	(0.509)	(0.493)	
	I	-0.063 <sup>b</sup>		-0.060 <sup>a</sup>		0.029		
		(0.031)		(0.035)		(0.063)		
GIM	II	0.034		0.013		0.014		
Index		(0.028)		(0.027)		(0.119)		
	III	0.037 <sup>b</sup>		0.032 <sup>a</sup>		0.015		
		(0.018)		(0.018)		(0.072)		
	I		0.018		0.050		0.212	
			(0.129)		(0.132)		(0.251)	
Classified	II		-0.345 <sup>b</sup>		-0.297 <sup>b</sup>			
Board			(0.151)		(0.141)			
	III		0.087		0.148			
			(0.093)		(0.094)			
Year		No	No	No	Yes	Yes	No	
Industry		No	No	No	Yes	Yes	No	
Firm		No	No	No	No	No	Yes	
Adjusted	I	0.1996	0.4061	0.3881	0.405	0.3924	4.27	
R <sup>2</sup> / F	II	0.2105	0.2143	0.2453	0.3557	0.387	1.28	
Statistics	III	0.2876	0.3975	0.3897	0.4311	0.43	9.42	
	I	223	144	144	144	144	144	
Sample	II	168	99	99	99	99	99	
Size	III	387	251	251	251	251	251	

**Table 10 Robustness: Firm Type (Incremental value)**

This table shows the estimates of the separate models that estimate how different types of firms affect the determinants of CEO compensation, in terms of the incremental value. Type I firm is active family-controlled firm: i.e. controlled by family stake and run by family CEO; Type II firm is passive family-controlled firm: i.e. controlled by family stake and run by professional (outside) CEO; Type III firm is non-family firm: i.e. no family stake and run by professional (outside) CEO. The dependent variable, CEO compensation, uses the first order difference. For the explanatory variables, firm value is measured by the incremental value of market capitalization. Return on assets is a ratio of EBIT (earnings before interest and tax) to total assets, and firm size is measured by log(total assets). Specification (1)-(3) use OLS estimation, while (4) and (5) control for time and industry fixed effects. Specification (6) and (7) use fixed effects panel estimation. Panel A displays the estimates for the basic salary and bonus Panel B shows the estimation results with regard to total compensation that includes value of option grants (TDC1). Standard deviations are reported in the parentheses and the symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> represent statistical significance at the 0.1, 0.05, 0.01 level, respectively.

Panel A: Basic Salary and Bonus								
	Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Firm Value	I	0.578 <sup>c</sup> (0.153)	0.387 <sup>a</sup> (0.229)	0.336 (0.232)	0.234 (0.262)	0.152 (0.263)	0.571 (0.353)	0.571 (0.349)
	II	0.568 <sup>c</sup> (0.103)	0.326 <sup>c</sup> (0.121)	0.313 <sup>b</sup> (0.122)	0.399 <sup>c</sup> (0.139)	0.388 <sup>c</sup> (0.142)	0.340 <sup>a</sup> (0.172)	0.357 <sup>b</sup> (0.17)
	III	0.586 <sup>c</sup> (0.131)	0.672 <sup>c</sup> (0.208)	0.697 <sup>c</sup> (0.208)	0.609 <sup>c</sup> (0.229)	0.638 <sup>c</sup> (0.228)	0.671 <sup>b</sup> (0.315)	0.674 <sup>b</sup> (0.314)
CEO Ownership	I		-3.591 (7.178)	0.613 (7.337)	-1.496 (7.565)	2.898 (7.733)	47.815 (80.563)	46.231 (81.197)
	II		100.762 <sup>c</sup> (34.537)	97.399 <sup>c</sup> (34.562)	125.370 <sup>c</sup> (37.792)	117.405 <sup>c</sup> (38.085)	-69.338 (92.12)	-71.839 (91.883)
	III		-60.069 (38.462)	-58.095 (38.688)	-44.642 (40.528)	-41.629 (40.497)	-38.980 (82.002)	-38.903 (81.68)
Controls:	I		-12.785 (12.172)	-13.199 (12.415)	-18.674 (13.155)	-20.826 (13.224)	-55.538 (131.139)	-57.784 (126.754)
	II		-5.266 (5.805)	-5.227 (5.846)	-1.658 (6.511)	-1.774 (6.625)	-2.118 (15.553)	-1.935 (15.519)
	III		-5.724 (10.26)	-6.825 (10.422)	-5.638 (10.612)	-7.094 (10.765)	14.144 (25.979)	14.183 (25.877)
CEO Tenure	I		13.760 (9.779)	8.376 (10.086)	14.360 (9.889)	9.486 (10.184)	-18.182 (55.951)	-18.600 (55.961)
	II		-23.465 <sup>b</sup> (11.421)	-22.947 <sup>b</sup> (11.469)	-30.848 <sup>b</sup> (15.115)	-29.185 <sup>a</sup> (15.319)	26.076 (32.846)	29.607 (32.55)
	III		16.129 (12.32)	14.971 (12.436)	13.338 (12.795)	12.363 (12.78)	9.496 (40.136)	9.876 (39.962)
Return on Assets	I		837.232 (1047.359)	597.838 (1075.58)	736.348 (1284.18)	778.729 (1299.631)	2034.685 (2890.452)	2083.471 (2905.627)
	II		-407.322 <sup>a</sup> (216.804)	-385.563 <sup>a</sup> (224.09)	-446.107 <sup>a</sup> (223.75)	-447.160 <sup>a</sup> (230.539)	333.103 (718.611)	549.716 (677.267)
	III		-366.874 (513.192)	-394.902 (519.209)	-263.360 (524.834)	-312.381 (527.473)	1046.976 (1542.398)	1039.801 (1536.202)
Firm Size	I		647.678 <sup>b</sup> (289.061)	674.824 <sup>b</sup> (294.65)	670.575 <sup>b</sup> (320.71)	652.001 <sup>b</sup> (324.371)	671.079 (1736.515)	677.176 (1735.248)
	II		512.708 <sup>c</sup> (115.776)	521.631 <sup>c</sup> (118.209)	674.031 <sup>c</sup> (139.361)	667.428 <sup>c</sup> (143.481)	-384.086 (633.992)	-727.208 (510.845)
	III		156.144 (195.384)	222.450 (191.514)	103.587 (213.336)	144.063 (209.228)	-660.021 (786.788)	-594.846 (759.958)
GIM Index	I		-92.464 <sup>b</sup> (45.582)		-85.958 (53.359)		18.304 (301.748)	
	II		-19.409 (16.04)		-24.749 (16.344)		-85.968 (93.7)	

Panel A: Basic Salary and Bonus								
	Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	III		41.872 (25.854)		35.645 (27.024)		81.917 (241.566)	
Classified Board	I			86.024 (191.887)		123.578 (198.947)		152.241 (936.518)
	II			-80.131 (97.407)		-69.845 (103.243)		
	III			77.698 (130.055)		128.105 (135.754)		
Year		No	No	No	Yes	Yes	No	No
Industry		No	No	No	Yes	Yes	No	No
Firm		No	No	No	No	No	Yes	Yes
Adjusted R <sup>2</sup> / F Statistics	I	0.073	0.1063	0.0727	0.103	0.0825	0.74	0.74
	II	0.1813	0.2925	0.2854	0.297	0.2784	1.42	1.52
	III	0.0572	0.0757	0.0651	0.0886	0.0845	1	1.15
Sample Size	I	169	112	112	112	112	112	112
	II	133	85	85	85	85	85	85
	III	313	205	205	205	205	205	205

Panel B: Total Compensation								
	Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Firm Value	I	-0.492 (0.824)	0.821 (1.28)	0.758 (1.272)	0.999 (1.46)	0.803 (1.456)	2.934 (1.757)	2.936 <sup>a</sup> (1.737)
	II	0.252 (0.479)	0.910 (0.566)	0.964 <sup>a</sup> (0.571)	1.391 <sup>b</sup> (0.667)	1.428 <sup>b</sup> (0.675)	0.081 (1.127)	0.379 (1.1)
	III	1.679 <sup>c</sup> (0.565)	1.997 <sup>b</sup> (0.852)	2.086 <sup>b</sup> (0.854)	1.524 (0.951)	1.642 <sup>a</sup> (0.948)	1.785 (1.266)	1.819 (1.267)
CEO Ownership	I		-10.554 (40.553)	-10.044 (40.528)	-26.211 (42.808)	-22.107 (43.346)	-626.072 (403.617)	-637.317 (406.463)
	II		170.619 (158.562)	177.385 (159.28)	180.565 (174.185)	186.606 (175.198)	-1255.561 <sup>b</sup> (545.603)	-1306.242 <sup>b</sup> (546.131)
	III		-152.988 (158.573)	-146.764 (159.207)	-131.044 (168)	-119.081 (167.812)	5.168 (329.65)	6.204 (330.048)
CEO Age	I		-68.772 (67.886)	-72.476 (67.998)	-37.312 (73.515)	-51.198 (73.541)	-267.893 (712.617)	-281.324 (686.268)
	II		-21.541 (27.6)	-21.387 (27.767)	-46.640 (30.93)	-45.845 (31.158)	-73.954 (94.014)	-69.787 (94.35)
	III		-58.801 (42.122)	-64.054 (42.735)	-61.919 (44.007)	-67.911 (44.694)	-52.034 (104.436)	-51.513 (104.561)
CEO Tenure	I		67.390 (54.675)	68.766 (55.561)	74.384 (55.45)	72.759 (56.942)	175.264 (282.636)	172.337 (282.782)
	II		-39.499 (53.088)	-39.818 (53.296)	0.613 (70.272)	2.395 (70.871)	465.582 <sup>b</sup> (191.704)	497.651 <sup>b</sup> (190.432)
	III		5.613 (50.539)	2.982 (50.919)	-1.353 (52.96)	-5.157 (52.886)	42.539 (161.345)	47.630 (161.477)
Return on Assets	I		-20160.10 <sup>c</sup> (6232.637)	-19882.41 <sup>c</sup> (6268.233)	-18742.32 <sup>b</sup> (7314.996)	-18038.35 <sup>b</sup> (7352.484)	12064.760 (15251)	12363.590 (15295.15)
	II		-732.436 (1004.844)	-799.012 (1032.356)	-764.070 (1037.102)	-835.831 (1055.937)	2903.523 (5668.093)	3080.445 (5690.541)
	III		-1739.350 (2105.755)	-1890.379 (2127.004)	-1473.233 (2173.938)	-1673.617 (2185.621)	1281.539 (6200.441)	1185.525 (6207.367)
Firm Size	I		1363.569 (1610.977)	1356.451 (1612.074)	1957.889 (1805.193)	1729.299 (1814.2)	-458.850 (10330.94)	-414.174 (10327.87)

		Panel B: Total Compensation						
Firm Type	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
II		1016.684 <sup>a</sup>	993.303 <sup>a</sup>	932.296	907.723	-868.249	-3762.712	
		(532.627)	(542.474)	(642.103)	(654.183)	(4099.015)	(3222.158)	
	III	1214.941	1434.856 <sup>a</sup>	1118.862	1277.954	-63.890	808.163	
I		(801.603)	(784.09)	(883.69)	(866.422)	(3162.889)	(3070.781)	
		-144.547		-390.845		152.752		
		(257.425)		(297.58)		(1537.177)		
GIM Index	II	64.527		70.811		-685.253		
		(81.441)		(83.401)		(604.012)		
	III	152.817		143.353		1096.044		
I		(106.596)		(112.407)		(971.095)		
			-543.322		-898.603		1098.543	
			(1054.463)		(1109.716)		(4648.804)	
Classified Board	II		224.041		285.654			
			(456.36)		(476.199)			
	III		402.882		527.334			
Year			(535.495)		(566.703)			
	No	No	No	Yes	Yes	No	No	
	No	No	No	Yes	Yes	No	No	
Industry Firm	No	No	No	No	No	Yes	Yes	
	Adjusted	I	-0.0039	0.0513	0.0509	0.0438	0.033	1.18
	R <sup>2</sup> /F	II	-0.0057	0.0463	0.0412	0.0537	0.0485	1.81
Statistics	III	0.0245	0.0441	0.0369	0.0406	0.0368	0.69	
	I	166	110	110	110	110	110	
	Sample Size	II	129	81	81	81	81	81
	III	312	204	204	204	204	204	