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Different pay-performance sensitivity in family firms: A perspective of the family incentive alignment hypothesis
家族企業的不同薪酬績效敏感性：家族誘因連結假說觀點

Yi-Hui Tai [1]
Department of Accounting, College of Management, Ming Chuan University

Abstract: This research uses Taiwanese listed family firms from 2012 to 2016 as the data to examine whether the compensation of non-family managers is more sensitive to firm performance than that of family managers. In addition, this research tests the moderating effect of family member ownership and considers the impacts of company performance as well as different measurements for such performance on the aforementioned issues. This study finds that the compensation of non-family managers is less sensitive to firm performance than that of family managers, but if the percentage of family members' shareholdings is higher, then the compensation of non-family managers is more sensitive to firm performance than that of family managers. Furthermore, better company performance also causes the compensation of non-family managers to be more sensitive to firm performance than that of family managers. The results of this study complement the existing family firm literature and serve as a reference for practitioners.

Keywords: Family firm, pay-performance sensitivity, family/non-family manager, family member ownership, family incentive alignment hypothesis.

摘要：本研究以台灣 2012 年至 2016 年的上市櫃家族企業為研究樣本。本研究探討家族企業的非家族成員經理人的薪酬績效敏感性是否比家族成員經

[1] Corresponding author: Yi-Hui Tai, Department of Accounting, College of Management, Ming Chuan University. Email: yhtai@mail.mcu.edu.tw.

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理人更敏感，本研究並進一步測試家族成員持股之調節效果。本研究也考量公司績效表現好壞，及更改公司績效指標對於前述議題之影響。本研究發現非家族成員經理人的薪酬績效敏感性比家族成員經理人較不敏感。然而，當家族成員持股比例越高，則非家族成員經理人的薪酬績效敏感性比家族成員經理人更敏感。再者，當公司績效表現較好時，也會讓非家族成員經理人的薪酬績效敏感性比家族成員經理人更敏感。本文研究結果可以補充家族企業相關文獻的不足並作為實務界參考之用。

關鍵詞：家族企業、薪酬績效敏感性、家族成員/非家族成員經理人、家族成員持股、家族誘因連結假說

1. Introduction

Shleifer and Vishny (1986) state that a family firm is a business organization consisting of a small group of large shareholders and many minority shareholders, and that under this construction the conflict between shareholders and managers, called the “traditional agency problem”, is not obvious. However, controlling shareholders may indeed use their controlling rights to plunder those of minority shareholders and hence generate the “core agency problem”. In other words, in family firms there is less chance of the traditional agency problem (Anderson and Reeb, 2003a; Claessens *et al.*, 2000; Gomez-Mejia *et al.*, 2003; La Porta *et al.*, 1999), which runs in contrast to the business practices of non-family firms, thus potentially increasing the conflict between majority and minority shareholders (Peng and Jiang, 2010; Young *et al.*, 2008) and implying the agency problems of family firms differ from those of non-family firms.

The literature offers many studies on family firms (Ali *et al.*, 2007; Anderson and Reeb, 2003b; Fan *et al.*, 2007; Kuo and Wang, 2017; Lin *et al.*, 2011; Wang, 2006), but most focus on the association between family firm characteristics and firm performance (i.e., Anderson and Reeb, 2003b; Demsetz, 1983; Dyer, 2006; Kuo and Wang, 2017; Lin *et al.*, 2011; Maury, 2006). Only a few researchers have explored the issue of remuneration, such as Tabor *et al.* (2018), with the literature generally suggesting that a better remuneration

contract may mitigate the agency problem (Andreas *et al.*, 2010; Jensen and Meckling, 1976) and help a firm achieve better performance (Bender, 2007; Cheng and Firth, 2005; Kaplan, 1994; Murphy, 1985). An optimal compensation contract is important, because it affects not only shareholders' interests, but also national economic stability (Luo, 2015). For instance, an inappropriate reward scheme for bank managers has been blamed as a fundamental cause of the 2008-2009 global financial crisis (Blinder, 2009; Fahlenbrach and Stulz, 2011). Therefore, exploring the relationship between remuneration and a family firm's performance and finding the moderator variables that affect this relationship are topics that merit further attention.

Managerial compensation has attracted a great deal of attention from the management literature. For the past several decades, many scholars have investigated whether executive pay is sensitive to firm performance and the moderating variables that affect pay-performance sensitivity (PPS). In contrast to the abundant literature on executive compensation of listed firms, there has been little effort put forth to examine compensation in a common corporate organizational form: the family firm. La Porta *et al.* (1999) note in rich countries of the world that if 20% voting rights are set as the threshold, then 30% of large companies are denoted as being family controlled; this data point moves up to even as high as 45% if they include medium-sized firms. Targeting nine East Asian countries, Claessens *et al.* (2000) present in more than half of all firms in those 9 economies that the main controlling shareholders are families. Yeh *et al.* (2001) also state that 76% of Taiwanese-listed companies are controlled by families, while Kuo and Wang (2017) indicate that 67% of TWSE/TPEx-listed companies in Taiwan are family firms from 1996 to 2010. Therefore, as family firms in the world make up an important corporate organization form and few studies examine their PPS, this present research thus takes Taiwanese family firms as the data samples to explore family firms' PPS.

Past research has explored the benefits and costs of family involvement in family firms, presenting several conditions that benefit minority shareholders; i.e., founder family CEO (Anderson and Reeb, 2003b, 2004; Claessens *et al.*,

2002; Maury, 2006; Villalonga and Amit, 2006; Yeh and Woidtke, 2005). However, prior papers generally focus on the positions held by family members. Villalonga and Amit (2009) and Yeh and Woidtke (2005) use a more comprehensive approach to examine the effect of family involvement and show that controlling families can take advantage of their indirect shareholdings compared to those held by family members, but these two papers do not differentiate the impacts between family members and family representatives. Chen *et al.* (2013) extend this line of research and target family representatives, because they are not family members, but do have closer ties to the controlling family. The findings of Chen *et al.* (2013) note that family representatives are associated with net costs to shareholders, but the cost level is less than that of family members, implying the purposes for controlling families to use family members and family representatives are different. Extending Chen *et al.* (2013), my study investigates the PPS of non-family managers and that of family managers.

Managers who are company founders or who are family members or who are relatives of family members may have incentives for turning up firm value that differ from other managers. They may also have a multigenerational viewpoint toward the development of the family firm and may derive non-pecuniary benefits from their work; i.e., family firms may provide them with higher status in the community. Considering such incentives, an examination of family managers' compensation and non-family managers' compensation offers an opportunity to test some of the implications of the agency theory with respect to compensation incentives. Thus, this study extends the literature by examining family managers and non-family managers of family firms in Taiwan. In summary, the aim of this paper is to investigate whether the compensations of family managers and non-family managers have different sensitivities to firm performance in the family firm.

The results of McConaughy (2000) present that family-member CEOs receive less pay and fewer pay-based incentives than do non-family CEOs based on the family incentive alignment hypothesis. This means managers who are

family members may have incentives for promoting firm value that differ from other managers. For example, they may operate companies efficiently, because of their family ties, implying they focus on the firm's long-term value. In addition, the family firm provides family managers with incentives through not only share ownership, but also via quasi-rents that may be available only to family members (McConaughy, 2000). In other words, in family firms the compensation incentive for family managers differs from that of non-family managers, implying the compensation levels of family mangers are less than that of non-family managers, and that the compensation incentives of family mangers are fewer than that of non-family managers. Taken together, family managers are intimately tied to family firms, and so they have less need for compensation-based incentives. Therefore, the first purpose of this research is to examine whether the compensation of non-family managers is more sensitive to firm performance than that of family managers.

According to the characteristics of my samples, family firms account for 58% of all listed companies during the research period, but of the total shareholdings of family members, 45% hold family firms' stocks and 55% hold non-family firms' stocks. This means that family members also own shares in non-family listed companies. In addition, high ownership concentration creates a greater incentive to monitor and control corporate decisions more widely and more effectively (Chau and Gray, 2002; Chen *et al.*, 2008; Chrisman *et al.*, 2004), implying that if family member ownership is higher, then family managers or family owners have a greater incentive to avoid actions to damage their reputation or that of the firm (Block, 2010; Sharma *et al.*, 1997). This means the percentage of family member ownership impacts the PPS of both family managers and non-family managers in a family firm. Therefore, the second purpose of this research is to explore the moderating effect of the percentage of family members' shareholdings.

McConaughy (2000) correlates the most with my present study, but there are four differences between the two. First, McConaughy (2000) examines whether family CEOs have superior incentives over non-family CEOs for

maximizing firm value and therefore do not need more compensation-based incentives. Thus, the objective of McConaughy (2000) is the CEO, but my paper's target is the top management team (TMT), including general managers and vice presidents. According to prior studies, such as Hambrick and Finkelstein (1987) and Pfeffer and Salancik (1978), the success of a company cannot rely solely on the CEO, but also on the whole TMT and their cooperation between each other, by internally formulating strategies or externally representing the company and negotiating with other organizations. When analyzing the varied impacts of senior executives on business operations, it is thus more appropriate to discuss the overall characteristics of TMT than to discuss individual executives, such as CEO (Hambrick, 1994, 2007).

Second, I further explore the moderating effect of the percentage of family members' shareholdings, while McConaughy (2000) does not. Based on my samples, while family firms account for 58% of all listed companies, the percentage of family members' shareholdings in their family firms only make up 45% of total family members' shareholdings. In other words, family members do not just hold stocks in their family firms, and so "family firm" does not equal "family members' shareholdings". Therefore, exploring the moderating effect of the percentage of family members' shareholdings presents additional contributions.

Third, the sample data of McConaughy (2000) are close to 30 years old on average, and CEO compensation practices have shifted to higher proportions of incentive pay than in the past. Those results should not suggest what family firms may face today. In other words, CEO or TMT compensation levels have risen dramatically over the past several decades, and there may be even larger differences between family and non-family CEO or TMT compensation schemes. Hence, my findings provide updated evidence about the PPS of family managers and non-family managers in family firms.

Fourth, the samples of McConaughy (2000) are only 82 founding-family-controlled firms in the U.S., among which 47 CEOs are members of the founding family and 35 are not. However, my sample covers 956

firms in Taiwan, which is far greater than the sample of McConaughy (2000). In addition, family firms in the U.S. are not so prevalent like they are in Taiwan, and therefore taking Taiwanese family firms as samples are more representative of this line of research. To summarize the above discussions, my study is different from McConaughy (2000) and offers new findings and contributions to the related literature.

This study takes TWSE/TPEx-listed family firms in Taiwan from 2012 to 2016 as data samples and defines the measurement of company performance by return on equity (ROE). The results show that the compensation of non-family managers is less sensitive to firm performance than that of family managers. However, if the percentage of family members' shareholdings is higher, then the compensation of non-family managers is more sensitive to firm performance than that of family managers. Furthermore, better company performance also leads to the compensation of non-family managers to be more sensitive to firm performance than that of family managers.

Because the core agency problem of family firms is different from the traditional agency problem of non-family firms, exploring the optimal compensation contract is an important topic. This paper examines the PPS of family managers and non-family managers in Taiwanese family firms, and the results herein can serve as a supplement to related literature and be a reference for designing compensation contracts, which is the study's first contribution.

The second contribution is to illustrate how to enhance the PPS of family managers and non-family managers in family firms, which can form a blueprint for family firms designing compensation contracts. Based on the findings, increasing the proportion of family member ownership or enhancing company performance can enhance the PPS of non-family managers in family firms.

Third, most studies look at family member involvement (e.g., Anderson and Reeb, 2004; Fiegener, 2010; Villalonga and Amit, 2006), but scant studies explore the "indirect" effect of a family member. My paper extends this line of research, because in this study I ask one important question: Does the compensation of family managers (with "direct" effect of family member) and

non-family managers (with "indirect" effect of family member) have different sensitivities to firm performance in the family firm? I find that if the proportion of family member ownership is higher or company performance is better, then the compensation of non-family managers is more sensitive to firm performance than that of family managers, implying family managers and non-family managers have different impacts on PPS in family firms.

Fourth, compared with McConaughy (2000) I expand the range of managers from CEOs to TMT (including all general managers and vice presidents), use more recent data, and consider the moderating effect of family member ownership. The results show that the compensation of non-family managers is less sensitive to firm performance than that of family managers; however, if the percentage of family members' shareholdings is higher, then the compensation of non-family managers is more sensitive to firm performance than that of family managers. Therefore, the last contribution of my paper is using updated data to supplement the literature and providing evidence to support the family incentive alignment hypothesis.

The rest of the paper runs as follows. Section 2 lists the developments of research hypotheses. Section 3 discusses the data and methodology. Section 4 presents the empirical results. Section 5 provides conclusions and recommendations.

2. Literature review and hypotheses' developments

Fama and Jensen (1983) suggest that agency costs between managers and owners in family firms may decrease, because of the multidimensional and long-term nature of relationships between managers and owners. Similar results are provided by De Angelo and De Angelo (1985). For listed family firms, if family managers enhance firm performance, then they may lose their access to the quasi-rents. Therefore, controlling shareholders in family firms may improve the monitoring function of governance systems or increase quasi-rents. Referring to Lippert and Moore (1994, 1995), family control in family firms may serve as a monitoring system to substitute for CEO bonding through incentive

compensation packages. McConaughy *et al.* (1998) present evidence that family control is associated with higher firm performance, implying family control provides incentives for good performance and is effective at reducing shareholder-manager conflicts. Kole (1997) notes that family-controlled firms are less likely to have any form of explicit incentive compensation, indicating family managers have more incentives for turning up firm value than non-family managers have; therefore, there is little need for family managers to pursue higher incentive compensation.

The results of Aronoff and Ward (1993) are consistent with the above discussions. McConaughy (2000) also asserts that family-member CEOs receive less pay and fewer pay-based incentives than do non-family CEOs, because family CEOs have superior incentives for maximizing firm value based on the family incentive alignment hypothesis. Managers who are family members have incentives for enhancing firm value that differ from other managers; i.e., they may have family ties that provide incentives to operate companies efficiently. They may also focus on firm value from a long-term viewpoint and may also obtain non-pecuniary benefits from their positions - for example, a family firm can provide status in the community and unifies the family.

The research studies cited above assert that a family firm provides family managers incentives through not only share ownership, but also through the quasi-rents that may be available only to family members. Therefore, according to the family incentive alignment hypothesis, which states that family managers have superior incentives for maximizing firm value deriving from their relation to the firm and the quasi-rents available to them, family managers have less need for compensation-based incentives. In other words, in family firms the compensation incentive for family managers differs from that of non-family managers, implying the compensation levels of family mangers are less than that of non-family managers, and that the compensation incentives of family mangers are fewer than that of non-family managers. Taken together, family managers are intimately tied to family firms, and so they have less need for compensation-based incentives. Therefore, based on the family incentive

alignment hypothesis, this paper proposes H1 as follows.

H1: From the perspective of the family incentive alignment hypothesis, the compensation of non-family managers is more sensitive to firm performance than that of family managers.

Referring to Basu *et al.* (2009), the main features of family firms are the long-term approach taken by family owners, whose aim is to preserve the value of their holdings in the company (Dyer and Whetten, 2006). When there are shareholders with a large stake in the business (i.e., a concentrated form of ownership), the firm's outlook tends to be more focused on the long term (Hoopes and Miller, 2006). The fundamental purpose of such long-term priorities is to ensure the survival and vitality of the company and to facilitate the transmission of the firm's legacy to the family owners' descendants (Singal, 2014). In other words, high ownership concentration creates a greater incentive to monitor and control corporate decisions more widely and more effectively (Chau and Gray, 2002; Chen *et al.*, 2008; Chrisman *et al.*, 2004).

Family managers and family owners have an incentive to avoid any actions that could damage their reputation or that of the firm and to also maintain the family's honor and standing in society (Block, 2010; Sharma *et al.*, 1997). Using samples in Taiwan, the empirical results in Lin and Liu (2003) also show that the self-interested assumptions of the agency theory are less likely to occur in family firms, and if family members have a higher proportion of ownership, then the firm's performance is better, like the results presented in Chow *et al.* (1996) and Du *et al.* (2002). In summary, family members with a higher proportion of ownership cause closer ties between their wealth and the firm's value. Hence, according to the family incentive alignment hypothesis, which asserts that family managers have higher incentives for maximizing firm value deriving from their relation to the firm or the quasi-rents available to them, this study expects that family managers need fewer compensation-based incentives. Therefore, if the proportion of family ownership is higher, then the wealth of family members is strongly tied with company performance, thus providing family members with a stronger incentive to maximize shareholder interests (Carter and Zamora, 2009).

Based on the viewpoint of the family incentive alignment hypothesis, the proportion of family ownership can strengthen the difference in pay-performance sensitivity between non-family managers and family managers. Based on the above arguments, the following hypothesis is proposed.

H2: From the perspective of the family incentive alignment hypothesis, the higher percentage of family member ownership strengthens the assertion of H1

3. Research method

3.1 Sample

The sample of this study covers a five-year period from 2012 to 2016.[2] Table 1 shows the sample collection process. First, this study selects TWSE/TPEx-listed companies from the end of 2012, 2013, 2014, 2015, and 2016, deleting samples with missing data and non-family firms. In addition, I delete samples in which all general manager and vice president positions in this family firm are not served all by family members or all by non-family members. In total, this work has 956 observations. The data for the variables examined herein come from the Taiwan Economic Journal (TEJ) database and are supplemented by the relevant information disclosed in the financial statements of the sample companies.

3.2 The definition of family firm

Prior studies like Shanker and Astrachan (1996) indicate that it is difficult to define a family firm precisely, and following the suggestion of Shanker and

[2] The global financial crisis that occurred from 2007 to 2008 is also known as the 2008 financial crisis or the sub-mortgage crisis. It caused Lehman Brothers to declare bankruptcy in September 2008, after which some large financial institutions collapsed or were taken over by the government. This study thus chooses the research period to start in 2010 so as to avoid the impact of this crisis on firm performance of Taiwanese companies. In addition, according to Article 267 of the Securities and Exchange Act, the deadline for all listed companies to set up a "remuneration committee" is the end of 2011. Therefore, in order to avoid the impact of voluntarily setting up a "remuneration committee", this study chooses the samples from the start of 2012.

Table 1

Sample collection process

	2012	2013	2014	2015	2016	Total
Initial firm-year samples (number of TSE-listed and OTC companies at the end of 2012, 2013, 2014, 2015, and 2016)	1,561	1,599	1,614	1,619	1,620	8,013
-Less non-family firms	(677)	(680)	(653)	(647)	(681)	(3,338)
-Less companies in which not all general managers and vice presidents are all family members or all non-family members	(691)	(700)	(688)	(688)	(641)	(3,408)
-Less companies with missing data	(69)	(64)	(72)	(66)	(40)	(311)
Firm-year samples used in the study	124	155	201	218	258	956

Astrachan (1996), family control means the effective control of the strategic direction and intent of the firm to remain in the family with little direct family involvement. In addition, McConaughy (2000) defines family firms as those in which multiple generations of the same family exercise control and manage directly with a great deal of family involvement. Furthermore, Chen *et al.* (2013) define family-controlled firms as those where a family group holds more board seats (including seats held directly and through representatives) than any other individual or group on the board, or if the family group that founded the firm holds the same number of board seats as the next largest group. To summarize the above discussion, the paper defines family firm as an organization where family members hold more board seats (including seats held directly and through representatives) than any other individual or group on the board.

3.3 Variables

3.3.1 Dependent variables

In 2004 the Financial Supervisory Commission of the R.O.C. required companies to report the range of total compensation for board directors, supervisors, general managers, and vice presidents on their annual reports; however, companies should report the true amount of total compensation for

general managers and vice presidents. Therefore, this study defines "manager's remuneration" as the total compensation for general managers and vice presidents. Furthermore, the compensation for general managers and vice presidents may be non-linear (Bushman *et al.*, 1996), and a logarithm of compensation is taken for analysis (Anderson *et al.*, 1999; Hung and Wang, 2008; Murphy, 1985; Sloan, 1993; Tai, 2017). As a result, the dependent variable in this study is a logarithm of total compensation for general managers and vice presidents (*LNPAY*), including annual salary plus cash bonuses, pension, severance pay, special disbursement, and stock bonuses.

3.3.2 Independent variables

This study has the following three independent variables: (1) family firm performance (*ROE*); (2) non-family manager (*NON-FAMILYM*); and (3) the percentage of family member ownership (*FAMILYO*). I describe them in more detail below.

3.3.2.1 Family firm performance (*ROE*)

Tobin's Q considers the firm's market value, including the value of intangible assets or the future value of the firm. However, in Taiwan a company decides managers' compensation on annual net income and not on the firm's market value, implying there is a gap between net income and the firm's market value. Therefore, this study uses return on equity (*ROE*) instead of Tobin's Q as the proxy for family firm performance. Based on the previous literature, such as Sun and Cahan (2009), return on equity (*ROE*) is measured by net income divided by the beginning-year shareholders' equity.

3.3.2.2 Non-family manager (*NON-FAMILYM*)

The paper defines *NON-FAMILYM* as a dummy variable. If non-family members hold all general manager and vice president positions, then *NON-FAMILYM* is coded 1 and 0 otherwise. Non-family members are people not belonging to the same family group through blood or marriage.

3.3.2.3 The percentage of family member ownership (*FAMILYO*)

This paper defines the percentage of family member ownership *(FAMILYO)* as the percentage of family members' shareholdings.

3.3.3 Control variables

According to prior studies, such as Patton and Baker (1987), Beasley (1996), Shivdasani (1993), and Hsu and Liao (2013), this paper includes one corporate governance variable: *BLOCK*, the percentage of shareholdings by blockholders who own at least 5% of the common stock.

Referring to prior studies like Sue *et al.* (2009), this paper employs "the ultimate owners' deviation of control rights over cash flow rights (*DEV*)" to control for the influence of pyramid shareholding. The ultimate owners' deviation of control rights over cash flow rights (*DEV*) is the ratio of control rights to cash flow rights, where the control (voting) rights are the sum of the minimum ownership in each "control chain" of the ownership structure in order to determine the lowest voting rights of the controlling shareholders; and cash flow rights are the ratio of shares owned by the ultimate shareholders to total shares (Claessens *et al.*, 1999; La Porta *et al.*, 1999; Tsai *et al.*, 2003).

From prior studies like Sun and Cahan (2009) and Wu *et al.* (2014), this paper includes growth opportunities (*LNMB*) in the equation. Growth opportunities (*LNMB*) are the log of the sum of the book value of liabilities and the market value of common equity over the book value of assets.

Firms listed on the Taiwan Stock Exchange (TWSE) are generally subject to stricter listing and disclosure requirements than those listed in the Over-The-Counter (TPEx) market. Therefore, this study creates an indicator variable, *D*, which is set at 1 if the firm is listed on the TWSE and 0 if it is not. *INDUSTRY* is an indicator set to each industry category according to the codes of the Taiwan Economic Journal (TEJ) database.

3.4 Regression equation

My paper uses panel datasets, which consist of a number of observations over time on a number of cross-sectional units. Referring to Hanushek and Jackson (1977), if serial correlation exists,[3] then the estimated variances of the regression coefficients would be biased, leading to unreliable hypothesis testing. Therefore, I run Equation 1 for time series data analysis.

This study uses Equation 1 to investigate the hypotheses. If β_4 in Equation 1 is significantly positive, then H1 is supported. Moreover, H2 is supported if β_5 in Equation 1 is significantly positive. Equation 1 runs as follows.

$$LNPAY_{i,t} = \beta_0 + \beta_1 ROE_{i,t} + \beta_2 NON\text{-}FAMILYM_{i,t} + \beta_3 FAMILYO_{i,t} + \beta_4 ROE_{i,t} * NON\text{-}FAMILYM_{i,t} + \beta_5 ROE_{i,t} * NON\text{-}FAMILYM_{i,t} * FAMILYO_{i,t} + \beta_6 BLOCK_{i,t} + \beta_7 DEV_{i,t} + \beta_8 LNMB_{i,t} + \beta_9 D_t + \beta_{10} INDUSTRY_{i,t} + \varepsilon_t \quad (1)$$

The variables are defined as follows.

LNPAY: Manager remuneration decided by the remuneration committee, measured as the logarithm of total compensation for general managers and vice presidents;

ROE: Return on equity, measured by net income divided by the beginning-year shareholders' equity;

NON-FAMILYM: An indicator that equals one if non-family members hold all general manager and vice president positions and 0 otherwise;

FAMILYO: The percentage of family members' shareholdings;

BLOCK: The percentage of shareholdings by blockholders who own at least 5% of the common stock;

DEV: Ratio of control rights to cash flow rights;

[3] Serial correlation (also called autocorrelation) is where error terms in a time series transfer from one period to another. In other words, the error for one-time period *a* correlates with the error for a subsequent time period *b*. The study uses the Durbin-Watson test to examine whether serial correlation exists in Equation 1. The Durbin-Watson d-statistic of my paper is 1.829, which is less than the value of $d_L = 1.834$; therefore, I do not reject H_A: $\rho > 0$, implying there is a positive correlation of Equation 1.

LNMB: Log of the sum of the book value of liabilities and the market value of common equity over the book value of assets;

D: A dummy variable equal to 1 if the company is a TWSE firm and 0 otherwise;

INDUSTRY: An indicator set to each industry category according to the codes of the Taiwan Economic Journal (TEJ) database;

t: t^{th} year, where the research period is from 2012 to 2016;

I: i^{th} observation;

ε_t: Residuals.

4. Empirical results

4.1 Descriptive statistics and correlation analyses

Tables 2 reports descriptive statistics of the variables. In the table the mean (median) value for *LNPAY* is 6.898 (6.897). The mean of *ROE* is 3.985. On the other hand, the mean value for *NON-FAMILYM* is 0.725. Therefore, the majority of managers in the family firm are non-family. In addition, the mean value for the percentage of family members' shareholdings is 11.784, implying family members hold around 12% of shares outstanding, and the mean value of *BLOCK* is 30.862, indicating the percentage of shareholdings by blockholders is around 31%. Finally, the mean values for *DEV*, *LNMB*, and *D* are 82.702, 0.038, and 0.632, respectively. This means the ratio of control rights to cash flow rights control rights is 82.702, and the majority of the sample companies are TWSE-listed.

Tables 3 presents the Pearson product-moment correlation of Equation 1. Table 3 shows that *LNPAY* and *ROE* have a significantly positive correlation. In addition, *LNPAY* and *NON-FAMILYM* have a significantly positive correlation, but *ROE* and *NON-FAMILYM* do not have a significant correlation. Furthermore, *FAMILYO* has a significantly negative correlation with *LNPAY* and *NON-FAMILYM*, but it has no significant correlation with *ROE*. Because interactive items are tested in Hypotheses 1 and 2, simply looking at the

Table 2

Descriptive statistics of equation 1 (N=956)

Variable	Mean	Median	Std. Dev.	Maximum	Minimum
LNPAY	6.898	6.897	0.446	7.958	5.857
Cash compensation	18,852.42	10,003	35,421.02	1,403,055	0
Equity compensation	439.05	0	9,001.23	502,522	0
Total compensation	19,002.01	10,021	40,416.06	1,809,689	1,054
ROE	3.985	5.235	14.081	32.890	-57.080
NON-FAMILYM	0.725	1	0.446	1	0
FAMILYO	11.784	8.940	11.396	45.950	0
BLOCK	30.862	30.090	18.984	75.990	0
DEV	82.702	95.765	25.392	100	7.590
LNMB	0.038	0.008	0.172	0.539	-0.593
D	0.632	1	0.482	1	0

LNPAY: The logarithm of total compensation for general managers and vice presidents. Cash compensation: The total cash compensation for general managers and vice presidents (in NT$1000). Equity compensation: The total equity compensation for general managers and vice presidents (in NT$1000). Total compensation: The total compensation for general managers and vice presidents (in NT$1000). ROE: Return on equity, measured by net income divided by the beginning-year shareholders' equity. NON-FAMILYM: An indicator that equals one if non-family members hold all general manager and vice president positions and 0 otherwise. FAMILYO: The percentage of family members' shareholdings. BLOCK: The percentage of shareholdings by blockholders who own at least 5% of the common stock. DEV: The ratio of control rights to cash flow rights. LNMB: The log of the sum of book value of liabilities and market value of common equity over book value of assets. D: A dummy variable equal to 1 if the company is a TWSE firm and 0 otherwise.

significance of the correlation coefficients between the two variables cannot determine whether these two hypotheses are validated. Therefore, this study adopts regression analysis for investigative purposes.

4.2 Regression analyses

Table 4 lists the empirical results of Equation 1. If serial correlation exists, then the estimated variances of the regression coefficients will be biased; therefore, this study runs Equation 1 for time series data analysis. In addition, the t-values are in all regressions based on robust (clustered) standard errors. Winsorizing is the transformation of statistics by limiting extreme values in the statistical data to reduce the effect of outliers. This research refers to Garvey and

Table 3

Correlation matrix of equation 1 (N=956)

	LNPAY	ROE	NON-FAMILYM	FAMILYO	BLOCK	DEV	LNMB	D
LNPAY	1	0.168**	0.287**	-0.250**	-0.172**	-0.219**	0.082*	0.273**
ROE	0.168**	1	-0.014	0.002	-0.008	0.011	0.063*	0.049
NON-FAMILYM	0.287**	-0.014	1	-0.394**	-0.094**	-0.260**	-0.068*	0.110**
FAMILYO	-0.250**	0.002	-0.394**	1	0.040	0.324**	-0.003	-0.116**
BLOCK	-0.172**	-0.008	-0.094**	0.040	1	-0.010	-0.013	-0.102**
DEV	-0.219**	0.011	-0.260**	0.324**	-0.010**	1	0.029	-0.136**
LNMB	0.082*	0.063*	-0.068*	-0.003	-0.013	0.029	1	-0.117**
D	0.273**	0.049	0.110**	-0.116**	-0.102**	-0.136**	-0.117**	1

1. For the definitions of variables, please refer to Table 2.
2. ** and * indicate significance at the 1% and 5% levels, respectively.
3. Since NON-FAMILYM and D in Table 3 are dummy variables, I use the Chi-square test to re-examine the correlation between two variables. The Pearson Chi-square statistic is 11.77; therefore, I am able to reject the null hypothesis that NON-FAMILYM (an indicator that equals one if non-family members hold all general manager and vice president positions and 0 otherwise) is independent of D (a dummy variable equal to 1 if the company is a TWSE firm and 0 otherwise).

Milbourn (2003) and sets the top 1% and bottom 1% of the sample to the number for 1% and 99%, respectively.

Because my research purpose is to examine whether the compensation of non-family managers is more sensitive to firm performance than that of family managers and also to test the moderating effect of family member ownership, there must be a positive relationship between a manager's remuneration and a family firm's performance. In other words, if there is no relationship between a manager's remuneration and a family firm's performance, implying PPS does not exist in a family firm, then the research purpose is meaningless. The coefficient of *ROE* in Equation 1 is 0.003, which is significantly positive (t=2.52) and implies a positive relationship between a manager's remuneration and a family firm's performance. In other words, PPS exists in the family firm. Therefore, my two research hypotheses are reasonable.

The estimated coefficient of the interaction term (*ROE*NON-FAMILYM*) is -0.001, which is not significant (t=-0.77) and does not support H1: From the perspective of the family incentive alignment hypothesis, the compensation of non-family managers is more sensitive to firm performance than that of family managers. Therefore, my results do not support the perspective of the family

incentive alignment hypothesis, meaning the compensation of non-family managers is less sensitive to firm performance than that of family managers. One possible reason might explain why my results do not support H1. The proportion of family ownership is not large enough to let the wealth of family members strongly tie in with company performance. In other words, if the proportion of family ownership is higher, then the wealth of family members strongly correlates to company performance, thus providing family members with a stronger incentive to maximize shareholder interests (Carter and Zamora, 2009) and strengthening the difference in pay-performance sensitivity between non-family managers and family managers.

The estimated coefficient of the interaction term (*ROE*NON-FAMILYM*FAMILYO*) is 0.0003, which is significant at the 1% level (t =2.79) and supports H2: From the perspective of the family incentive alignment hypothesis, the higher percentage of family member ownership strengthens the assertion of H1. As a result, increasing the percentage of family member ownership can cause the compensation of non-family managers to be more sensitive to firm performance than that of family managers. In other words, under the condition of a higher percentage of family member ownership, my findings support the perspective of the family incentive alignment hypothesis. In short, the proportion of family member ownership can strengthen the difference in pay-performance sensitivity between non-family managers and family managers. The results presented here are consistent with those of Kole (1997), who states that family firms are less likely to have performance plans than non-family firms, because the sensitivity of pay is lower in firms with family managers. It is worth noting that although β_5 is statistically significant, its magnitude is small. In essence, raising the percentage of family member ownership can cause the compensation of non-family managers to be more sensitive to firm performance than that of family managers, but the incremental effect is not large. The findings of H2 also support my explanations of why my empirical results do not support H1.

Summarizing the above discussions, I now present why my results support

H2, but do not support H1. Based on the perspective of the family incentive alignment hypothesis, family managers have superior incentives for maximizing firm value, deriving from their relation to the firm and the quasi-rents available to them; therefore, family managers have less need for compensation-based incentives. However, compared with some specific objects such as blockholders, at 12% the percentage of family members' shareholdings is not large, because blockholders hold around 31% of shares outstanding. As the average value of the percentage of family members' shareholdings in the study is not large, the closer correlation between family members' wealth and the firm's value is not pronounced; therefore, my results support H2, but do not support H1. In short, my findings support the perspective of the family incentive alignment hypothesis, only on the condition where the proportion of family member ownership is larger.

The control variables in Equation 1 are consistent with previous research. For instance, the coefficients of *BLOCK* and *DEV* are respectively -0.003 and -0.002, and the t values are -4.48 and -3.66. This shows that the higher the percentage of shareholdings by blockholders is or the higher the ultimate owners' deviation of control rights over cash flow rights is, the smaller the logarithm value of total compensation will be for general managers and vice presidents. In addition, the coefficient of *LNMB* is significantly positive (t=3.79); therefore, the higher the log of the sum of the book value of liabilities and the market value of common equity over the book value of assets is, the larger the logarithm will be for the total compensation of general managers and vice presidents. Finally, a TWSE company pays more compensation to its general managers and vice presidents than a TPEx company does, because the coefficient of *D* is significantly positive (t=7.24).

4.3 Additional analyses

In the main analysis this study explores whether the compensation of non-family managers is more sensitive to firm performance than that of family managers and further examines the moderating effect of the percentage of family

Table 4

Regression statistics for equation 1 (N=956)

Variable	Parameter Estimate	t Value
Intercept	0.930	1.87*
ROE	0.003	2.52**
NON-FAMILYM	0.185	5.47***
FAMILYO	-0.004	-3.84***
ROE*NON-FAMILYM	-0.001	-0.77
ROE*NON-FAMILYM*FAMILYO	0.0003	2.79***
BLOCK	-0.003	-4.48***
DEV	-0.002	-3.66***
LNMB	0.254	3.79***
D	0.204	7.24***
INDUSTRY	YES	YES
AdjR^2	0.221	
F Value	31.17	

1. For the definitions of variables, please refer to Table 2.
2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
3. The VIF of all variables is less than 3.

member ownership. In the first additional analysis, I focus on whether the link is strong (weak) between better- performing (poorer-performing) companies and executive remuneration. *Ceteris paribus*, the better the performance of a company is, the higher its expected cash flows (Aslan and Kumar, 2012; Zhang *et al.*, 2014) are, and so for a company with good performance, it has a higher probability of paying its managers their appointed remuneration. However, if it is a poor-performing company, then it does not have the corresponding cash flows to pay its managers their appointed remuneration, and so the compensation contracts between the company and managers will be less feasible, implying the correlation between manager remuneration and firm performance will be weaker. As a result, this research expects that better company performance strengthens the validation of H1. In addition, referring to Stathopoulus *et al.* (2005) and Zhang *et al.* (2014), this study uses the median of one-year prior industry *ROE* as the standard value to separate observations into two groups: better-performing and poorer-performing companies.

The compensation literature so far has not reached a consensus on an optimal measure of company performance (Attaway, 2000; Bacidore *et al.*, 1997; Bussin, 2015; Carpenter and Sanders, 2002; Eriksson and Lausten, 2000; Fatemi *et al.*, 2003), and the various definitions used may lead to different empirical results. In addition, many studies note that the accounting measures of profitability, such as return on equity (*ROE*), are calculated based on past information and thus can be manipulated by managers. This runs in contrast to Tobin's Q (*Q*), which considers the firm's market share and intangible assets and is able to reflect a firm's future value (Lindenberg and Ross, 1981; Wernerfelt and Montgomery, 1988; Lang and Stulz, 1994; Bharadwaj *et al.*, 1993; Yeh, 2005). Therefore, I conduct further additional analyses to change the measure of company performance from the accounting-based measurement of *ROE* to the market-based measurement of Tobin's Q (*Q*) in Equation 1. Finally, in order to strengthen my main analysis and to examine H2 again, I use the median of the percentage of family members' shareholdings as the standard value to separate observations into two groups: higher shareholdings and lower shareholdings.

4.3.1 Separating firms into better- and poorer-performing groups

This study uses the median of one-year prior industry *ROE* as the standard value to separate observations into two groups: better-performing and poorer-performing companies. Table 5 reports the regression results and shows that the estimated coefficients (t values) of *ROE*NON-FAMILYM* and *ROE*NON-FAMILYM*FAMILYO* are respectively -0.003 (-1.44) and 0.0005 (3.60) for better-performing companies and -0.0004 (-0.09) and -0.0002 (-1.40) for poorer-performing ones. Therefore, the results indicate that the percentage of family member ownership strengthens the support for H1, but it only exists in profitable companies, which is consistent with previous studies like Stathopoulus *et al.* (2005) and Zhang *et al.* (2014). In other words, the external environment is very important in this context (Bussin, 2015), and thus pay-performance sensitivity is likely to fluctuate with macroeconomic trends. In short, taking better-performing companies as the sample, H2 is supported. On the contrary,

Table 5

Regression: Separating firms into poorer- and better-performing (N=956)

	Better-performing		Poorer-performing	
Variable	Parameter Estimate	t Value	Parameter Estimate	t Value
Intercept	0.866	1.88*	0.877	1.48
ROE	0.002	1.28	0.001	0.23
NON-FAMILYM	0.179	4.14***	0.323	3.36***
FAMILYO	-0.002	-1.50	-0.003	-1.73*
ROE*NON-FAMILYM	-0.003	-1.44	-0.0004	-0.09
ROE*NON-FAMILYM* FAMILYO	0.0005	3.60***	-0.0002	-1.40
BLOCK	-0.002	-2.64***	-0.003	-3.50***
DEV	-0.002	-3.07***	-0.001	-1.19
LNMB	0.064	0.68	0.309	3.08***
D	0.155	4.37	0.269	6.08***
INDUSTRY	YES	YES	YES	YES
AdjR^2	0.159		0.281	
F Value	13.18		17.39	

1. For the definitions of variables, please refer to Table 2.
2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
3. The VIF of all variables is less than 4.

taking poorer-performing companies as the sample, the compensation of non-family managers is less sensitive to performance than that of family managers, and even increasing the percentage of family member ownership is unable to support H2. To sum up, the positive relationship between non-family manager remuneration and family firm performance is less pronounced in poorer-performing companies.

4.3.2 Change the measure of company performance from ROE to Tobin's Q

From Table 6, the empirical results of using Tobin's Q (*Q*) as a proxy for firm performance are not consistent with those when using *ROE*. The results thus do not support H1 or H2. In other words, when I define the proxy of firm performance as Tobin's Q (*Q*), the estimated coefficients of *Q*, *Q*NON-FAMILYM*, and *Q*NON-FAMILYM*FAMILYO* are all insignificant, and their t values are 0.55, -1.08, and -0.68, respectively. Taken together and in order to explore the PPS issue, I believe that defining the measurement of firm

Table 6

Regression: Using Tobin's Q as a proxy for firm performance (N=956)

Variable	Parameter Estimate	t Value
Intercept	0.883	1.85*
Q	0.016	0.55
NON-FAMILYM	0.260	4.99***
FAMILYO	-0.003	-2.25**
Q*NON-FAMILYM	-0.040	-1.08
Q*NON-FAMILYM*FAMILYO	-0.001	-0.68
BLOCK	0.311	3.70***
DEV	-0.002	-3.46***
LNMB	0.212	7.27***
D	-0.002	-4.11***
INDUSTRY	YES	YES
AdjR^2	0.194	
F Value	26.66	

1. For the definitions of the variables, please refer to Table 2.
2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
3. The VIF of all variables is less than 3.

performance by *ROE* is more appropriate, because the denominator of *ROE* is net income.

4.3.3 Separate firms into higher and lower shareholding groups

The study next employs the median of the percentage of family members' shareholdings as the standard value to separate observations into two groups: higher shareholdings and lower shareholdings. I use these two groups to examine H2 again.

Table 7 reports the regression results and shows that the estimated coefficient (t values) of *ROE*NON-FAMILYM* is 0.005 (2.48) for higher shareholding companies and -0.001 (-0.49) for lower shareholding companies. This means that non-family managers' compensation is more sensitive to firm performance than family managers' compensation, but only if the percentage of family member ownership is higher. Therefore, the results of the third additional analysis are consistent with the main analysis, and these results also strengthen the robustness of my conclusions.

Table 7

Regression: Separating firms into higher- and lower-shareholdings (N=956)

	Higher-shareholdings		Lower-shareholdings	
Variable	Parameter Estimate	t Value	Parameter Estimate	t Value
Intercept	0.743	1.35	0.753	1.34
ROE	0.003	2.15**	0.003	1.28
NON-FAMILYM	0.170	4.44***	0.318	5.57***
ROE*NON-FAMILYM	0.005	2.48**	-0.001	-0.49
BLOCK	-0.003	-3.33***	-0.003	-3.18***
DEV	-0.0003	-0.32	-0.002	-3.55***
LNMB	0.154	1.86*	0.455	4.07***
D	0.110	3.06***	0.310	6.97***
INDUSTRY	YES	YES	YES	YES
AdjR^2	0.165		0.237	
F Value	14.52		22.12	

1. For the definitions of the variables, please refer to Table 2.
2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
3. The VIF of all variables is less than 4.

4.4 Endogeneity analysis

Another thing to note is the estimation of Equation 1 may suffer from the problem of endogeneity. First, it is likely that this study omits some unobservable variables that simultaneously affect a manager's remuneration and a family firm's performance. Second, a manager's remuneration and a family firm's performance may be jointly determined. This work thus uses two methods to alleviate concerns about endogeneity: fixed-effect model and dynamic panel data analysis. Among them, fixed-effect models mitigate the endogeneity that arises from any omitted unobservable variables (Conyon and He, 2011; Zhang *et al.*, 2014), while dynamic panel data analysis alleviates the endogeneity that arises from simultaneous determination (Aslan and Kumar, 2012; Blundell and Bond, 1998; Roodman, 2009; Zhang *et al.*, 2014).

This research first employs the Hausman test to explore whether fixed-effect model or dynamic panel data analysis is suitable for endogeneity analysis. Under the null hypothesis of the Hausman test, estimators do not

correlate with error terms of the intercept; in contrast, under the alternative hypothesis of the Hausman test, estimators do correlate with error terms of the intercept. If this study's Hausman test value is significant, then it rejects the null hypothesis. In other words, there is a correlation between estimators and error terms of the intercept, and thus I employ the fixed-effect model for the endogeneity issue. However, if the Hausman test value of this study is not significant, then the dynamic panel data analysis is suitable for endogeneity analysis.

The value of the Hausman test is -14.08, and therefore I utilize the fixed-effect model for endogeneity analysis. Table 8 reports the regression results from the fixed-effect model. The estimated coefficients (t values) of *ROE*NON-FAMILYM* and *ROE*NON-FAMILYM*FAMILYO* are respectively 0.002 (1.48), and 0.0003 (3.03). The empirical results still support H2, but do not support H1. The results are consistent with prior findings.

Table 8

Regression results by employing the fixed effect model (N=956)

Variable	Parameter Estimate	t Value
Intercept	-0.270	-1.40
ROE	0.003	2.52
NON-FAMILYM	0.197	5.99***
FAMILYO	-0.004	-3.47***
ROE*NON-FAMILYM	0.002	1.48
ROE*NON-FAMILYM*FAMILYO	0.0003	3.03***
BLOCK	-0.003	-4.53***
DEV	-0.002	-3.57***
LNMB	0.253	3.78***
D	0.202	7.14***
INDUSTRY	YES	YES
AdjR^2	0.222	
F Value	31.37	

1. For the definitions of the variables, please refer to Table 2.
2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
3. The VIF of all variables is less than 3.

5. Conclusions

Following prior studies, such as Kuo and Wang (2017), family firms in Taiwan are an important business organization form, and so this study takes them as the research samples. Family firms exhibit no separation between ownership and control (Anderson and Reeb, 2003a; Gomez-Mejia *et al.*, 2003). Hence, there is the potential to increase the conflict between majority and minority shareholders (Peng and Jiang, 2010; Young *et al.*, 2008). Remuneration contracts can be used to align the interests of the board of directors and top management team with minority shareholders (Andreas *et al.*, 2010; Jiang and Peng, 2011; Young *et al.*, 2008), yet scant papers examine the remuneration issue in family firms (Anderson and Bizjak, 2003; Tabor, 2018; Main and Johnston, 1993). Therefore, the first step herein is to investigate whether the compensation of non-family managers is more sensitive to firm performance than that of family managers. The second step of this study is to further examine the moderating factor of the percentage of family member ownership.

This study takes TWSE/TPEx-listed family firms in Taiwan from 2012 to 2016 as the data sample. The empirical results show that the compensation of non-family managers is less sensitive to firm performance than that of family managers, but if the percentage of family members' shareholdings is higher, then the compensation of non-family managers is more sensitive to firm performance than that of family managers. In addition, better company performance also causes the compensation of non-family managers to be more sensitive to firm performance than that of family managers. It is worth noting that the foregoing empirical results exist when the study defines the measure of company performance as an accounting measurement, ROE, and not a market measurement, Tobin's Q.

This study makes five contributions to the literature. First, family firms have always been an important type of business organization (Yeh *et al.*, 2001). Therefore, the first contribution of this study is to understand the status of pay-performance sensitivity in family firms and to complement the existing

relevant literature. According to the results, the compensation of non-family managers is less sensitive to firm performance than that of family managers, but if the percentage of family members' shareholdings is higher, then the compensation of non-family managers is more sensitive to firm performance than that of family managers. Second, the study illustrates how to enhance pay-performance sensitivity of family firms, which can serve as a reference when family firms design their remuneration scheme. The findings show that increasing the percentage of family members' shareholdings or enhancing firm performance can increase pay-performance sensitivity of non-family managers in Taiwanese family firms. Third, this paper presents for family firms that an "internal" control mechanism is workable when the goal is to enhance pay-performance sensitivity - that is, an "internal" control mechanism like increasing the proportion of family member ownership could be one way for family firms to boost pay-performance sensitivity of non-family managers. Fourth, the fact that non-family managers have higher pay-performance sensitivity when the proportion of family member ownership is higher is consistent with the suggestion that non-family managers lack the incentives that family managers have. It also implies that higher compensation for non-family managers may also act as a compensating value for the risk premium, because their pay varies more greatly based on higher pay-performance sensitivity. In short, my findings support the perspective of the family incentive alignment hypothesis. Finally, tying non-family managers' pay to performance sends a signal to outside shareholders and to family members that non-family managers have incentives to increase their efforts to maximize firm value, because their compensation increases (Aronoff and Ward, 1993). These results suggest that firms should be sensitive to the fact that compensation costs may rise when outside managers are hired.

The research also has several managerial implications. I find that solely focusing on family managers' involvement misconstrues the PPS of managers in family firms, because the compensation of non-family managers is more sensitive to performance than that of family managers when the proportion of

family member ownership is higher, implying PPS exists for non-family managers in family firms when the proportion of family member ownership moves higher. This means family managers and non-family managers provide shareholders with different benefits and costs, and so family members have different views on family managers and non-family managers, which can form a framework for family firms designing compensation contracts.

For policymakers, my findings imply that disclosure of family managers and non-family manager relationships within firms is important and holds relevant value to investors, because the sensitivity levels of the PPS of non-family managers and family managers are different. This is particularly important in countries with large numbers of family firms (i.e., Taiwan) and where controlling families may extend their control of their firms through indirect ownership (i.e., appoint one non-family manager).

For academia, many studies look at family member involvement (e.g., Fiegener, 2010; Villalonga and Amit, 2006), however, scant studies explore the "indirect" effect of a family member. According to my results, the compensations of family managers (with "direct" effect of family member) and non-family managers (with "indirect" effect of family member) have different sensitivities to firm performance in the family firm. Therefore, my findings suggest that future studies should specifically identify the involvement of both family managers (with "direct" effect of family member) and non-family managers (with "indirect" effect of family member) in family firms.

This research does have the following four limitations. (1) Different studies have varying definitions of company performance, and so the empirical results of this study are based on its own definition of company performance. In addition, this study defines managers' compensation by using the amounts disclosed in a firm's annual report, which may possibly differ from managers' actual remuneration.

(2) Although Article 10, Item 9 of the Regulations Governing Information to be Published in Annual Reports of Public Companies only requires that the

company's financial statements need to disclose information about spouses and second degree of kinship, some companies further disclose information about in-laws or employees with greater than two degrees of kinship. The research is based on the degree of kinship announced in annual reports to determine whether they are family members, and so different disclosure standards of different companies will affect the category of family members in this article.

(3) According to the requirement of the Financial Supervisory Commission, listed companies must announce the total compensation of general managers and vice presidents, including annual salary plus cash bonuses, pension, severance pay, special disbursement, and stock bonuses, but not including the remuneration for director position. Therefore, another limitation is that the total compensation for general managers and vice presidents used in the study does not include the remuneration for director position.

(4) This study claims that increasing the percentage of family members' shareholdings or enhancing firm performance can increase the pay-performance sensitivity of family firms. However, the findings do not mean that the enhancement of firm performance is a natural and common goal in society, or that enhancing PPS takes priority over increasing firm performance for shareholders. Answering this question demands more empirical evidence. In other words, the main purpose and my research design are to explore the sensitivity levels of the PPS of non-family managers and family managers in family firms and not to find any follow-up reaction of shareholders in family firms to increase firm performance or whether raising PPS is more important than increasing firm performance.

This research also has two recommendations for future research. (1) One can further explore the moderating effect of other variables to influence the pay-performance sensitivity of family managers and non-family managers in family firms, such as industry, company size, years of company establishment, and CEO duality. (2) Future research studies can also use other measures as a proxy for company performance, like multi-measures, and then compare the

results with this present study.

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