8-1-2009

Essays concerning the directors of Taiwanese corporations :their turnovers and their influence on firm performance

Tsunghe Wu

Follow this and additional works at: https://scholarsjunction.msstate.edu/td

ESSAYS CONCERNING THE DIRECTORS OF TAIWANESE CORPORATIONS:

THEIR TURNOVERS AND THEIR INFLUENCE ON FIRM PERFORMANCE

By

Tsung-Che Wu

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Finance
in the Department of Finance and Economics

Mississippi State, Mississippi

August 2009

ESSAYS CONCERNING THE DIRECTORS OF TAIWANESE CORPORATIONS:

THEIR TURNOVERS AND THEIR INFLUENCE ON FIRM PERFORMANCE

By

Tsung-Che Wu

Approved:

_____   _____
Gregory L. Nagel   Gary Wayne Kelly
Assistant Professor of Finance   Associate Professor of Finance
(Director of Dissertation)   (Director of Dissertation)

_____   _____
Randall C. Campbell   Michael J. Highfield
Assistant Professor of Economics   Assistant Professor of Finance
(Committee Member)   (Committee Member)

_____   _____
James J. Chrisman   Barbara A. Spencer
Professor of Management   Professor of Management
(Committee Member)   Associate Dean for Research and Outreach
                                          Director of Graduate Studies in the
                                          College of Business

_____
Lynne D. Richardson
Professor of Marketing
Dean of the College of Business

Name: Tsung-Che Wu

Date of Degree: August 8, 2009

Institution: Mississippi State University

Major Field: Business Administration (Finance)

Major Professor: Dr. Gregory L. Nagel
                 Dr. Gary Wayne Kelly

Title of Study: ESSAYS CONCERNING THE DIRECTORS OF TAIWANESE
                   CORPORATIONS: THEIR TURNOVERS AND THEIR INFLUENCE
                   ON FIRM PERFORMANCE

Pages in Study: 140

Candidate for Degree of Doctor of Philosophy

In Essay 1, we examine the departure of independent directors among 525 Taiwanese publicly listed firms with independent directors on the board between 2002 and 2006. We find that the accounting restatements is positively associated with the number (and the rate) of departures in the firm. This result implies that deteriorating financial reporting quality is related to the departures, which is consistent with Srinivasan's (2005) finding among the U.S. firms. We also find the number (and the rate) of departures is positively associated with shares owned by controlling families. Our findings support the independent directors' role for intense monitoring based on agency theory. The results also support Anderson and Reeb's (2004) result based opinion that that independent directors can protect minority shareholders' interest by hindering dominant or family shareholders' opportunistic or expropriation behaviors.

In Essay 2, we examine if there are significant associations between firm performance and (1) directors' shareholdings, (2) directors' family shareholdings, and (3) independent directors' career affiliations in 2,164 Taiwanese publicly listed firms between 2002 and 2006. After addressing for possible endogeneity and controlling for firm specific variables, we find a positive association between CEO's shareholding and firm performance. Consistent with agency theory and incentive effect, this result indicates that CEOs have control over firms' operation and have incentive to maximize firms' value. Also, we find a negative association between firm performance and non-executive directors' shareholdings. This result, which is consistent with the entrenchment effect, implies that the possibility of expropriating minority shareholders' interest may increase with shares owned by non-executive directors. However, we find that the non-executive directors' family shareholding is positively related to firm performance, which implies that non-executive directors may be motivated by their family members to improve firm value. The results also imply that the majority-minority agency problem (Villalonga and Amit, 2006) can be reduced when director's family welfare is at stake. In addition, consistent with skill matching theory (Jovanovic, 1979), we find a positive association between independent director's career affiliation of executive officer and firm performance, which implies that independent directors who are executives are likely to improve firm performance.

DEDICATION

I dedicate this dissertation to my wife, Yi-Ju Chen, my son, Isaac Wu, my parents, and my parents-in-law for their unconditional love and support in all of my endeavors.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

ESSAY 1: DEPARTURE OF INDEPENDENT DIRECTORS IN FAMILY

OWNERSHIP CONCENTRATED FIRMS: THE CASE OF TAIWAN

1.1 Introduction

The board of directors is an internal monitoring mechanism used by owners to

deal with the agency problems that may result from separation of ownership and control.

Our purpose in this paper is to investigate the impact of (1) financial performance (2)

financial reporting quality (3) board composition and (4) ownership structure, particularly

family control, on the departure of independent directors in Taiwanese publicly listed

firms. Directors in this essay are classified as (1) executive directors, (2) non-executive

directors, or (3) independent directors.[1] Both executive and non-executive directors are

non-independent directors, who can be either inside or affiliated directors as those

directors in the U.S. firms.[2] According to Security Exchange Law in Taiwan, independent

directors have no affiliation with the directed firm and have restricted shareholdings.

---

[1] According to the Corporate Law and Security Exchange Law in Taiwan, directors on board are classified as either (a) directors or (b) independent directors. Both executive and non-executive directors are the non-independent directors and are generally called as "directors" in Taiwan. The major difference between executive and non-executive directors is that executive directors also hold executive positions but non-executive directors do not hold executive positions in the firm.

[2] For example, Bhagat and Black (1999) divided the U.S. directors into three categories: (1) inside directors (e.g. officers of the firm), (2) affiliated outside directors (or grey directors, e.g. former officers of the firm, relatives of officers in the firm, or interested parties likely to have business relationships of the firm), and (3) independent directors (outside directors who are not affiliated with the firm).

Unique features of corporate governance in Taiwan are particularly suited to our analysis. First, family ownership and control is common in Taiwanese firms. Second, unlike the U.S., in Taiwan the stock held by independent directors plus the stock held by their family members is limited to one percent of firm shares. This shareholding restriction is limited to (1) the period of directorship and (2) two years before appointment as an independent director (Yeh and Woidtke, 2005).

Concerns regarding the increased departure of independent directors have been raised since the Taiwan Stock Exchange (TWSE) announced regulations in 2001.[3] Starting in 2002, TWSE required all newly listed firms to hire at least two independent directors on each firm's board in order to improve the quality of corporate governance in Taiwan.[4] However, as presented in Table 1 and Figure 1, even though the number of departures increases in each year, the rate of departures is stable from 2002 to 2006. Similarly, as shown in Table 1 and Figure 2, there is little difference between the departure rates of independent directors and non-executive directors. These findings suggest that the factors affecting independent director turnover rates can be beyond the 2002 TWSE regulation. Thus, we investigate whether the number of departures and the departure rate are explained by theories developed to explain director departure rates.

---

[3] For example, on the Ministry of Economic Affair website: http://twbusiness.nat.gov.tw/paper/y05/04/23-251.htm, while concerning the amendment of Security Exchange Law in 2005, Director Dai at Taiwan Research Institute mentioned: " … recently a lot of independent directors resigned from firms having independent directors on board … we can find that independent directors are acting more as policy endorsers than as decision monitors … " Other comments in 2006 regarding increased departures can be found on the website of Corporate Governance Association in Taiwan: http://www.cga.org.tw/index.php?content=bulletin&cat=&view=894&allnum=1&cursornum=1.

[4] The requirements are mandatory for newly listed firms based on the Security Exchange Law. For firms listed before 2002, the recruitment of independent directors is strongly suggested by TWSE.

According to agency theory (Jensen and Meckling, 1976), a conflict of interest between the principal (the shareholders) and agent (the directors) may occur resulting in reduced firm performance.[5] An empirical consensus holds that reduced firm performance is associated with director turnover. Fama and Jensen (1983) suggest that directors not only monitor the upper management for shareholders but also are disciplined by the market, based on their performance in monitoring. Both Denis and Sarin (1999) and Hermalin and Weisbach (2003) suggest that U.S. director turnover is related to a decrease in firm performance. Similarly, independent directors may face pressure from shareholders who suffer from poor firm performance. Fama (1980), for example, suggests that U.S. independent directors may be disciplined by the market for prior performance in monitoring. Similarly, if a U.S. company performs poorly financially, independent directors may bear the consequence and be forced to leave the board (Fich and Shivdasani, 2006). Independent directors may even be voted off the board or lose board seats at other firms due to financial reporting failures such as accounting restatements (Srinivasan, 2005).

Directors play a pivotal role in family firms. In a study of U.S. family firms, Anderson and Reeb (2003a) find that family ownership and control over a firm can improve firm performance or be detrimental if the family becomes entrenched and degrades firm performance (Anderson and Reeb, 2003b). Increased family's ownership and control may also magnify the conflict of interest between family (majority) and non-

---

[5] Directors are delegated by shareholders to monitor the management and also have power on management's decisions. The agency problem between directors and shareholders thus may result in a decrease in firm performance.

family (minority) shareholders (Villalonga and Amit, 2006).[6] Independent directors, however, can be invited to sit on a board to protect minority shareholders' interest by hindering dominant or family shareholders' opportunistic or expropriation behaviors (Anderson and Reeb, 2004).

If the firm performance declines, owners of family firms may have more to lose (e.g. prestige or jobs for relatives) than the other non-family shareholders do. Due to loss aversion (Kahneman and Tversky, 1979), these family directors (or family shareholders) may prefer avoiding losses to receiving gains with uncertainty. Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, and Moyano-Fuentes (2007) suggest that family will be loss averse to threats to socioemotional wealth (e.g. relinquishing family control) and will be willing to take risky alternatives, such as changing the makeup of the board, to mitigate those threats. Non-family directors, in particular independent directors, can bear the responsibility for poor performance and face the pressure for departure.

In this essay, we use the negative binomial regression model to examine independent director departures in Taiwanese firms. We examine the association between the number of departures and financial reporting quality. We also explore whether the number of departures is related to board and ownership composition, when firm's past performance declined. We control for (1) the interaction of family shareholdings and past firm performance, (2) departure rate of non-executive directors (this proxies for omitted variables causing director departure in general), (3) board size, (4) if CEO also serves as chairman of the board, and (5) year and industry effects.

---

[6] In agency problem II, Villalonga and Amit (2006) suggest that higher firm shares owned by majority (family or individual) shareholders may increase the incentive to expropriate minority shareholders. Villalonga and Amit (2006) find that (1) family ownership creates firm value only when founder is in control and (2) the firm value would be destroyed when descendent serves as CEO.

First, the results from the negative binomial regression model indicate that the number of independent director departures is positively related to accounting restatements. Consistent with Srinivasan's (2005) finding among the U.S. firms, our finding supports the view that deteriorating financial reporting quality is related to the departure of independent directors. The robustness of results is confirmed by using departure rate as the dependent variable in an ordinary least squares (OLS) regression model. Moreover, since Taiwanese independent directors are mainly motivated by non-pecuniary rewards associated with a directorship, the results suggest that independent directors in Taiwanese firms suffer significant non-pecuniary losses when they are forced off from a board.

Second, the number of independent director departures is found to be positively related to the proportion of family shareholdings in Taiwanese firms from 2002 to 2006, both among all firms and family firms in the sample. In the robustness test, we further find that the family shareholding is positively related to departure rate among firms following non-declined past performance but not among firms following declined past performance. [7] This result is consistent with independent director's role for intense monitoring and is similar to Anderson and Reeb's (2004) suggestion that independent directors can protect minority shareholders' interest by hindering dominant or family shareholders' opportunistic or expropriation behaviors.

Lastly, we examine the changes in firm performance prior to and after departures of independent directors. We find that changes in the ratio of operating income to assets

---

[7] We use changes in market-to-book ratio (ΔMB) between the previous and the current year to represent changes in firm performance. Firms are classified as with non-declined past performance if $\Delta MB \geq 0$ and as with declined past performance if $\Delta MB < 0$.

5

generally declined prior to departures, which is consistent with agency theory and the finding of Denis and Denis (1995) on CEO turnovers. Consistent with Huson, Malatesta and Parrino's (2004) finding on the investors' anticipation of improved firm performance subsequent to managerial turnovers, we find positive changes in market-to-book ratio at the period of one-, two-, and three-years after the departures. However, also like Huson, Malatesta and Parrino (2004), we do not find significant improvement in accounting performance, such as return on assets or return on equity, following the departures of independent directors. This finding implies that investors' expectations for improved operating performance are not realized on an accounting basis.

This essay contributes to the current board turnover literature by focusing on the departure of independent directors, particularly in firms with concentrated family ownership. Most prior research examines the relations between firm performance and typical governance measures, such as board composition, board turnover, or CEO turnover, within publicly listed firms but not within ownership concentrated firms.[8] Our results for Taiwanese firm are not only consistent with those for U.S. firms but they may also be applicable to firms in East Asian countries due to similar corporate governance characteristics across the region.[9]

---

[8] Related research with firms in developed economy countries can be found in Denis, Denis and Sarin (1997); Denis and Sarin (1999); Ang, Cole and Lin (2000); La porta, Lopez-De-Silanes, Shleifer and Vishny (2002). Related research with firms in emerging market countries can be found in La Porta, Lopez-de-Silanes and Shleifer (1999); Gibson (2003); and Lins (2003).

[9] Our findings are consistent with the positive association between accounting restatements and departuressuggested by Fich and Shivdasani (2006) and the positive association between family shareholding and departures suggested by Anderson and Reeb (2004). Examples of common characteristics for countries in the East-Asia region include: weak shareholder protection, high ownership concentration, a predominance of family control, and an abundance of pyramidal groups and cross-holdings [La Porta, Lopez-de-Silanes and Shleifer (1999); Claessens and Fan (2002); Claessens, Djankov, Fan and Lang (2002); Faccio and Lang (2002).]

The paper is organized as follows: Chapter II reviews literature regarding the director turnovers and firm performance, the prospect theory and loss aversion, and the corporate governance and family control in Taiwan. Chapter III sets forth the theoretical background and literatures that the research draws from and our research hypotheses. Chapter IV presents our data and research methods. The discussion of results, including robustness tests and firm performance after departures, appears in Chapter V. The conclusion is then presented in Chapter VI.

CHAPTER II

LITERATURE REVIEW

2.1 Relation between Performance and Director Turnover for Independent

Directors

Having independent directors on a corporate board can be beneficial to a firm. Fama and Jensen (1983) suggest that U.S. independent directors act as arbiters among managers and minimize agency problems between managers and shareholders. Further, firms can use independent director appointments to signal to the market that the firm has expertise for decision making and for preventing collusion between managers. In support of this view, Helland and Sykuta (2005) find that U.S. companies with more outside directors sitting on the boards are less likely to be targets of shareholder litigation.[10] They also suggest that boards with higher outside director concentration are more effective in monitoring management.

Managers might not be the only party held responsible for poor firm performance.[11] Independent directors may also face pressure from shareholders who suffer from poor firm performance. Fama (1980) suggests independent directors may be disciplined by the market for prior performance in monitoring. If a company performs

---

[10] Helland and Sykuta find the firms with (1) higher proportion of inside and gray directors on the board and (2) smaller board size are more likely to be the defendants in securities litigation.

[11] For example, Weisbach (1988) finds that firm performance is frequently used by outsider-dominated boards to monitor CEOs.

poorly financially, independent directors tend to bear the consequence (Fich and Shivdasani, 2006) and may be voted off the board or even lose board seats at other firms (Srinivasan, 2005).[12] Although Hermalin and Weisbach (1988) find a weak relationship between poor firm performance and the departure of outside directors, they also find evidence indicating that outside directors are typically added to the board following poor firm performance. Overall, the literature suggests that independent directors can serve effective monitors for shareholders; however, if they fail in this responsibility they are often removed from the board.

2.2 Prospect Theory and Loss Aversion

Kahneman and Tversky (1979)'s prospect theory may explain family directors' (or family shareholders') decisions to force independent directors' departure when firm performance declines.[13] Kahneman and Tversky postulate that individuals define their reference point, frame the outcomes relative to it, and then evaluate choices based on gain or loss relative to reference point.[14] In loss aversion, Kahneman and Tversky (1979)

---

[12] In addition, director turnover is suggested to be related to a reduction in firm performance. For example, Denis and Sarin (1999) suggest that board changes are strongly related to prior stock price performance. Hermalin and Weisbach (2003) also suggest that the factors influencing director turnover include firm performance, CEO turnover, and change in ownership structure.

[13] In prospect theory, Kahneman and Tversky (1979) distinguish two phases in the process of choice: (1) editing (also named as framing in Tversky and Kahneman, 1986): preliminary analysis of prospected offers and (2) valuation: to evaluate the changes or difference in each choice. In the value function, individuals concern both (1) the reference point represented by the asset position and (2) the magnitude of change from reference point. Tversky and Kahneman (1992) suggest that in the classic expected utility theory, "utility of an uncertain prospect is the sum of the utilities of the outcomes, each weighted by its probability" (p.299). Two modifications derived from empirical evidence are suggested by Tversky and Kahneman: "(1) the carriers of value are gains and losses, not final assets; (2) value of each outcome is multiplied by a decision weight, not by an additive probability" (p.299).

[14] The reference point is the base that decision makers frame the problem. An outcome can be viewed as gain or loss depends on how individuals define the reference point. The decision maker defines

suggest that individuals prefer avoiding losses, relative to their reference point, to receiving gain with uncertainty.[15] As a result, family members could take low success probability risks to maintain their reference point of firm performance.

The desire to take the risk of replacing directors could be particularly strong in family-held firms, since family directors have more to lose than money. Family directors can lose the prestige of owning the firm, the perks that go with ownership, jobs they are able to offer to relatives, and so on. For example, Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson and Moyano-Fuentes (2007) refer the non-financial aspects of the firm that meet the family's affective needs as "socioemotional wealth" such as "identity, the ability to exercise family influence, and the perpetuation of the family dynasty" (p.106).

2.3 Corporate Governance and Family Control in Taiwan Compared to Other Countries

Although Taiwanese firms generally exhibit weaker governance characteristics relative to U.S. firms, prior studies have shown that some corporate governance features in Taiwanese firms are typical in other countries around the world, particularly concentrated ownership and significant family-control.[16] La Porta, Lopez-de-Silanes,

---

the reference point, the valuation function, and the weight of choices and then evaluates the problem based on gain or loss relative to reference point.

[15].Similarly, Tversky and Kahneman (1986) suggest that individual's "response to losses is more extreme than the response to gains… (p.s258)" Kobberling and Wakker (2005) also describe agents with loss aversion as " more sensitive to losses than to gains… (p.120)" They suggest that for an agent with loss aversion, the utility function is steeper for losses than for gains.

[16] Examples of weaker governance features in Taiwanese firms than those in the U.S. firms include relatively lower institutional ownership, lack of effective audit committees, an inactive market for corporate control, defective law enforcement, and fewer shareholder rights (Lemmon and Lins, 2003; La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 2002; Yeh and Woidtke, 2005). The comparison of

Shleifer and Vishny (1998) investigate shareholding concentration and find that the average ownership of the three largest shareholders is 46% in 49 countries worldwide, 20% for the 10 most valuable companies in the U.S., and 18% for firms in Taiwan. Based on their findings, Taiwan is one of seven countries, including the United States, Australia, United Kingdom, Japan, Korea, and Sweden, with an average concentration measure below 30%.[17]

Claessens, Djankov and Lang (2000) investigate family ownership concentration and find it is more common in small firms than in large firms among nine Asian countries.[18] For example, the percentage of family controlled firms among the largest 20 firms in Japan, Korea, and Taiwan is 5%, 20%, and 15%, respectively. Yet, the percentage of family-controlled firms among the smallest 50 publicly traded firms in Japan, Korea, and Taiwan is 57%, 97%, and 80%, respectively. According to Claessens, Djankov and Lang's finding on the degree of concentration in family controlled firms, Taiwanese firms have the second lowest family ownership concentration, behind those in Japan, among firms in nine Asian countries.[19]

A large body of literature analyzes the impact of U.S. family ownership and control on corporate governance features. Anderson and Reeb (2003) suggest that

governance features in Taiwan to other countries can be found in La Porta, Lopez-de-Silanes and Shleifer (1999), Claessens, Djankov, Fan and Lang (2002), Faccio and Lang (2002), and Yeh and Woidtke (2005).

[17] P.1146-1148, La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998).

[18] P.105-109, Claessens, Djankov and Lang (2000). These nine Asian countries include Hong Kong, Indonesia, Japan, Korea, Malaysia, Philippine, Singapore, Taiwan, and Thailand.

[19] Concentration is measured by (1) the average number of firms controlled by each family and (2) the proportion of total asset value controlled by each of the top 1, 5, 10, and 15 families. The average number of firms per family is 1.17 in Taiwan and 1.04 in Japan. The percentage of total assets controlled by the top 1, 5, 10, and 15 families is 4.0%, 14.5%, 18.4%, and 20.1%, respectively, in Taiwan. For Japanese firms, these percentages are 0.5%, 1.8%, 2.4%, and 2.8%, respectively.

controlling families of U.S. firms understand the business and that involved family members view themselves as the stewards of their firms.[20] In other research, Anderson and Reeb (2003) suggest that when U.S. families have greatest control of the firm, the potential for entrenchment and poor performance is also greatest.[21] Villalonga and Amit (2006) further examine the impact of family ownership, control, and management on U.S. firm value. They find that the value of family firm will increases if the founder serves as CEO or as chairman with hired CEO, but value will decreases if a descendant serves as CEO.[22] Regarding the conflicts of interest in family firms, Villalonga and Amit suggest that the cost of conflicts between family and non-family shareholders is lower in founder-CEO firms than that in descendent-CEO firms.[23]

Yeh and Woidtke (2005) research family firms in Taiwan and find that poor governance exists when boards are dominated by affiliates of the controlling family. They suggest the proportion of directors that represent a controlling family appears to be a reasonable proxy for corporate governance quality. Yeh, Lee, and Woidtke (2001) also suggest that high founding family ownership but low founding family presence on the

---

[20] Anderson and Reeb (2003) find a positive relation between family members CEOs (founders or founder descendants) and accounting profitability measures such as ROA and Tobin's Q. However, the better market performance only exists in the firm with founder CEOs or outside-hired CEOs. They also find that firms with continued founding-family presence exhibit significantly better accounting and share price performance.

[21] Anderson and Reeb (2003) find evidence that the firm performance first increases with founding-family ownership but later decreases with higher levels of family ownership.

[22] Villalonga and Amit (2006) also find that family control mechanisms such as dual share classes, pyramids, and voting agreements are found to reduce the founder's premium.

[23] Villalonga and Amit compare the cost of conflict (measured by difference in Tobin's Q) (1) between owners and managers (Agency cost I) and (2) between large and minority shareholders (Agency cost II).

board can be an effective way to decrease conflicts of interest between majority and minority shareholders in Taiwanese family firms.[24]

---

[24] Yeh, Lee and Woidtke (2001) also find higher ROA exists when firm ownership is more broadly distributed and where family ownership is less than their15% critical control level.

CHAPTER III

THEORY AND HYPOTHESES

3.1 Agency Theory, Prospect Theory and Loss Aversion

According to agency theory (Jensen and Meckling, 1976), principal and agent problems may arise due to conflict of interests.[25] These conflicts may occur as a result of the separation of ownership and control and when the agent's goals and actions for utility maximization are not in the best interest of the principal. The independent directors' role is to minimize agency conflicts (Fama and Jensen, 1983). Fama (1980) suggest that independent directors not only monitor upper management for shareholders but also are disciplined by the market, when they are ineffective monitors.[26] Forced termination of directorship is one example of discipline and is found to be related to poor firm performance (Fich and Shivdasani, 2006). Thus, we expect to apply agency theory to explore the impact of firm performance on the departure of independent directors in Taiwanese firms.

---

[25] The origin of agency theory can be traced to the concept of risk sharing (Wilson, 1968) among individuals or group when each party has different attitude toward risk (Eisenhardt, 1989). Jensen and Meckling (1976) expand the concept by considering agency problems that occur among parties with different goals due to the separation of ownership and control and suggest the ownership structure aligns managers' interest with the firm owners' interest. Jensen and Ruback (1983) also extend the agency theory to the market of corporate control, such as merger and acquisitions.

[26] Fama (1980) also suggest the capital market and labor market as controlling mechanisms for both top managements and board of directors.

In prospect theory and loss aversion, Kahneman and Tversky (1979) suggest that individuals evaluate choices based on gain or loss relative to reference point and prefer avoiding losses to receiving gain with uncertainty. When firm performance declined in family firms, family directors (or family shareholders) have more to lose than pecuniary interest, such as the "socioemotional wealth" suggested by Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson and Moyano-Fuentes (2007). Family directors (or shareholders) could have stronger intention to replace independent directors than the other non-family directors (or shareholders) do. Thus, we expect to apply prospect theory and loss aversion to explain the pressure toward independent director departures from family directors and from the other non-family directors, such as institutional directors, in family firms with declined performance.

3.2 Research Hypotheses

Overall, the assignment of independent directors has increased among firms in Taiwan; thus, the number of departures is expected to increase as well. In this section we develop hypotheses to explore the possible factors behind the increased number of departures. Later, for the robustness of results, we will examine if these factors are also related to the rate of departures in each firm.

3.2.1 Impact of Prior Performance on Independent Director Departures

The evidence from agency theory in prior research, such as Fama (1980) and Fama and Jensen (1983), has shown that independent directors tend to share the responsibility for poor firm performance with departures. According to agency theory,

poor past firm performance is related to the forced termination of independent directors.[27]

We expect this relation to hold in Taiwan. Therefore, we expect a negative relation between the number of independent director departures and the past firm performance in Taiwanese firms.

H1: The number of independent director departures in Taiwanese firms is *negatively* related to firm's past performance.

3.2.2 Impact of Accounting Restatement on Independent Director Departures

Agency theory suggests that owners will replace directors when they see evidence of ineffective monitoring. The restatement of financial information may indicate deterioration in firm's financial reporting quality, which may imply sub-standard monitoring by directors, in particular independent directors. In accounting research, Srinivasan (2005) find that U.S. independent directors are terminated for financial reporting failures such as accounting restatements.[28] Similarly, we expect a positive association between the number of accounting restatements, which is used to proxy for the deterioration in firms' financial reporting quality, and the departure of independent directors in Taiwanese firms.

---

[27] The negative impact of poor firm performance to independent director can be found in Fich and Shivdasani (2006) and Srinivasan (2005). A related finding by Weisbach (1988) suggests that boards dominated by outside directors are more likely to fire underperformed CEOs. In addition, Denis and Denis (1995) found a positive relationship between forced CEO turnover and the changes in operating income to total asset ratio.

[28] Srinivasan (2005) find that the turnover of outside directors increases with the severity of income-decreasing restatements in the firm. The likelihood of departure is particularly high for outside directors in audit committees. Departing outside directors in such circumstances may also lose directorships in other firms following a restatement.

H2: The number of independent director departures in Taiwanese firms is *positively* related to the number of accounting restatements.

3.2.3 Impact of controlling family's shareholding on Independent Director Departures

In accord with agency theory, Anderson and Reeb (2004) suggest that the U.S. independent directors can be invited to sit on a board to mitigate agency problems between majority and minority shareholders. They suggest that independent directors can protect minority shareholders' interest by hindering dominant or family shareholders' opportunistic or expropriation behaviors. Similarly, in accord with agency theory and due to minimal conflicts of interest, we expect that independent directors in Taiwanese firms provide intense monitoring over the board's operation and may deter family shareholders from expropriating minority shareholders' interest.[29] Because family ownership of a firm can result in many conflicts of interests with other shareholders, we expect that the pressure to replace the independent directors by family members will increase as the controlling family owns more shares in the firm. Thus, we expect to see that higher family shareholdings are related to more independent director departures in Taiwanese firms.

H3: The number of independent director departures in Taiwanese firms is *positively* related to the proportion of controlling family's shareholdings.

---

[29] Independent directors by law have no substantive relationship with family owners, with management of the firm, and have less than one percent of the stocks of the firm; therefore, they are more likely to respond to concerns expressed by minority shareholders.

3.2.4 Impact of Board Composition and Ownership Structure on Independent

   Director Departures

In the next two hypotheses, we apply prospect and loss aversion theories to explain departures in family firms. The hypotheses developed in this section along with the hypotheses developed from agency theory in the previous sections provide a means to understand which theories are consistent with the evidence on independent director departures.

If the firm performance declines, owners of family firms have socioemotional wealth to lose (e.g. prestige or jobs for relatives) in addition to monetary wealth.[30] In contrast, institutional investors can only lose monetary wealth and simply shift resources to another company, incurring only transaction costs. This contrast leads to differing predictions by prospect theory.

According to prospect theory, family members will be willing to try risky alternatives to protect their welfare at the reference point, such as socioemotional wealth. Replacing independent directors is a risky alternative that family members may try. Replacement is risky since new independent directors will have less experience with the firm's operation.

The theory implies that, due to family members' loss aversion, the directors representing the controlling family will respond more intensely to a decrease in firm value than the other directors. Pressure for replacement can also come from directors (or

---

[30] For example, Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson and Moyano-Fuentes (2007) suggest that family firms will be loss averse to the threats to socioemotional wealth (e.g. relinquishing family control) and be willing to take risky alternatives to mitigate those treats. For example, family may make risky decision (and bearing the possible negative consequence) to improve firm performance and thus to protect family's socioemotional wealth.

shareholders) representing institutional investors, due to the loss of monetary value.[31] So, based on prospect and loss aversion theories, we expect that, in family firms following declined performance, the pressure for independent director departures will be stronger from family directors/shareholders, all else equal, than the pressure from other directors/shareholders, including institutional investors.[32] We use the proportion of board seats held by family (and institutional) directors to measure the impact on independent director departures from family/institutional directors. Similarly, the impact on independent director departures from family/institutional shareholders is measured by the proportion of firm shares owned by each shareholder category.

H4: The number of independent director departures in Taiwanese firms is positively related to the proportion of director seats owned by family and by institutional *directors*. Family *directors* have stronger impact on the number of independent director departures than institutional *directors*.

H5: The number of independent director departures in Taiwanese firms is positively related to the proportion of firm shares owned by family and by institutional *shareholders*. Family *shareholders* have stronger impact on the number of independent director departures than institutional *shareholders*.

---

[31] In response to the decline in firm value, institutional directors may suggest replacing independent directors for better monitoring rather than immediately switch their investment to the other firms.

[32] The change in firm performance is measured by change in market-to-book as used by Anderson and Reeb (2003).

CHAPTER IV

DATA AND METHODS

4.1 Data

The sample includes fiscal year-end data of publicly listed companies in Taiwan

from 2002 to 2006. Data for the departure of independent directors is hand collected from

the corporate governance profiles in the Market Observation Post System (MOPS)

website provided by Taiwan Stock Exchange (TWSE).[33] We first check the company

profile link in the MOPS website and collect the name list of independent directors at

each firm. Next we compare the name list of independent directors across two

consecutive years to identify the independent directors who departed the next fiscal year.

For example, if an independent director's name is listed on the board at the end of 2002

but not at the end of 2003, we say that this independent director left the board during the

2002-03 periods and then add it to the number of departures in the firm. The maximum

and minimum departure per firm for a given year in our sample is four and zero

departures, respectively. The departure rate of independent directors is calculated by

dividing the number of independent director departures by the number of director seats in

the firm. Other company specific information, such as accounting information, share

price, accounting restatements, and board/ownership structure, is collected from the

---

[33] The web link for MOPS is: newmops.twse.com.tw and emops.twse.com.tw/emops_all.htm (English). The web link for TWSE is: www.twse.com.tw/ch/ and www.twse.com.tw/en/ (English).

Taiwan Economic Journal (TEJ) database.[34] Lastly, we combine the departure data with

board and accounting data to create the complete dataset.

Throughout our research, a firm is classified as family-held if the family

members' shareholding exceeds or equals 15% in the TEJ database; otherwise the firm is

classified as a non-family-held firm.[35] In addition, firms with negative change in market-

to-book ratio in previous year $\left(MB_t - MB_{t-1} < 0 \right)$ are classified as firms with a decline in

past performance; otherwise $\left(MB_t - MB_{t-1} \geq 0 \right)$ the firm is classified as not having a decline

in past performance.[36]

The complete sample consists of 525 firms with independent directors on the

board.[37] Summary statistics of the complete sample are presented in Table 2. We also

create subset samples for further examination, including datasets of family/non-family

firms and firms with declined/non-declined past performance (Table 3 to Table 7).

Characteristic of samples will be described in the next section. In section 4.3, we will

discuss the model and related variables to examine independent director departures.

---

[34] The web link for TEJ is: www.tej.com.tw/twsite/ and www.finasia.biz/ensite/ (English). Yeh and Woidtke (2005) use the same database for financial data to examine the determinants of board composition and firm valuation in Taiwan.

[35] We apply the 15% cut-off level used by Yeh, Lee and Woidtke (2001) to divide our sample into two subsets: family-held firms and non-family-held firms. Yeh, Lee and Woidtke (2001) adopt the 15% cut-off level in the sample consisting firms in Taiwanese firms and get similar results as those in Claessens, Djankov and Lang (2000), who adopt 20% cut-off level to divide the sample in Asian economies. However, Yeh, Lee and Woidtke (2001), find no significant results with the 20% cut-off level.

[36] The change in market-to-book (M/B) ratio is used to measure change in firm performance; as used by Anderson and Reeb (2003). The M/B ratio as performance measure is also used by Claessens, Djankov, Fan and Lang (2002) and La porta, Lopez-De-Silanes, Shleifer and Vishny (2002).

[37] To focus on the departure of independent directors, we exclude the firms with no independent directors on the board

4.2 Summary Statistics

In Table 1, we present the data regarding numbers and departure rates of directors in Taiwanese publicly listed firms between 2002 and 2006. We first list the number of independent directors at the end of each year and the number of departures during the next year. For example, 42 out of 211 independent directors recruited in 2002 left their directorship by 2003. We find that even though the number of departures increases in each year (as expected since independent directors assignments are increased in accordance with TWSE regulations), the rate of departure has been stable as more firms are required to add independent directors to the board. The number and rate of departures are shown graphically in Figure 1.

In the middle of Table 1, we present a comparison turnover rate, the departure rate of non-executive directors.[38] Compared to other directors on the board, non-executive directors share the most similarity with independent directors except that there is no 1% shareholding restriction applied to non-executive directors.[39] The results indicate that the departure rates of non-executive directors, as compared to the departure rates of independent directors, are higher for two years and lower for one year. We perform a proportion z-test and find no significant difference between the departure rate of independent directors and the departure rate of non-executive directors. In Figure 2, we further compare the departure rate of executive, non-executive, and independent directors graphically and find that independent directors and non-executive directors have similar

---

[38] The non-executive directors represent the directors who are neither independent directors nor holding executive positions such as chairman of the board, CEO, or executives in the firm, based on the director lists information on the MOPS website.

[39] For example, neither non-executive directors nor independent directors have full-time job position in the directed firm. Non-executive directors generally own more shares than independent directors.

patterns in departure rates. This Figure indicates no extraordinary factors involved in the departure of independent directors. On the other hand, executive directors, who have far more to lose by departing from the firm, have relatively lower departure rates than the other directors.[40] Overall, the departure rate of independent directors in Taiwan has not changed significantly since 2002 and is not significantly different from the group most like them: the non-executive directors.

Next, in Table 2, we list the departures and firm statistics of 525 Taiwanese publicly listed firms (with independent directors on board) from 2002 to 2006 in the full sample. As compared to the U.S. firms based on Yermack (1996), Anderson and Reeb (2004) and Villalonga and Amit (2006), we find that Taiwanese publicly listed firms have smaller board size and higher director turnover rates.[41] For example, the average of 6.9 director seats per firm in Taiwan is lower than the 12.25 seats among Forbes 500 U.S. firms (Yermack, 1996) and the 11.44 seats among S&P 500 firms (Anderson and Reeb, 2004).[42] For director turnovers, the combined 13.57% departure rate of independent and non-executive directors in Taiwanese firms is higher than the 8.3% director departure rate in Forbes 500 U.S. firms (Yermack, 1996).[43] The relatively higher departure rate of

---

[40] At the bottom of Table 1, we also report the result of proportion test and find that there is significant difference between the departure rate of independent directors and that of executive directors.

[41] The sample in Yermack (1996) comprises 452 Forbes 500 firms from 1984 to 1991. The sample in Anderson and Reeb (2004) comprises 1992 S&P 500 firms from 1992 to 1999. The sample in Villalonga and Amit (2006) comprise 508 Fortune 500 firms from 1994 to 2000.

[42] The sample period of Yermack (1996) is from 1984 to 1991. According to Anderson and Reeb (2004), the average board size for S&P 500 firms at the period of 1992 to 1999 is 11.44 seats per firm

[43] The departure rate is calculated as the fraction of directors who leave during the next year. The director turnover in Yermack (1996) is the fraction of board members (all directors, including the outside directors) who leave before the next annual meeting (p.191).

directors in Taiwan can be due to smaller average firm size as compared to the U.S. firms.[44]

From Table 3 to Table 7, we investigate subset samples for further features of firms in Taiwan. In Table 3, we find that the 396 observations of family firms and 129 non-family firms comprise about 75% and 25%, respectively, of all the 525 firms in the full sample. The proportion of family firms in Taiwan (75.4%) is larger by at least a factor of two than that in the U.S. (32.6% in Anderson and Reeb, 2004; and 37% in Villalonga and Amit, 2006). In Table 4, among all the 525 firms, 311 firms (59.2%) are classified as firms with non-declined past performance ($MB_t - MB_{t-1} \geq 0$). The remaining 214 firms (40.8%) are classified as firms with declined past performance ($MB_t - MB_{t-1} < 0$). In Table 5, among the 311 firms with non-declined past performance, 236 firms (75.9%) are family firms and 75 firms (24.1%) are non-family firms. In Table 6, among the 214 firms with declined past performance, 160 firms (74.8%) are family firms and 54 firms (25.2%) are non-family firms. In Table 7, we also divide the whole sample into 269 firms whose share returns equaled or outperformed the industry median return and 256 firms whose share returns underperformed the industry median return.

We further look into the number of departures and the other variables in each dataset to see if there is any pattern related to our hypotheses. In Table 2, for firms in the full sample between 2002 and 2006, the number of independent director departures in

---

[44] For example, Denis, Denis and Sarin (1997) find that top executive turnover is less likely to occur in larger firms. As a proxy of firm size, the mean assets of the Fortune 500 firms during 1994-2000 are $9,510 million (Villalonga and Amit, 2006). The average total assets of Taiwanese firms in our sample period (2002-2006) are 24.714 billion in Taiwan Dollar (equivalent to $706.11 million). In addition, we also check the mortality rate in Taiwan since the departure of independent directors can be due to disease or health issues. We find that, between 2002 and 2006, the average median mortality rate for the age range of 45-to-59 and 60-to-74 is 3.09% and 13.31%, respectively. The data implies that the mortality rate can partially explain the 4.71% independent director departure rate in our sample.

each firm ranges from zero to four in our sample, with an average of 0.3086 departures

per firm per year. The average change in past firm performance, ΔOI/TA at the (-3,-1)

window, is -1.52% and the average number of accounting restatements is 0.038.[45]

Controlling families hold more director seats (44.15%) than institutional investors

(5.40%). This feature of concentrated family control among Taiwanese firms is consistent

with the finding of Yeh, Lee and Woidtke (2001) and Yeh and Woidtke (2005). In

addition, we find a higher proportion of firm shares owned by institutional investors

(37.57%) than by controlling families (28.15%) in the sample of all firms in Table 2.

Next, we compare the statistics between family and non-family firms in Table 3

and between firms with declined and non-declined past performance in Table 4. In Table

3, the number of departures per firm is higher in family firms (0.328) than that in non-

family firms (0.248). As compared to non-family firms, family firms demonstrate worse

past firm performance and more accounting restatements in the dataset.[46] The proportion

of family director seats and family shareholdings are both higher in family firms than in

non-family firms, with a 10% level of significance on the difference. The data in Table 3

seems to imply that, in family firm, the management skill is not hereditary although

family has more involvement in both board and ownership composition. In Table 4, the

number of departures per firm is higher in firm with declined past performance (0.341)

than that in firm with non-declined past performance (0.286). We also find worse

---

[45] In the subset sample of non-family firms, we found two firms with accounting restatements. In those two observations, one firm has only one restatement but the other firm has ten restatements, which is due to default and the following ownership restructure in that firm. We decide to treat this observation with ten restatements as an outlier and drop it from our sample. The treatment thus yields only one firm with accounting restatement in the sample of non-family firms. (as shown in Table 5)

[46] The change in OI/TA at the (-3, -1) window is -1.85% for family firms and is -0.5% for non-family firms. The number of accounting restatements for family and non-family firms is 0.05 and 0.01, respectively.

changes in past performance and more accounting restatements among firms with declined past performance than firms with non-declined past performance. [47] The proportion of director seats and firm shares owned by institutional investors are also higher among firms with declined past performance as in Table 4.

We further compare family and non-family firms among firms with non-declined past performance (Table 5) and among firms with declined past performance (Table 6). In Table 5, among firms with non-declined past performance (ΔMB$\geq$0), the number of departures per firm is higher in family firms (0.318) than that in non-family firms (0.187), with a 10% level of significance on the difference. Family firms also demonstrate worse changes in past performance and more accounting restatements than non-family firms do.[48] The proportion of family director seats and family shareholdings are both higher in family firms than those in non-family firms and the difference is all significant at 1% level. The proportion of board seats owned by institutional investors, however, is higher (8.30% vs. 3.54%, with 1% level of significance) in non- family firms than family firms.

In Table 6, among firm with declined past performance (ΔMB<0), the number of departures per firm in family firms (0.344) is close to that in non-family firms (0.333). As in Table 5, family firms also demonstrate worse changes in past performance and more

---

[47] The change in OI/TA at the (-3, -1) window is -2.04% for firms with declined past performance and is -1.16% for firms with non-declined past performance. The number of accounting restatements for firms with declined and non-declined past performance is 0.05 and 0.03, respectively.

[48] The change in OI/TA at the (-3, -1) window is -1.48% for family firms and is -0.16% for non-family firms. The number of accounting restatements for family and non-family firms is 0.04 and 0, respectively.

accounting restatements than non-family firms do.[49] The proportion of family director seats and family shareholdings are both higher in family firms and the differences are all significant at 1% level. Similar to the finding in Table 5, the proportion of director seats owned by institutional investors is higher (9.77% vs. 5.30%, with 1% level of significance) in non- family firms than in family firms.

Finally, in Table 7, we find that the number of departures per firm is higher in firms underperformed industry median return (0.348) than firms performed at least as well as their industry median (0.271). The underperformed firms also demonstrate worse changes in past performance and more accounting restatements than the non-underperformed firms do.[50] The underperformed firms also have more family directors on board (45.48% vs. 42.74%) than non- underperformed counterparts, with a 10% level of significance for the difference.

In Table 8 and Figure 3, we also compare the rate of departures per firm in each subset sample and find consistent patterns of departures as those from Tables 2 to Table 7. For example, we find that the family firms have higher rates of departure (per firm) than non-family firms do (32.83% vs. 24.81%, at 10% level of significance). A similar pattern is found among firms with non-declined past performance; family firms have a higher departure rate (31.78%) than non-family firms do (18.67%), with a 5% level of significance on the difference. In Table 9, we list the number and proportion of departure

---

[49] The change in OI/TA at the (-3, -1) window is -2.40% for family firms and is -0.98% for non-family firms. Number of accounting restatements for family and non-family firms is 0.06 and 0.02, respectively.

[50] The change in OI/TA at the (-3, -1) window is -2.15% for underperformed firms and is -0.92% for non- underperformed firms, with 1% level of significance. Number of accounting restatements for underperformed and non-underperformed firms is 0.06 and 0.02, respectively, with 5% level of significance.

observations per firm in full sample. 75.81% of firms in the dataset have no independent director departure over the 2002-06 period. Firms with one and two departures enclose 18.10% and 5.71%, respectively, of total observations. There is only one firm (0.19%) for each of the three and four departures category. The data indicates that most of the firms with independent director turnovers have either one or two departures over the 2002-06 period. Firms with three or more independent director departures are rare in the dataset.

4.2.1 Sample Statistic Summary

Based on the univariate sorts in from Table 1 to Table 9 and form Figure 1 to Figure 3, we find the following to be major features of independent director departures, financial performance, and board/ownership structures among Taiwanese firms from 2002 to 2006:

(1) Departure rate of independent directors is not different from that of non-executive directors (Table 1 and Figure 2).

(2) Family firms have more departures per firm (in number), worse changes in past performance, and more accounting restatements than non-family firms do. The controlling family in family firms also own higher proportion of director seats and shareholding (Table 3, 5, and 6).

(3) Firms with declined past performance have more departures per firm, worse changes in past performance, and more accounting restatements than the firms with non-declined past performance do (Table 4).

These findings imply an association between independent director departures and changes in past performance, number of accounting restatements, and proportion of

28

controlling family's board director seats and shareholdings among Taiwanese firms. However, the sample statistics do not control for other conditions known to influence director turnover. Thus, in the next section, we include control variables by using a negative binomial regression model to examine the possible associations with the sample of all firms, family firms, and firms with declined past performance.

4.3 Models

In Model 1, we use negative binomial regression model with the number of departures as dependent variable to model director departures. A negative binomial regression model is chosen due to the feature of count data.[51] The independent variables account for conditions previously found to explain director departures. In addition, our specification accounts for omitted variables by controlling for the departure of non-executive (non-independent) directors departures. Model 1 is:

$$
\begin{aligned}
\# IndepDirDepart = {} & \alpha + \beta_1 \Delta OI/TA + \beta_2 Accounting \operatorname{Re}statement \\
& + \beta_3 \%FamilyDirOnBoard + \beta_4 \%InstDirOnBoard \\
& + \beta_5 \%ShareByFamily + \beta_6 \%ShareByInstitution \\
& + \beta_7 (\%ShareFMY * \Delta OI/TA) + \beta_8 DepartRateNonExecDir + \beta_9 CEO = Chair \\
& + YearDummies + IndustryDummies + \varepsilon,
\end{aligned}
\tag{1}
$$

where the dependent variable, *#IndepDirDepart*, represents the number of independent director departures in each firm. The first independent variable, *ΔOI/TA*, is the change of

---

[51] In previous research, Logit model is used by (1) Weisbach (1988) for board turnover, (2) Warner, Watts and Wruck (1988) for CEO turnover, and (3) Helland and Sykuta (2005) for outside director turnovers. However, according to Greene (2003), due to the count data used as dependent variable (the number of departures per firm) in our model, adding dummy variables to control for fixed effects (e.g. fiscal year or industry effect) may impair the significance of results. An approach to accommodating this heterogeneity in panel data with count data setting is to apply Poisson model or negative binomial regression model. We choose the negative binomial regression model since it relaxes the implicit assumption that variance equals mean as in the Poisson model.

operating income on total assets over the (-3,-1) year window prior to departure year and is used to proxy for the change in firm's past performance. Our proxy for past performance is based on Denis and Denis' (1995) finding that forced CEO departures are related to declines in firms' operating return on total assets from the third year to the first year before departure; designated here as the (-3,-1) year window.[52] The second independent variable, *AccountingRestatements*, represents the number of accounting restatements in each firm and is used to proxy for changes in firms' financial reporting quality. *%FamilyDirOnBoard* and *%InstDirOnBoard* is the proportion of board seats held by directors representing controlling family and institutional investors, respectively.[53] *%ShareByFamily* and *%SharebyInstitution* represents the proportion of firm shares owned by controlling family and institutional investors, respectively. These proportions are the ratios of common shares owned by family or institutional investors to total shares outstanding.

In addition, we first include an interaction term between *%ShareByFamily* and $\Delta OI/TA$ to address the marginal effect of family shareholdings on departures due to changes in firm's past performance, or vice versa.[54] Next we include the departure rate of non-executive directors, *DepartRateNonExecDir*, to control for omitted variables causing

---

[52] Denis and Denis (1995) find "Firms with forced resignations exhibit a monotonic and statistically significant (at the .05 level) decrease in the level of OIBD/TA from year -3 to year -1" (p.1042).

[53] In Taiwanese firms, the family may allocate the board seats to closely affiliated (a) individual directors, (b) publicly listed companies, (c) privately held companies, or (d) foundations. Thus, the proportion of board seats held by family members (*%FamilyDirOnBoard*) in the model is the proportion of board seats held by directors belonging to the above four family director classes.

[54] For example, if the interaction term is significant, the marginal effect of family shareholdings on departures will increase (decrease) with positive (negative) changes in firm's past performance. Or, if the interaction term is significant, the marginal effect of changes in firm's past performance on departures will increase (decrease) with an increase (decrease) in family shareholdings.

similar non-independent directors to depart. This departure rate represents the fraction of non-executive director departures to the number of director seats in each firm. We also add a dummy variable, *CEO=Chair*, to represent CEO's power over the board. This dummy variable equals to one if CEO is also sitting as chairman on the board, zero otherwise. In addition, the fiscal year and industry fixed effects is controlled with *YearDummies* and *IndustryDummies*, respectively.[55]

To examine the robustness of results from Model, we use departure rate of independent directors as dependent variable in an ordinary least square (OLS) regression model (Model 2), with the same independent variables. The departure rate of independent directors is the fraction of the number of independent director departures to the number of board seats in the firm. Model 2 is:

$$
\begin{aligned}
IndepDirDepartRate = {} & \alpha + \beta_1 \Delta OI / TA + \beta_2 Accounting\,\mathrm{Re}\,statement \\
& + \beta_3 \% FamilyDirOnBoard + \beta_4 \% InstDirOnBoard \\
& + \beta_5 \% ShareByFamily + \beta_6 \% ShareByInstitution \\
& + \beta_7 (\% ShareFMY * \Delta OI / TA) + \beta_8 DepartRateNonExecDir + \beta_9 CEO = Chair \\
& + YearDummies + IndustryDummies + \varepsilon,
\end{aligned}
\tag{2}
$$

---

[55] One limitation of the model is the lack of independent director's age which could be a factor to departure but is not available in the public information of Taiwanese firms.

CHAPTER V

RESULTS

5.1 Results

For the first hypothesis, based on agency theory, we expect that the departure of independent directors is negatively related to firm's past performance. In other words, we expect to see the decrease in ΔOI/TA ratio is related to the increase in independent director's departures, such as Denis and Denis' (1995) finding for CEO turnovers.[56] However, we find a negative but not significant result for firm's ΔOI/TA ratio in the full sample (Sample 1 in Table 10). We further apply our model on the other subset samples (Sample 2 to 4 in Table 10) and do not find significant results to support this hypothesis. We also test the model with the other subset of the data and found no significant results.[57] The results indicate that the ΔOI/TA ratio holds account for CEO turnovers in the U.S. firms but not for independent director turnovers in Taiwan firms. A possible implication is that CEOs are directly accountable for firms' operations and performance. Independent directors, however, are responsible for monitoring but not directly accountable for firms' operations, which can be the reason for the lack of significance in our results. Thus we continue to investigate other factors related to independent director departures.

---

[56] Fama (1980) and Fama and Jensen (1983) suggest that independent directors tend to share the responsibility for poor firm performance. Denis and Denis (1995) found a positive relationship between forced CEO turnover and the OI/TA ratio.

[57] These results are available upon request.

For the second hypothesis, based on agency theory, we expect to see a positive association between accounting restatements and departures. We find that accounting restatement is positively (0.4663***) related to number of departures in the sample of all firms (Sample 1 in Table 10).[58] The coefficient implies that the log of independent director departures is expected to increase by 0.4663 with one additional accounting restatement. For example, for firms with one departure initially, the number of departures is expected to increase to 1.5905 if the number of accounting restatements increases by one. Similarly, with one more accounting restatement, firms with two departures initially are expected to have 3.188 in the departure of independent directors.[59] We also find a significantly positive result in the sample of family firms, where accounting restatement is positively associated (0.4740***) with the number of departures among family firms (Sample 3 in Table 10). We then turn to the sample of family firms with a decline in past performance. Among those family firms with declined past performance, we find a significantly positive association (0.5697***) between accounting restatements and departures (Sample 2 in Table 10). The results from Taiwanese firms are consistent with the finding of Srinivasan (2005) in the U.S. firms and indicate that accounting restatement is positively related to the departure of independent directors in Taiwan. For robustness, we also test our hypothesis among firms underperforming their industry median share returns (Sample 4 in Table 10) and find a similar positive association (0.484***).[60]

---

[58] Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

[59] The calculation can be shown as $0.4663 = \text{Ln}(1.5905) - \text{Ln}(1)$ or $0.4663 = \text{Ln}(3.188) - \text{Ln}(2)$.

To find out why the results are not significant among non-family firms, we further compare the rate of restatements among various subset samples in Table 11 and Figure 4 and find only one observation of an accounting restatement among non-family firms.[61] This accounting restatement is shown in the non-family firm with declined past performance. There is no observation of accounting restatement shown in the sample of non-family firms with non-declined past performance. So, the lack of significant results among non-family firms is likely due to the lack of accounting restatements in the dataset of non-family firms. In addition, in Table 12, we list the number and percentage of accounting restatements per firm in the dataset. 97.52% of firms in the dataset have no accounting restatement during the 2002-06 period. Firms with one and two accounting restatements enclose 1.71% and 0.38%, respectively, of total observations. There is only one firm in each of the three and four accounting restatements category. The data indicates that accounting restatement is a rare event for Taiwanese firms in the dataset. Most of firms with accounting restatements have either one or two restatements (with a combined 2.09% of observations) over the 2002-06 period. Firms with three or more accounting restatements are rare and enclose only 0.38% of observations in the dataset.

---

[60] Jenter and Kanaan (forthcoming in 2009) examine the impact of exogenous industry and market shock on forced CEO turnover. They suggest that the factors driving turnover may have changed from findings of prior literature. For example, they find that "low industry stock returns and low market returns significantly increase the frequency of forced CEO turnovers" in 2,548 U.S. firms from 1993 to 2001. Our finding in sample 4 implies that financial reporting quality may have impact on independent director departures among firms with underperformed share returns.

[61] In the original subset sample of non-family firms, we found two firms with accounting restatements. In those two observations, one firm has only one restatement but the other firm has ten restatements, which is due to default and the following ownership restructure in that firm. We decide to treat this observation with ten restatements as an outlier and drop it from our sample. The treatment thus yields only one firm with accounting restatement in the sample of non-family firms.

For robustness, in Table 13 we further test the possible impact of accounting restatements on departures in an OLS regression model where we apply the departure rate of independent directors as dependent variable. The departure rate is obtained by dividing the number of departures by the number of director seats in each firm.[62] In Table 13, we find similar positive and significant results from the sample of all firms (0.0457***, Sample 1), family firms (0.0449***, Sample 2) and firms underperformed industry median share returns (0.0625***, Sample 5). We also apply the model in the sample of firms with non-declined (Sample 3) and declined (Sample 4) past performance. We find a positive and significant result for accounting restatements in the sample of firms with declined past performance (0.0709***, Sample 4) but no significant result in the sample of firms with non-declined past performance.[63] The results lead to a finding that accounting restatements are positively associated with the departure of independent directors, when the firm is controlled by family and the firm has weaker past performance (relative to either industry share return or change in M/B ratio).

For the third hypothesis, based on agency theory and the finding of Anderson and Reeb (2004), we expect to see higher family shareholdings related to more independent director departures in Taiwanese firms, particularly for firms controlled by a family. With the sample of all firms, we first find that the proportion of shares owned by a family is significantly positive associated (1.4147**, Sample 1 in Table 10) with the number of

---

[62] We also tested the results in OLS regression models with the departure rate calculated by dividing the number of independent director departures by the number of independent directors in the firm. However, we cannot find significant result in any sample so the results are not reported.

[63] For the collinearity diagnostics, we check the value of Variance Inflation Factors and find that (1) no VIF value is larger than 10 among the regression results and (2) the VIF values for accounting restatements range from 1.02 to 1.07 across the samples.

departures. We then examine the model with the dataset of family firms and find similar

positive and significant result (1.5349*, Sample 3 in Table 10).

For robustness, in Table 13, we further test this hypothesis in an OLS regression

model where the departure rate of independent directors in each firm is used as dependent

variable. Consistent with the previous findings in Table 10, we find similar positive and

significant results among (1) all firms (0.0586**, Sample 1 in Table 13) and (2) family

firms (0.0709*, Sample 2 in Table 13). We also find significant results among firms with

non-declined past performance (0.0844**, Sample 3 in Table 13).[64] The results indicate

that the proportion of controlling family's shareholdings is positively related to

independent director departures, particularly in family firms. These results are consistent

with family shareholders terminating independent directors because they monitor

intensely. Our finding support Anderson and Reeb's (2004) opinion that independent

directors can protect minority shareholders' interest by hindering family shareholders'

opportunistic or expropriation behaviors.[65]

To investigate further, we compare the departure rates between family and non-

family firms in Table 8 and Figure 4. In Table 8, we find that family firms have higher

departure rates per firm than non-family firms do (32.83% vs. 24.81%, respectively). The

difference in departure rates is significant at the 10% level. In Table 8, when both firms

have non-declined past performance ($\Delta MB \geq 0$), the difference in per-firm departure rates

---

[64] We also check the value of Variance Inflation Factors for collinearity diagnostics and find that VIF values for the proportion of controlling family's shareholdings range from 1.46 to 1.697 across the samples.

[65] Anderson and Reeb (2004) find the presence of founding-family members on nominating committee is negatively related to the fraction of independent directors on the board. Although our test is restricted by the unavailability of nomination committee data in Taiwanese firms, our finding shows a matching pattern in results as that in Andeson and Reeb's.

between family and non-family firms (significant at the 5% level) is even more obvious (31.78% vs. 18.67%, respectively). The results we find may imply that the chance of family shareholders' opportunistic or expropriation behaviors is higher among family firms.

In the fourth hypothesis, based on prospect and loss aversion theories, we expect that family directors' impact on independent director departures is stronger than institutional directors' impact. However, in the dataset of family firms with declined past performance, we do not find significant results to support this hypothesis (Sample 2, Table 10). Also, we do not find significant results to support the fifth hypothesis, the expected stronger impact on independent director departures from family shareholders than from institutional shareholders. From the other subset samples in Table 10 and Table 13, no significant result is found to support either one of those two hypotheses. Overall, the results found for the third hypothesis support an agency theory explanation of independent director departures in family firms. However, we cannot find significant results to support a loss aversion or prospect theory explanation of independent director departures in Taiwanese firms.

In Table 14, for further robustness check, we test the hypotheses with a sample of family firms which are classified based on 20% family ownership cut-off level, as used by Claessens, Djankov and Lang (2000). Based on the results in negative binomial regression model, we find that, consistent with previous findings in Sample 3 of Table 10, the number of independent director departures is positively related to (1) the number of accounting restatements (0.4348**) and (2) the proportion of shares owned by a family (2.0258**). Furthermore, based on the results in OLS regression model, we find that,

37

consistent with previous findings in Sample 2 of Table 13, the departure rate of independent directors is positively related to (1) the number of accounting restatements (0.0381**) and (2) the proportion of shares owned by a family (0.0907**). The results confirm our original finding that, for family firms in Taiwan, the departure of independent directors is positively associated with (1) accounting restatements and (2) family shareholdings.

In addition, we adjust several control variables for further robustness check in Table 15. First of all, data in Table 11 indicates that there are more family firms (4.8%) have accounting restatements than non-family firms do (0.78%). Thus we add an interaction term, *% Share by Family * Accounting Restatements*, to address the marginal effect of family shareholdings on independent director departures due to changes in the number of accounting restatements, or vice versa. Secondly, we add a dummy variable, *Dummy_Underperformed*, to control for firms underperformed their industry median share returns.[66] Third, we add the proportion of independent directors on the board, *% Indep. Director on Board*, to control for independent directors' presence on the board. Fourth, we rescale the value in the proportion of family/institution shareholdings by two decimal points in the dataset. For example, a 28% shareholding would be addressed as 28 in datasets of Table 15, as compared to 0.28 in datasets of Table 10.[67] Lastly, since the departure of non-executive directors is found to be related to the departure of independent directors in previous tests (Table 10, 13, and 14), we conjecture that it can be a

---

[66] In sample 4 of Table 5, similar test was conducted based on the subset sample with underperformed firms, which encloses only 48.76% (256 out of 525 firms) of the total observations. We conjecture that, in the sample 4 of Table 5, the results may be restricted with the reduced sample size.

[67] The coefficient estimates, after the adjustments, can thus be interpreted as the impact on the log of independent director departures due to one percent changes in family/institution shareholdings.

concurrent event that firms get rid of some independent and non-executive directors when firms perform poorly. Thus, we run two separate models, one controls for the departure rate of non-executive directors and the other does not, to see if the results are consistent with our previous findings.

In Table 15, we first run two models with all adjusted control variables with the dataset of all firms. The departure rate of non-executive directors is kept in the first model (Model 1) and is removed in the second model (Model 2). The results are consistent with previous findings and indicate that both (1) accounting restatements and (2) the proportion of family shareholdings are positively associated with independent director departures. Next, we run those two models with the family firm dataset and find consistent results when the departure rate of non-executive directors in kept in the model (Model 1). In Model 2, where the departure rate of non-executive directors in removed, we find that the number of accounting restatements is consistently significant but the proportion of family shareholdings is barely significant.[68]

5.2 Firm Performance after Independent Director Departure

Based on the results in the previous section, we find that the departure of independent directors is positively related to accounting restatements and family shareholdings in various subset samples. It is possible that independent directors may decide to leave voluntarily or be forced to leave the directorship to share the

---

[68] The probability > Chi Square for the *% Shares by Family* equals 0.1008 in Model 2. In addition, to address the fixed effect problems in Probit, Poisson, or Negative Binomial models (Green 2003), we also try running (1) the Probit model and (2) the Negative Binomial model by observations in each year rather than adding the year dummies. Unfortunately, running the models by year does not yield significant results to be consistent with previous findings.

responsibility of poor performance. Huson, Malatesta and Parrino (2004) examine two hypotheses regarding the forced management turnover: the improved management hypothesis and scapegoat hypothesis. The improved management hypothesis suggests that forced turnover tends to increase managerial quality and therefore the expected firm performance. The scapegoat hypothesis suggests that all managers' quality is alike but only those who are unlucky to have poor past performance got fired.[69] In this section, we look at the post-departure changes in firm performance to see if any firm performance improvement exists after independent directors left the directorship.

In Table 16, we present the $\Delta OI/TA$ during the (-3,-1) year window prior to departure and the changes in market-to-book ratio (MB), return on assets (ROA), and return on equities (ROE) at the period of one-, two-, and three-years following the departures. For the changes in firm performance after the departures, we find positive and significant changes in MB ratio for all three post-departure periods but no significant result for changes in ROA or ROE in any period.

The market-to-book (MB) ratio can be used to proxy for investors' expectations regarding firm's ability to generate higher returns but it also partly proxies for investor sentiment (Dong, Hirshleifer, Richardson and Teoh, 2006; Baker and Wurgler, 2006).[70]

---

[69] The evidence found by Huson, Malatesta and Parrino (2004) indicates firm performance (1) declined preceding turnovers and (2) improved following turnovers, which is in favor of the improved management hypothesis.

[70] Dong, Hirshleifer, Richardson and Teoh (2006) suggest that " … because book value reflects historical costs whereas market price reflects forward-looking prospects … " (p.727) and " … market values reflect mispricing, risk, and differences in true unconditional expected cash flows (or scale). Book value can help filter out irrelevant scale difference … "(p.732). In addition, Baker and Wurgler (2006) examine the relation between investor sentiments and the subsequent cross-section stock returns. They find that when the sentiment is expected to be high (in the beginning), stocks that are attractive to optimists and speculators but unattractive to arbitrageurs, e.g. small, young, unprofitable, non-dividend-paying, high volatility, extreme growth, and distressed stocks, tend to have lower subsequent (future) returns.

Our evidence supports the latter interpretation.[71] The positive change in MB ratio seems to indicate investors' optimistic expectations of firms' future performance; however, we do not find significant results with the changes in ROA or ROE to support that financial performance improvement did occur following the departures of independent directors in Taiwanese firms.[72]

---

[71] The results also support Huson, Malatesta and Parrino (2004) finding on the investors' anticipation of improved operating returns subsequent to managerial turnovers (p.258).

[72] In related research, Huson, Malatesta and Parrino (2004) find consistent results for post-turnover performance improvement (the change of OI/TA at the (-1, +3) window) for forced CEO turnovers. However, they do not find consistently significant results for all turnovers and voluntary turnovers.

CHAPTER VI

CONCLUSIONS

Since 2002 the Taiwan Stock Exchange has required listed firms to have at least two independent directors on the board to improve corporate governance. In this paper, we examine whether the departure of independent directors is related to (1) past firm performance, (2) financial reporting quality, (3) board composition, and (4) ownership structure in Taiwanese publicly listed firms from 2002 to 2006. Consistent with the finding of Srinivasan (2005) in the U.S. firms, we find a positive association between accounting restatements and independent director departures in Taiwanese firms. We also find positive and significant results in the sample of family firms and family firms with declined past performance, based on the results of robustness test. The results suggest that, for firms in Taiwan, independent directors tend to share the responsibility of poor financial reporting or poor monitoring, particularly in family firms. The results also imply that independent directors may decide to leave voluntary due to the changes in family firms' operation leading to declined performance are no longer acceptable.

We find a positive association between departures and the firm shares owned by controlling family in Taiwanese firms. In the robustness test, we also find significant results among family firms, particularly family firms with non-declined past performance.

The evidence implies that family shareholders may be impaired by independent directors from making decisions at the expense of firm value.

For the changes in firm performance after independent director departures, we find positive changes in market-to-book ratio at the period of one-, two-, and three-years after the departures. However, we do not find significant results for improved accounting performance, such as ROA or ROE, following the departures of independent directors, which supports research suggesting that stock prices are significantly influenced by investor sentiment.

The results suggest several opportunities for future work. First, the possible impact of accounting restatements and family shareholdings on departures can be further clarified if a method to classify forced or voluntary departure is available. Thus, it would be possible to compare abnormal returns surrounding departures and post departure performance improvements in forced departures to those in voluntary departures. Second, the results regarding accounting restatements also imply that family firms operate differently from non-family firms in Taiwan. In a market where family firms comprise about 75% of publicly listed firms, an interesting research issue to be explored in the future is why family firms have so many restatements when non-family firms in similar circumstances do not. Finally, the changes of ownership structures surrounding departures can be examined to see if shareholders, including individuals, institutions and controlling families, follow "Wall Street Rules" and "vote with their feet" regarding the replacement of independent directors.

CHAPTER VII

REFERENCES

Anderson, Ronald C., and David M. Reeb, 2003, Founding-Family Ownership and Firm Performance: Evidence from the S&P 500, *Journal of Finance* 58, 1301-1327.

Anderson, Ronald C., and David M. Reeb, 2003, Founding-Family Ownership, Corporate Diversification, and Firm Leverage, *Journal of Law & Economics* 46, 653-680.

Anderson, Ronald C., and David M. Reeb, 2004, Board Composition: Balancing Family Influence in S&P 500 Firms, *Administrative Science Quarterly* 49, 209-237.

Ang, James S., Rebel A. Cole, and James Wuh Lin, 2000, Agency Costs and Ownership Structure, *Journal of Finance* 55, 81-106.

Baker, Malcolm, and Jeffrey Wurgler, 2006, Investor Sentiment and the Cross-Section of Stock Returns, *Journal of Finance* 61, 1645-1680.

Bhagat, Sanjai, and Bernard Black, 1999, The Uncertain Relationship between Board Composition and Firm Performance, *Business Lawyer* 54, 921.

Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan, and Larry H. P. Lang, 2002, Disentangling the Incentive and Entrenchment Effects of Large Shareholdings, *Journal of Finance* 57, 2741-2771.

Claessens, Stijn, Simeon Djankov, and Larry H. P. Lang, 2000, The Separation of Ownership and Control in East Asian Corporations, *Journal of Financial Economics* 58, 81-112.

Claessens, Stijn, and Joseph P. H. Fan, 2002, Corporate Governance in Asia: A Survey, *International Review of Finance* 3, 71.

Denis, David J., and Diane K. Denis, 1995, Performance Changes Following Top Management Dismissals, *Journal of Finance* 50, 1029-1057.

Denis, David J., Diane K. Denis, and Atulya Sarin, 1997, Ownership Structure and Top Executive Turnover, *Journal of Financial Economics* 45, 193-221.

Denis, David J., and Atulya Sarin, 1999, Ownership and Board Structures in Publicly Traded Corporations, *Journal of Financial Economics* 52, 187-223.

Dong, Ming, David Hirshleifer, Scott Richardson, and Siew Hong Teoh, 2006, Does Investor Misvaluation Drive the Takeover Market?, *Journal of Finance* 61, 725-762.

Eisenhardt, Kathleen M., 1989, Agency Theory: An Assessment and Review, *Academy of Management Review* 14, 57-74.

Faccio, Mara, and Larry H. P. Lang, 2002, The Ultimate Ownership of Western European Corporations, *Journal of Financial Economics* 65, 365-395.

Fama, Eugene F., 1980, Agency Problems and the Theory of the Firm, *Journal of Political Economy* 88, 288-307.

Fama, Eugene F., and Michael C. Jensen, 1983, Separation of Ownership and Control, *Journal of Law & Economics* 26, 301-326.

Fich, Eliezer M., and Anil Shivdasani, 2006, Are Busy Boards Effective Monitors?, *Journal of Finance* 61, 689-724.

Gibson, Michael S., 2003, Is Corporate Governance Ineffective in Emerging Markets?, *Journal of Financial & Quantitative Analysis* 38, 231-250.

Gomez-Mejia, Luis R., Katalin Takacs Haynes, Manuel Nunez-Nickel, Kathyrn J. L. Jacobson, and Jose Moyano-Fuentes, 2007, Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence from Spanish Olive Oil Mills, *Administrative Science Quarterly* 52, 106-137.

Greene, William H., 2003. *Econometric Analysis* (Prentice Hall).

Helland, Eric, and Michael Sykuta, 2005, Who's Monitoring the Monitor? Do Outside Directors Protect Shareholders' Interests?, *Financial Review* 40, 155-172.

Hermalin, Benjamin E., and Michael S. Weisbach, 1988, The Determinants of Board Composition, *RAND Journal of Economics* 19, 589-606.

Hermalin, Benjamin E., and Michael S. Weisbach, 2003, Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature, *Economic Policy Review (19320426)* 9, 7.

Huson, Mark R., Paul H. Malatesta, and Robert Parrino, 2004, Managerial Succession and Firm Performance, *Journal of Financial Economics* 74, 237-275.

Jensen, Michael C., and William H. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3, 305-360.

Jensen, Michael C., and Richard S. Ruback, 1983, The Market for Corporate Control, *Journal of Financial Economics* 11, 5-50.

Kahneman, Daniel, and Amos Tversky, 1979, Prospect Theory: An Analysis of Decision under Risk, *Econometrica* 47, 263-291.

Kobberling, Veronika, and Peter P. Wakker, 2005, An Index of Loss Aversion, *Journal of Economic Theory* 122, 119-131.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer, 1999, Corporate Ownership around the World, *Journal of Finance* 54, 471.

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert Vishny, 2002, Investor Protection and Corporate Valuation, *Journal of Finance* 57, 1147-1170.

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert Vishny, 2002, Investor Protection and Corporate Valuation, *Journal of Finance* 57, 1147.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and Finance, *Journal of Political Economy* 106, 1113.

Lemmon, Michael L., and Karl V. Lins, 2003, Ownership Structure, Corporate Governance, and Firm Value: Evidence from the East Asian Financial Crisis, *Journal of Finance* 58, 1445-1468.

Lins, Karl V., 2003, Equity Ownership and Firm Value in Emerging Markets, *Journal of Financial & Quantitative Analysis* 38, 159-184.

Srinivasan, Suraj, 2005, Consequences of Financial Reporting Failure for Outside Directors: Evidence from Accounting Restatements and Audit Committee Members, *Journal of Accounting Research* 43, 291-334.

Tversky, Amos, and Daniel Kahneman, 1986, Rational Choice and the Framing of Decisions, *Journal of Business* 59, S251-78.

Tversky, Amos, and Daniel Kahneman, 1992, Advances in Prospect Theory: Cumulative Representation of Uncertainty, *Journal of Risk and Uncertainty* 5, 297-323.

Villalonga, Belen, and Raphael Amit, 2006, How Do Family Ownership, Control and Management Affect Firm Value?, *Journal of Financial Economics* 80, 385-417.

Warner, Jerold B., Ross L. Watts, and Karen H. Wruck, 1988, Stock Prices and Top Management Changes, *Journal of Financial Economics* 20, 461-492.

Weisbach, Michael S., 1988, Outside Directors and Ceo Turnover, *Journal of Financial Economics* 20, 431-460.

Wilson, Robert, 1968, The Theory of Syndicates, *Econometrica* 36, 119.

Yeh, Yin-hua, Tsun-siou Lee, and Tracie Woidtke, 2001, Family Control and Corporate Governance: Evidence from Taiwan, *International Review of Finance* 2, 21.

Yeh, Yin-Hua, and Tracie Woidtke, 2005, Commitment or Entrenchment?: Controlling Shareholders and Board Composition, *Journal of Banking and Finance* 29, 1857-1885.

Yermack, David, 1996, Higher Market Valuation of Companies with a Small Board of Directors, *Journal of Financial Economics* 40, 185-211.

Table 1

The Number and Percentage of Independent Director Departures

	2002	2003	2004	2005	2006	Total
Number of Independent Directors in year t	211	325	411	443	452	1,842
Number of Independent Director Departures	42	43	84	92	100	361
Turnover Rate of Independent Directors	19.91%	13.23%	20.44%	20.77%	22.12%	19.60%
Number of Non-executive Directors in year t	4,612	4,122	4,054	4,013	4,047	20,848
Number of Non-executive Director Departures	1,236	747	821	805	731	4,340
Turnover Rate of Non-executive Directors	26.80% (2.138)	18.12% (2.145)	20.25% (0.027)	20.06% (0.291)	18.06% (2.046)	20.82% (1.208)
Number of Executive Directors in year t	636	1,079	1,104	1,095	1,132	5,046
Number of Executive Directors Departures	92	157	185	162	185	781
Turnover Rate of Executive Directors	14.47% (1.767)	14.55% (0.506)	16.76% (1.591)	14.79% (2.784)	16.34% (2.632)	15.48% (4.033)
Firms with Independent Directors	152	203	263	282	284	1,184
All Publicly Listed Firms	648	646	655	665	679	3,293

This table presents the number and percentage of director departures (in three director classes) in Taiwanese publicly listed firms from 2002 to 2006. *Number of Independent Directors in year t* represents the number of independent directors shown on the MOPS website on the last day of fiscal year "t". *Number of Independent Director Departures* represents the number of independent directors who have names listed on the board in fiscal year "t" but not in fiscal year "t+1". *Turnover Rate of Independent Directors* is the ratio of *Independent Director Departures* to *Number of Independent Directors in year t*. *Number of Non-executive Directors in year t* represents the number of non-executive directors, the directors who are neither independent directors nor holding executive position in the firm. *Number of Non-executive Director Departures* represents the number of non-executive directors who have names listed on the board in fiscal year "t" but not in fiscal year "t+1". *Turnover rate of Non-executive Directors* is the ratio of *Non-executive Director Departures* to *Number of Non-executive Directors in year t*. Z values of proportion test for difference between the turnover rate of independent directors and the turnover rate of (1) non-executive directors and (2) executive directors are presented in the parenthesis below turnover rates.

Number of Executive Directors in year t represents the number of executive directors, the directors who are holding executive position in the firm. *Number of Executive Director Departures* represents the number of executive directors who have names listed on the board in fiscal year "t" but not in fiscal year "t+1". *Turnover rate of Executive Directors* is the ratio of *Executive Director Departures* to *Number of Executive Directors in year t*. *Firms with Independent Directors* represents the number of publicly listed firms with independent directors on the board in year t. *All Publicly Listed Firms* represents the number of firms listed on Taiwan Stock Exchange (TWSE) at the end of each fiscal year.

Table 2

Summary Statistics for Independent Directors and Firms

	N	Mean	t-value	Min.	25th Percentile	Median	75th Percentile	95th Percentile	Max.
#Indep Dir. Depart. (per firm)	525	0.3086***	11.74	0.0000	0.0000	0.0000***	0.0000	2.0000	4.0000
ΔOI/TA	525	-1.52%***	-4.26	-36.85%	-5.91%	-0.80%	3.01%	10.42%	34.26%
Accounting Restatements	525	0.0381***	3.11	0.0000	0.0000	0.0000***	0.0000	0.0000	4.0000
% Family Dir. On Board	525	44.15%***	55.96	9.09%	28.57%	42.86%*	57.14%	77.78%	90.00%
% Inst. Dir. On Board	525	5.40%***	12.78	0.00%	0.00%	0.00%***	14.29%	22.22%	57.14%
% Shares by Family	525	28.15%***	38.44	0.45%	15.40%	26.76%	38.22%	56.56%	88.02%
% Shares by Institution	525	37.57%***	37.49	0.03%	19.34%	33.94%	53.65%	78.74%	98.41%
% Share by Family *ΔOI/TA	525	-0.41%***	-3.55	-12.50%	-1.39%	-0.16%	0.61%	3.33%	17.02%
Depart. Rate of NonExec. Dir.	525	8.86%***	16.40	0.00%	0.00%	0.00%***	14.29%	40.00%	45.45%
Depart. Rate of Indep. Dir.	525	4.71%***	11.59	0.00%	0.00%	0.00%***	0.00%	25.00%	42.86%
CEO=CHAIR	525	0.3162***	15.57	0.0000	0.0000	0.0000***	1.0000	1.0000	1.0000
Director Seats	525	6.9048***	89.39	4.0000	5.0000	7.0000***	7.0000	10.0000	14.0000

The sample consists of 526 observations of independent director departures in Taiwanese publicly listed firms between 2002 and 2006. The dependent variable *#IndepDirDeparture (per firm)* is the number of independent director departures in each firm. Six independent variables are applied to examine our hypotheses: *ΔOI/TA* represents the change of firm's operating return on total assets over the (-3,-1) year window before departure. *AccountingRestatements* is the number of accounting restatements in each year. *%FamilyDirOnBoard* and *%InstDirOnBoard* represent the proportion of board seats held by founding family and by institutional investors, respectively. *%ShareByFamily* and *%ShareByInstitution* represent the proportion of firm shares owned by founding family and by institutional shareholders, respectively. Four control variables are also added in the model. The interaction variable *%ShareByFamily*ΔOI/TA* represents the product of family ownership and firm's past performance. *DepartRate of NonExecDir.* represents the departure rates of non-executive directors. *DepartRate of IndepDir.* represents the departure rates of independent directors. The dummy variable *CEO=Chair* indicates whether the CEO is also sitting as chairman on the board. *Director Seats* shows the number of director seats on the board. Mean and median significance levels are obtained from T-test and Univariate test, respectively. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

49

Table 3

Departures and Firm Statistics for Family vs. Non-Family Firms

	#Indep Dir. Depart. (per firm)		ΔOI/TA		Accounting Restatements		% Family Dir. on Board	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	0.328	0.248	-1.85%	-0.50%	0.05	0.01	47.65%	33.41%***
t Value	10.35	5.63	-4.54	-0.68	3.00	1.00	56.92	20.98
25th Pctl	0.000	0.000	-5.94%	-5.85%	0.00	0.00	40.00%	20.00%
Median	0.000	0.000	-0.93%	0.18%*	0.00	0.00	43.65%	28.57%***
75th Pctl	0.500	0.000	2.71%	4.26%	0.00	0.00	60.00%	42.86%
N	396	129	396	129	396	129	396	129

	% Inst. Dir. on Board		% Shares by Family		% Shares by Institution		%Family Share*ΔOI/TA	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	4.25%	8.91%***	34.76%	7.84%***	38.46%	34.86%***	-0.52%	-0.06%**
t Value	10.00	8.38	50.29	21.41	32.69	18.52	-3.46	-0.98
25th Pctl	0.00%	0.00%	24.20%	4.59%	19.47%	18.62%	-1.95%	-0.31%
Median	0.00%	0.00%***	32.45%	6.79%***	35.91%	30.14%***	-0.36%	0.01%**
75th Pctl	0.00%	14.29%	42.95%	11.73%	56.43%	51.56%	0.83%	0.22%
N	396	129	396	129	396	129	396	129

	Depart. Rate of NonExec. Dir.		Depart. Rate of Indep. Dir.		CEO=CHAIR		Director Seats	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	8.84%	8.92%	5.10%	3.53%	0.293	0.388**	6.730	7.442***
t Value	14.36	7.90	10.26	5.57	12.79	9.00	80.69	42.60
25th Pctl	0.00%	0.00%	0.00%	0.00%	0.000	0.000	5.000	6.000
Median	0.00%	0.00%	0.00%	0.00%	0.000	0.000**	7.000	7.000***
75th Pctl	14.29%	14.29%	3.85%	0.00%	1.000	1.000	7.000	9.000
N	396	129	396	129	396	129	396	129

The definition of variables is same as those in Table 2. Firms are classified as family firms (*FMY*) when controlling family owns at least 15% of firm shares and as non-family firms (*NonFMY*) otherwise. The significance of difference (for mean and median) between family and non-family firms is presented in the *NonFMY* columns. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4

Departures and Firm Statistics for Firms with Non-Declined (ΔMB≥0) vs. Declined (ΔMB<0) Past Performance

	#Indep Dir. Depart. (per firm)		ΔOI/TA		Accounting Restatements		% Family Dir. on Board	
	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0
Mean	0.286	0.341	-1.16%	-2.04%	0.03	0.05	44.27%	43.97%
t Value	8.82	7.76	-2.67	-3.38	2.20	2.22	42.31	36.64
25th Pctl	0.000	0.000	-5.46%	-6.73%	0.00	0.00	28.57%	28.57%
Median	0.000	0.000	-0.50%	-1.47%	0.00	0.00	42.86%	42.86%
75th Pctl	0.000	1.000	3.34%	2.38%	0.00	0.00	57.14%	57.14%
N	311	214	311	214	311	214	311	214

	% Inst. Dir. on Board		% Shares by Family		% Shares by Institution		%Family Share*ΔOI/TA	
	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0
Mean	4.69%	6.43%	27.74%	28.74%	37.48%	37.72%	-0.32%	-0.54%
t Value	9.72	8.47	28.79	25.50	29.16	23.54	-2.45	-2.58
25th Pctl	0.00%	0.00%	15.52%	14.68%	18.91%	19.61%	-1.15%	-1.62%
Median	0.00%	0.00%	25.23%	29.72%	33.68%	35.07%	-0.07%	-0.29%
75th Pctl	11.11%	14.29%	37.64%	38.63%	54.66%	53.46%	0.68%	0.48%
N	311	214	311	214	311	214	311	214

	Depart. Rate of NonExec. Dir.		Depart. Rate of Indep. Dir.		CEO=CHAIR		Director Seats	
	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0	ΔMB≥0	ΔMB<0
Mean	7.71%	10.54%**	4.39%	5.19%	0.315	0.318	6.875	6.949
t Value	11.76	11.56	8.57	7.80	11.94	9.96	66.83	59.56
25th Pctl	0.00%	0.00%	0.00%	0.00%	0.000	0.000	5.000	5.000
Median	0.00%	0.00%**	0.00%	0.00%	0.000	0.000	7.000	7.000
75th Pctl	14.29%	16.67%	0.00%	11.11%	1.000	1.000	7.000	8.000
N	311	214	311	214	311	214	311	214

The definition of variables is same as those in Table 2. Firms are classified as with non-declined past performance (ΔMB≥0) when $MB_t - MB_{t-1} \geq 0$ and as declined (ΔMB<0) otherwise. The significance of difference (for mean and median) between ΔMB≥0 and ΔMB<0 firms is presented in the ΔMB<0 columns. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5

Departures and Firm Statistics for Firms with Non-Declined Past Performance (ΔMB≥0): Family vs. Non-Family Firms

	#Indep Dir. Depart. (per firm)		ΔOI/TA		Accounting Restatements		% Family Dir. on Board	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	0.318	0.187*	-1.48%	-0.16%	0.04%**	0.00	47.85%	33.00%***
t Value	8.21	3.34	-2.96	-0.18	2.20	.	42.88	15.89
25th Pctl	0.000	0.000	-5.45%	-5.93%	0.00	0.00	40.00%	20.00%
Median	0.000	0.000*	-0.72%*	0.32%	0.00	0.00	44.44%	28.57%***
75th Pctl	0.500	0.000	3.01%	4.31%	0.00	0.00	60.00%	42.86%
N	236	75	236	75	236	75	236	75

	% Inst. Dir. on Board		% Shares by Family		% Shares by Institution		%Family Share*ΔOI/TA	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	3.54%	8.30%***	34.13%	7.61%***	38.06%	35.65%	-0.41%	-0.04%
t Value	7.58	6.50	36.69	15.03	25.57	13.97	-2.39	-0.59
25th Pctl	0.00%	0.00%	23.17%	3.71%	19.22%	18.16%	-1.82%	-0.29%
Median	0.00%	0.00%***	31.20%	6.28%***	35.53%	30.14%	-0.25%	0.03%
75th Pctl	0.00%	14.29%	42.74%	11.84%	56.22%	53.18%	0.98%	0.22%
N	236	75	236	75	236	75	236	75

	Depart. Rate of NonExec. Dir.		Depart. Rate of Indep. Dir.		CEO=CHAIR		Director Seats	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	7.89%	7.13%	4.93%	2.69%*	0.284	0.413**	6.669	7.520***
t Value	10.49	5.30	7.97	3.27	9.65	7.22	61.04	31.48
25th Pctl	0.00%	0.00%	0.00%	0.00%	0.000	0.000	5.000	7.000
Median	0.00%	0.00%	0.00%	0.00%*	0.000	0.000**	7.000	7.000***
75th Pctl	14.29%	14.29%	3.85%	0.00%	1.000	1.000	7.000	9.000
N	236	75	236	75	236	75	236	75

Definition of variables is same as those in Table 2. Firms with non-declined past performance (ΔMB≥0) are classified as family firms (*FMY*) when controlling family owns at least 15% of firm shares and as non-family firms (*NonFMY*) otherwise. The significance of difference (for mean and median) between family and non-family firms is presented in the NonFMY columns. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6

Departures and Firm Statistics for Firms with Declined Past Performance (ΔMB<0): Family vs. Non-Family Firms

	#Indep Dir. Depart. (per firm)		ΔOI/TA		Accounting Restatements		% Family Dir. on Board	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	0.344	0.333	-2.40%	-0.98%	0.06	0.02	47.34%	33.98%∘***
t Value	6.37	4.77	-3.49	-0.78	2.06	1.00	37.51	13.58
25th Pctl	0.000	0.000	-6.75%	-5.85%	0.00	0.00	40.00%	20.00%
Median	0.000	0.000	-1.93%	-0.66%	0.00	0.00	42.86%	28.57%∘***
75th Pctl	0.500	1.000	2.22%	4.23%	0.00	0.00	57.14%	44.44%
N	160	54	160	54	160	54	160	54

	% Inst. Dir. on Board		% Shares by Family		% Shares by Institution		%Family Share*ΔOI/TA	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	5.30%	9.77%∘***	35.69%	8.16%∘***	39.05%	33.77%	-0.69%	-0.08%∘**
t Value	6.71	5.34	34.96	15.60	20.36	12.10	-2.51	-0.79
25th Pctl	0.00%	0.00%	26.23%	4.96%	20.87%	18.92%	-2.10%	-0.35%
Median	0.00%	0.00%∘***	34.81%	7.35%∘***	36.62%	29.38%	-0.58%	-0.04%∘***
75th Pctl	11.11%	14.29%	42.95%	11.73%	56.73%	50.30%	0.61%	0.22%
N	160	54	160	54	160	54	160	54

	Depart. Rate of NonExec. Dir.		Depart. Rate of Indep. Dir.		CEO=CHAIR		Director Seats	
	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY	FMY	NonFMY
Mean	10.25%	11.42%	5.35%	4.70%	0.306	0.352	6.819	7.333
t Value	9.88	5.97	6.47	4.78	8.38	5.36	52.83	28.77
25th Pctl	0.00%	0.00%	0.00%	0.00%	0.000	0.000	5.000	6.000
Median	0.00%	8.71%	0.00%	0.00%	0.000	0.000	7.000	7.000
75th Pctl	17.42%	14.29%	5.56%	14.29%	1.000	1.000	8.000	9.000
N	160	54	160	54	160	54	160	54

The definition of variables is same as those in Table 2. Firms with declined past performance (ΔMB<0) are classified as family firms (*FMY*) when controlling family owns at least 15% of firms shares and as non-family firms (*NonFMY*) otherwise. The significance of difference (for mean and median) between family and non-family firms is presented in the NonFMY columns. Subscript ∘ denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7

Departures and Firm Statistics for Firms with Returns Outperformed (or Equaled) vs. Underperformed Industry Median

	#Indep Dir. Depart. (per firm)		ΔOI/TA		Accounting Restatements		% Family Dir. on Board	
	OutP	UnderP	OutP	UnderP	OutP	UnderP	OutP	UnderP
Mean	0.271	0.348	-0.92%	-2.15%***	0.02	0.06**	45.48%	42.74%*
t Value	8.09	8.54	-1.71	-4.64	1.51	2.73	41.03	38.22
25th Pctl	0.000	0.000	-5.09%	-6.41%	0.00	0.00	28.57%	28.57%
Median	0.000	0.000	-0.42%	-1.39%***	0.00	0.00**	42.86%	41.43%*
75th Pctl	0.000	1.000	3.72%	2.39%	0.00	0.00	57.14%	57.14%
N	269	256	269	256	269	256	269	256

	% Inst. Dir. on Board		% Shares by Family		% Shares by Institution		%Family Share*ΔOI/TA	
	OutP	UnderP	OutP	UnderP	OutP	UnderP	OutP	UnderP
Mean	4.72%	6.11%	28.74%	27.52%	37.52%	37.64%	-0.23%	-0.60%***
t Value	9.04	9.14	27.47	26.90	26.95	26.02	-1.33	-3.99
25th Pctl	0.00%	0.00%	16.42%	14.34%	18.86%	19.61%	-1.37%	-1.40%
Median	0.00%	0.00%	26.13%	28.23%	33.68%	34.52%	-0.04%	-0.21%***
75th Pctl	11.11%	14.29%	39.01%	37.55%	55.58%	53.58%	0.67%	0.41%
N	269	256	269	256	269	256	269	256

	Depart. Rate of NonExec. Dir.		Depart. Rate of Indep. Dir.		CEO=CHAIR		Director Seats	
	OutP	UnderP	OutP	UnderP	OutP	UnderP	OutP	UnderP
Mean	7.67%	10.11%**	4.27%	5.18%	0.331	0.301	6.729	7.090
t Value	10.75	12.49	7.90	8.49	11.51	10.47	62.89	64.09
25th Pctl	0.00%	0.00%	0.00%	0.00%	0.000	0.000	5.000	5.000
Median	0.00%	0.00%***	0.00%	0.00%	0.000	0.000	7.000	7.000
75th Pctl	14.29%	16.67%	0.00%	11.11%	1.000	1.000	7.000	8.500
N	269	256	269	256	269	256	269	256

The definition of variables is same as those in Table 2. Firms with share return higher than or equal to industry median return classified as outperformed (*OutP*) and as underperformed (*UnderP*) otherwise. The significance of difference (for mean and median) between outperformed and underperformed firms is presented in the UnderP columns. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

54

Table 8

Number and Percentage of Departures in Datasets

	ALL	**MB+**	**MB-**	**FF**	**NF**
#DEPARTURES	162	89	73	130	32
#FIRMS	525	311	214	396	129
%DEPARTURE	30.86%	28.62%	34.11%	32.83%	24.81%

	FF & MB+	**NF & MB+**	**FF & MB-**	**NF & MB-**
#DEPARTURES	75	14	55	18
#FIRMS	236	75	160	54
%DEPARTURE	31.78%	18.67%	34.38%	33.33%

We present the number of independent director departures (*#DEPARTURES*), the number of firms with independent directors on the board (*#FIRMS*), and the departure rate of independent directors (*%DEPARTURE*) in the whole sample and each subset sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data in Table 2. The departure rate is calculated as number of departures divided by number of firms (*%DEPARTURE: # Departures / # Firms*). The whole sample (ALL) includes all 525 firms with independent directors. Sample (*MB+*) includes firms with non-declined past performance ($MB_t - MB_{t-1} \geq 0$). Sample (*MB-*) includes firms with declined past performance ($MB_t - MB_{t-1} < 0$). Sample (*FF*) includes family firms, the firms with at least 15% family shareholdings. Sample (*NF*) includes non-family firms, the firms with less than 15% family shareholdings. Sample (*FF & MB+*) represents family firms with non-declined past performance. Sample (*NF & MB+*) represents non-family firms with non-declined past performance. Sample (*FF & MB-*) represents family firms with declined past performance. Sample (*NF & MB-*) represents non-family firms with declined past performance.

Table 9

Number and Proportion of Departure Observations

	Independent Director Departures					**Total**
Number of Independent Director Departures	0	1	2	3	4	
Number of Observations	398	95	30	1	1	525
Proportion of Observations	75.81%	18.10%	5.71%	0.19%	0.19%	100%

We present the number and proportion of independent director departure observations. *Number of observations* represents the number of observations available in each departure number category. *Proportion of observations* is the ration of *Number of observations* to the total number of observations (525 in our dataset).

Table 10

Negative Binomial Regression Models of Independent Director Departures

	Dependent Variable: #Indep Dir. Depart. (per firm)			
	Sample 1	Sample 2	Sample 3	Sample 4
	All Firms	Family Firms with Declined Past Performance	Family Firms	Firms Underperformed Industry Median Share Return
	(For H1, H2 and H3)	(For H4 and H5)	(FMY Share ≥ 15%)	
Intercept	-1.7554	-0.2501	-1.5328***	-2.1157**
	(0.0048)	(0.8406)	(0.0349)	(0.0194)
ΔOI/TA	-0.4858	1.1283	-0.5631	-3.3353
	(0.8293)	(0.8459)	(0.8707)	(0.2879)
Accounting Restatements	0.4663***	0.5697***	0.474***	0.484***
	(0.0062)	(0.0085)	(0.0092)	(0.0056)
% Family Dir. on Board	-0.2608	-1.0314	-0.5017	-0.6695
	(0.6231)	(0.3476)	(0.4325)	(0.3631)
% Inst. Dir. on Board	0.2456	0.834	0.9638	-0.0824
	(0.7854)	(0.5851)	(0.3877)	(0.9424)

We present the results of negative binomial regression model with sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data in Table 2. Sample 1 consists of all 525 firms with independent director on the board, which is used to test the 1st, 2nd, and 3rd hypothesis. Sample 2 consists of 160 family firms with declined past performance, which is used to test the 4th and 5th hypothesis. Sample 3 consists of 396 family firms. Sample 4 consists of 256 firms underperformed the median share returns in the industry.

The dependent variable *#IndepDirDeparture (per firm)* is the number of independent director departures in each firm. Six independent variables are applied to examine our hypotheses: *ΔOI/TA* represents the change of firm's operating return on total assets over the (-3,-1) year window before departure. *AccountingRestatements* is the number of accounting restatements in each year. *%FamilyDirOnBoard* and *%InstDirOnBoard* represents the proportion of board seats held by founding family and by institutional investors, respectively. *%ShareByFamily* and *%ShareByInstitution* represent the proportion of firm shares owned by founding family and by institutional shareholders, respectively. Four control variables are also added in the model. The interaction variable *%ShareByFamily*ΔOI/TA* represents the product of family ownership and firm's past performance. *DepartRate of NonExecDir.* represents the departure rates of non-executive directors. The dummy variable *CEO=Chair* indicates whether the CEO is also sitting as chairman on the board. *Director Seats* shows the number of director seats on the board. Probability > Chi Sqr. for coefficient estimates is presented in the parenthesis below each coefficient. Subscript ****, ***, ** and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

56

Table 10 (Continued)

	Dependent Variable: #Indep Dir. Depart. (per firm)			
	Sample 1 All Firms	Sample 2 Family Firms with Declined Past Performance	Sample 3 Family Firms	Sample 4 Firms Underperformed Industry Median Share Return
	(For H1, H2 and H3)	(For H4 and H5)	(FMY Share ≥ 15%)	
% Shares by Family	1.4147**	0.8592	1.5349*	1.4008
	(0.0216)	(0.5405)	(0.0597)	(0.1072)
% Shares by Institution	-0.5783	-0.9243	-0.3845	-0.6968
	(0.1486)	(0.195)	(0.3991)	(0.2207)
% Share by Family *ΔOI/TA	1.3117	0.3462	1.6744	5.2149
	(0.8427)	(0.981)	(0.8534)	(0.5875)
Depart. Rate of NonExec. Dir.	2.2338***	1.7153	1.9358**	1.846**
	(0.0005)	(0.1455)	(0.0101)	(0.0266)
CEO=CHAIR	-0.2118	-0.4645	-0.2868	-0.1897
	(0.2741)	(0.2063)	(0.2082)	(0.4692)
Director Seats	0.0188	-0.066	-0.009	0.0212
	(0.7105)	(0.5073)	(0.883)	(0.7638)
Model significance	***		*	*
Sample size (firms)	525	160	396	256

57

Table 11

Number and Percentage of Accounting Restatements in Datasets

	ALL	**MB+**	**MB-**	**FF**	**NF**
#RESTATEMENTS	20	9	11	19	1
#FIRMS	525	311	214	396	129
%RESTATEMENT	3.81%	2.89%	5.14%	4.80%	0.78%

	FF & MB+	**NF & MB+**	**FF & MB-**	**NF & MB-**
#RESTATEMENTS	9	0	10	1
#FIRMS	236	75	160	54
%RESTATEMENT	3.81%	0.00%	6.25%	1.85%

We present the number of accounting restatements (*#RESTATEMENTS*), the number of firms with independent directors on the board (*#FIRMS*), and the rate of accounting restatement (*%RESTATEMENT*) in the whole sample and each subset sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data from Table 2 to Table 6. The rate of accounting restatements is calculated as number of accounting restatement divided by number of firms (*%RESTATEMENT: # RESTATEMENTS / # Firms*). The whole sample (*ALL*) includes all 525 firms with independent directors. Sample (*MB+*) includes firms with non-declined past performance ($MB_t - MB_{t-1} \geq 0$). Sample (*MB-*) includes firms with declined past performance ($MB_t - MB_{t-1} < 0$). Sample (*FF*) includes family firms, the firms with at least 15% family shareholdings. Sample (*NF*) includes non-family firms, the firms with less than 15% family shareholdings. Sample (*FF & MB+*) represents family firms with non-declined past performance. Sample (*NF & MB+*) represents non-family firms with non-declined past performance. Sample (*FF & MB-*) represents family firms with declined past performance. Sample (*NF & MB-*) represents non-family firms with declined past performance.

Table 12

Number and Proportion of Accounting Restatement Observations

	Accounting Restatements					**Total**
Number of Accounting Restatements	0	1	2	3	4	
Number of Observations	512	9	2	1	1	525
Percentage of Observations	97.52%	1.71%	0.38%	0.19%	0.19%	100%

We present the number and proportion of accounting restatement observations. *Number of observations* represents the number of observations available in each accounting restatement number category. *Proportion of observations* is the ration of *Number of observations* to the total number of observations (525 in our dataset).

Table 13

Regression Models of Independent Director Departure Rates

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
	Dependent Variable: Departure Rate of Independent Directors				
	All Firms	**Family Firms**	**Firms with Non-Declined Past**	**Firms with Declined Firms Past Performance**	**Underperformed Industry Median**
		(FMY Share ≥ 15%)	**Perform. (ΔMB ≥ 0)**	**(ΔMB < 0)**	**Share Return**
Intercept	0.0664	0.0805**	0.0394	0.1136**	0.0511
	(2.2)	(2.14)	(0.93)	(2.34)	(1.17)
ΔOI/TA	0.0013	0.0476	0.0932	-0.0563	-0.1339
	(0.01)	(0.27)	(0.67)	(-0.39)	(-0.82)
Accounting Restatements	0.0457***	0.0449***	0.0050	0.0709***	0.0625***
	(3.2)	(2.9)	(0.22)	(3.66)	(3.59)
% Family Dir. on Board	-0.0106	-0.0283	-0.0076	-0.0034	-0.0337
	(-0.43)	(-0.89)	(-0.24)	(-0.08)	(-0.9)
% Inst. Dir. on Board	0.0017	0.0443	-0.0157	0.0147	-0.0235
	(0.04)	(0.72)	(-0.24)	(0.23)	(-0.39)
% Shares by Family	0.0586**	0.0709*	0.0844**	0.0200	0.0574
	(1.96)	(1.65)	(2.18)	(0.42)	(1.26)

We present the results of OLS regression model with sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data in Table 2. Sample 1 consists of all 525 firms with independent director on the board. Sample 2 consists of 396 family firms. Sample 3 consists of 311 firms with non-declined past performance. Sample 4 consists of 214 firms with declined past performance. Sample 5 consists of 256 firms underperformed the median share returns in the industry.

The dependent variable, departure rate of independent directors, is the fraction of the number of independent director departures to the number of director seats in each firm. Six independent variables are applied to examine our hypotheses: *ΔOI/TA* represents the change of firm's operating return on total assets over the (-3,-1) year window before departure. *AccountingRestatements* is the number of accounting restatements in each year. *%FamilyDirOnBoard* and *%InstDirOnBoard* represents the proportion of board seats held by founding family and by institutional investors, respectively. *%ShareByFamily* and *%ShareByInstitution* represent the proportion of firm shares owned by founding family and by institutional shareholders, respectively. Four control variables are also added in the model. The interaction variable *%ShareByFamily*ΔOI/TA* represents the product of family ownership and firm's past performance. *DepartRate of NonExecDir.* represents the departure rates of non-executive directors. The dummy variable *CEO=Chair* indicates whether the CEO is also sitting as chairman on the board. *Director Seats* shows the number of director seats on the board. T-value of coefficient estimates is presented in the parenthesis below each coefficient. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

59

Table 13 (Continued)

		Dependent Variable: Departure Rate of Independent Directors			
	Sample 1	**Sample 2**	**Sample 3**	**Sample 4**	**Sample 5**
	All Firms	**Family Firms**	**Firms with Non-Declined Past**	**Firms with Declined Past Performance**	**Declined Firms Underperformed Industry Median**
		(FMY Share ≥ 15%)	**Perform. (ΔMB ≥ 0)**	**(ΔMB < 0)**	**Share Return**
% Shares by Institution	-0.0213	-0.0111	-0.0051	-0.0468	-0.0234
	(-1.12)	(-0.47)	(-0.21)	(-1.52)	(-0.79)
% Share by Family *ΔOI/TA	0.0198	-0.0834	-0.4567	0.2732	0.1299
	(0.07)	(-0.18)	(-0.99)	(0.65)	(0.26)
Depart. Rate of NonExec. Dir.	0.1254***	0.1133***	0.1363***	0.1055**	0.1275***
	(3.72)	(2.7)	(2.95)	(2.01)	(2.63)
CEO=CHAIR	-0.0085	-0.0112	-0.0077	-0.0099	-0.0052
	(-0.96)	(-1.01)	(-0.67)	(-0.68)	(-0.39)
Director Seats	-0.0054**	-0.0072**	-0.0041	-0.0074*	-0.0057
	(-2.22)	(-2.28)	(-1.29)	(-1.84)	(-1.55)
Adj. R-Square	0.0510***	0.0406**	0.0268*	0.0663**	0.0708***
Sample size (firms)	525	396	311	214	256

Table 14

Negative Binomial and OLS Regression Models of Independent Director Departures in Family Firms

	Negative Binomial Model Dependent Variable Number of Departures	Ordinary Least Square (OLS) Model Dependent Variable Rate of Departures		
	Family Firms	Family Firms	Family Firms with Non-Declined Past	Family Firms with Declined Past
	(FMY Share ≥ 20%)	(FMY Share ≥ 20%)	Perform. (ΔMB ≥ 0)	Perform. (ΔMB < 0)
Intercept	-1.6797**	0.0817**	0.0088	0.1906***
	(0.031)	(2.05)	(0.17)	(2.75)
ΔOI/TA	6.3296	0.3397*	0.5804**	0.4169
	(0.153)	(1.73)	(2.18)	(1.28)
Accounting Restatements	0.4348**	0.0381**	-0.0200	0.0682***
	(0.018)	(2.46)	(-0.83)	(3.17)
% Family Dir. on Board	-0.5401	-0.0322	0.0132	-0.0714
	(0.432)	(-0.96)	(0.32)	(-1.20)
% Inst. Dir. on Board	1.576	0.0938	0.0472	0.1022
	(0.181)	(1.36)	(0.48)	(1.00)

We present results of negative binomial and OLS regression models with subset samples of family firms in this table. Family firms in this table represent firms with at least 20% family shareholdings. The first column presents the result of negative binomial regression model with number of independent director departures as dependent variable. The second, third, and fourth column presents the result of OLS regression model with rate of independent director departure as dependent variable on the sample of family firms, family firms with non-declined past performance, and family firms with declined past performance, respectively. Six independent variables are applied to examine our hypotheses: *ΔOI/TA* represents the change of firm's operating return on total assets over the (-3,-1) year window before departure. *AccountingRestatements* is the number of accounting restatements in each year. *%FamilyDirOnBoard* and *%InstDirOnBoard* represents the proportion of board seats held by founding family and by institutional investors, respectively. *%ShareByFamily* and *%ShareByInstitution* represent the proportion of firm shares owned by founding family and by institutional shareholders, respectively. Four control variables are also added in the model. The interaction variable *%ShareByFamily*ΔOI/TA* represents the product of family ownership and firm's past performance. *DepartRate of NonExecDir.* represents the departure rates of non-executive directors. The dummy variable *CEO=Chair* indicates whether the CEO is also sitting as chairman on the board. *Director Seats* shows the number of director seats on the board. T-value and the probability > Chi Sqr. for coefficient estimates in negative binomial and OLS regression model, respectively, is presented in the parenthesis below each coefficient. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

61

Table 14 (Continued)

	Negative Binomial Model Dependent Variable Number of Departures	Ordinary Least Square (OLS) Regression Model Dependent Variable Rate of Departures		
	Family Firms	Family Firms	Family Firms with Non-Declined Past	Family Firms with Declined Past
	(FMY Share ≥ 20%)	(FMY Share ≥ 20%)	Perform. (ΔMB ≥ 0)	Perform. (ΔMB < 0)
% Shares by Family	2.0258**	0.0907**	0.1296**	0.0230
	(0.021)	(1.96)	(2.30)	(0.28)
% Shares by Institution	-0.1681	0.0029	0.0336	-0.0349
	(0.7256)	(0.12)	(1.06)	(-0.89)
% Share by Family *ΔOI/TA	-13.7461	-0.7801	-1.7971**	-0.7432
	(0.2041)	(-1.52)	(-2.37)	(-0.95)
Depart. Rate of NonExec. Dir.	1.6776**	0.0825*	0.0813	0.0512
	(0.0412)	(1.86)	(1.34)	(0.73)
CEO=CHAIR	-0.1518	-0.0050	-0.0099	-0.0024
	(0.531)	(-0.42)	(-0.67)	(-0.12)
Director Seats	-0.0316	-0.0085**	-0.0065	-0.0126**
	(0.6319)	(-2.53)	(-1.53)	(-2.24)
Model significance	*			
Adj. R-Square		0.0459**	0.0349	0.0749**
Sample size (firms)	348	348	204	144

Table 15

Negative Binomial Regression Models of Independent Director Departures

| | Dependent Variable: #Indep Dir. Depart. (per firm) | | | |
| | All Firms | | Family Firms | |
	Model 1	Model 2 (w/o %Depart NonExec Dir.)	Model 1	Model 2 (w/o %Depart NonExec Dir.)
Intercept	-1.9751***	-1.7778***	-1.7862**	-1.5603**
	(0.0035)	(0.0079)	(0.0238)	(0.0453)
ΔOI/TA	-0.2219	-0.3894	-0.0763	0.0849
	(0.9215)	(0.8601)	(0.9822)	(0.9803)
Accounting Restatements	1.2473**	1.5193***	1.3812**	1.6036**
	(0.0295)	(0.0098)	(0.0417)	(0.0205)
% Family Dir. on Board	-0.0886	-0.0099	-0.2603	-0.2825
	(0.8703)	(0.9855)	(0.6913)	(0.6646)
% Inst. Dir. on Board	0.4605	0.8264	1.3379	1.5567
	(0.6173)	(0.3597)	(0.2481)	(0.1722)

We present the results of negative binomial regression model with sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data in Table 2. Dataset of *All Firms* consists of all 525 firms with independent director on the board in the sample. Dataset of *Family Firms* consists of 396 firms with at least 15% family shareholdings. Dependent variable *#IndepDirDeparture (per firm)* is the number of independent director departures in each firm. Thirteen independent variables, including seven control variables, are applied in this robustness test: *ΔOI/TA* represents the change of firm's operating return on total assets over the (-3,-1) year window before departure. *AccountingRestatements* is the number of accounting restatements in each year. *%FamilyDirOnBoard* and *%InstDirOnBoard* represents the proportion of board seats held by founding family and by institutional investors, respectively. *%ShareByFamily(00's)* and *%ShareByInstitution(00's)* represent the proportion of firm shares owned by founding family and by institutional shareholders, respectively. Value of variables is adjusted by two decimal points; for example, a 28% shareholding is addressed as 28. The interaction variable *%ShareByFamily(00's)*ΔOI/TA* represents the product of family ownership and firm's past performance. *DepartRate of NonExecDir.* represents the departure rates of non-executive directors. The dummy variable *CEO=Chair* indicates whether the CEO is also sitting as chairman on the board. *Director Seats* shows the number of director seats on the board. *% ShareByFamily(00's)*AccountingRestatements* represents the interaction between proportion of family shareholdings and number of accounting restatements. Dummy variable *Dummy_Underperformed* is used to control for firms underperformed their industry median share returns. Proportion of independent directors on the board, *% Indep. Director on Board*, is used to control for independent director presence on the board. Two model are run on each dataset: Model 1 includes all variables and Model 2 is the one with departure rate of non-executive directors removed. Probability > Chi Sqr. for coefficient estimates is presented in the parenthesis below each coefficient. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

63

Table 15 (Continued)

Dependent Variable: #Indep Dir. Depart. (per firm)

	All Firms		Family Firms	
	Model 1	Model 2 (w/o %Depart NonExec Dir.)	Model 1	Model 2 (w/o %Depart NonExec Dir.)
% Shares by Family (00's)	0.0140**	0.0135**	0.0148*	0.0134
	(0.0246)	(0.0323)	(0.0706)	(0.1008)
% Shares by Institution (00's)	-0.0061	-0.0050	-0.0038	-0.0028
	(0.1261)	(0.2182)	(0.4024)	(0.5427)
% Share by Family (00's) * ΔOI/TA	0.0080	0.0116	0.0057	0.0032
	(0.9027)	(0.8561)	(0.9492)	(0.9716)
Depart. Rate of NonExec. Dir.	2.0706***		1.7785**	
	(0.0013)		(0.0191)	
CEO=CHAIR	-0.2198	-0.1948	-0.3331	-0.3165
	(0.2560)	(0.3148)	(0.1473)	(0.1705)
Director Seats	0.0178	0.0242	-0.0112	0.0004
	(0.7280)	(0.6385)	(0.8559)	(0.9943)
% Share by Family (00's) * Accounting Restatements	-0.0302	-0.0381*	-0.0341	-0.0408
	(0.1551)	(0.0791)	(0.1636)	(0.1034)
Dummy_Underperform	0.1273	0.1762	0.0890	0.1351
	(0.4578)	(0.3043)	(0.6527)	(0.4931)
% Indep. Director on Board	0.9922	0.6431	1.4147	1.0973
	(0.4922)	(0.6556)	(0.3938)	(0.5067)
Model significance	***	*	**	*
Sample size (firms)	525	525	396	396

Table 16

Firm Performance after Independent Director Departures

	N	Mean	t-value	Min.	25th Pctl.	Median	75th Pctl.	Max
One Year after Departures								
#Indep Dir. Depart. (per firm)	83	1.2530***	21.24	1.0000	1.0000	1.0000	1.0000	4.0000
ΔOI/TA (-3,-1)	83	-0.0246***	-3.12	-0.2400	-0.0660	-0.0148	0.0225	0.1211
$MB_{t+1} - MB_t$	83	0.1730**	2.41	-0.9000	-0.0399	0.1024	0.2232	5.2066
$ROA_{t+1} - ROA_t$	83	-0.85%	-1.42	-15.80%	-3.85%	-1.17%	2.26%	17.50%
$ROE_{t+1} - ROE_t$	83	-1.74%	-1.12	-50.60%	-7.04%	-1.89%	3.68%	76.26%
Two Years after Departures								
#Indep Dir. Depart. (per firm)	56	1.2679***	16.15	1.0000	1.0000	1.0000	1.0000	4.0000
ΔOI/TA (-3,-1)	56	-0.0299***	-3.03	-0.2400	-0.0720	-0.0261	0.0178	0.1211
$MB_{t+2} - MB_t$	56	0.1901***	2.77	-0.7610	-0.0429	0.0821	0.2676	2.3921
$ROA_{t+2} - ROA_t$	56	-0.68%	-0.62	-35.00%	-4.24%	0.07%	3.52%	17.91%
$ROE_{t+2} - ROE_t$	56	-1.07%	-0.39	-89.30%	-9.13%	0.58%	7.12%	79.67%
Three Years after Departures								
#Indep Dir. Depart. (per firm)	32	1.0625***	24.44	1.0000	1.0000	1.0000	1.0000	2.0000
ΔOI/TA (-3,-1)	32	-0.0422***	-2.97	-0.2400	-0.0790	-0.0403	0.0016	0.1211
$MB_{t+3} - MB_t$	32	0.3456**	2.28	-0.7660	0.0674	0.1802	0.3172	4.3119
$ROA_{t+3} - ROA_t$	32	-1.71%	-1.33	-20.50%	-6.88%	0.33%	3.40%	9.41%
$ROE_{t+3} - ROE_t$	32	-4.02%	-1.2	-66.10%	-12.30%	0.59%	5.80%	31.70%

This table presents changes in firm performance prior to and after the departure of independent directors in Taiwanese publicly listed firms between 2002 and 2006. There are 83, 56, and 32 firms with independent director departures at the period of one-, two-, and three-years, respectively, after the departure. *#IndepDirDeparture (per firm)* is the number of independent director departures in each firm. Δ*OI/TA (-3,-1)* represents the change of firm's operating return on total assets over the (-3,-1) year window before departure. Three post departure changes in firm performance, market-to-book ratio (*MB*), return on assets (*ROA*), and return on equities (*ROE*), from the departure year (*t*) to one (*t+1*), two (*t+2*), and three (*t+3*) years after departures are also presented in each panel. Mean significance levels are obtained from T Test. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

The Number and Percentage of ID Departures
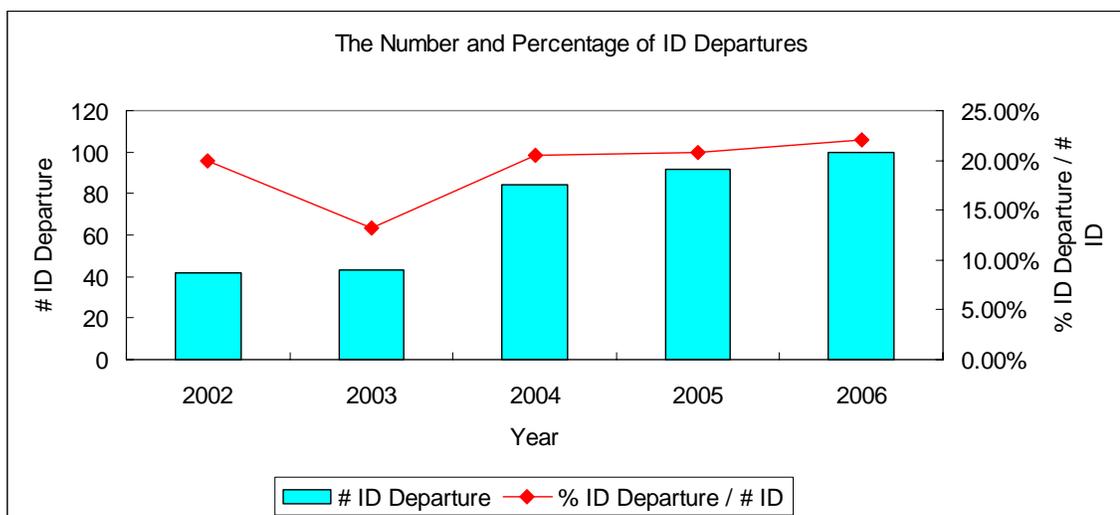
Figure 1

The Number and Percentage of Independent Director Departures

This figure presents the number (bar chart) and the percentage (trend line) of independent director (ID) departures in Taiwanese publicly listed firms from 2002 to 2006, based on the data in Table 1. The value on the left Y-axis (*# ID Departure*) represents the number of independent directors listed on board in the current year but depart in the next year. The percentage on the right Y-axis (*# ID Departure / # ID*) represents the ratio of independent director departures to the number of independent directors listed on board in the current year. For example, for those 211 independent directors listed in 2002, 42 of them left during the 2002-2003 period (as shown in Table 1). The percentage of independent director departures in 2002 thus equals to 42/211 = 19.91%. Similarly, the percentage of independent director departures in 2005 is 92/443 = 20.77%.
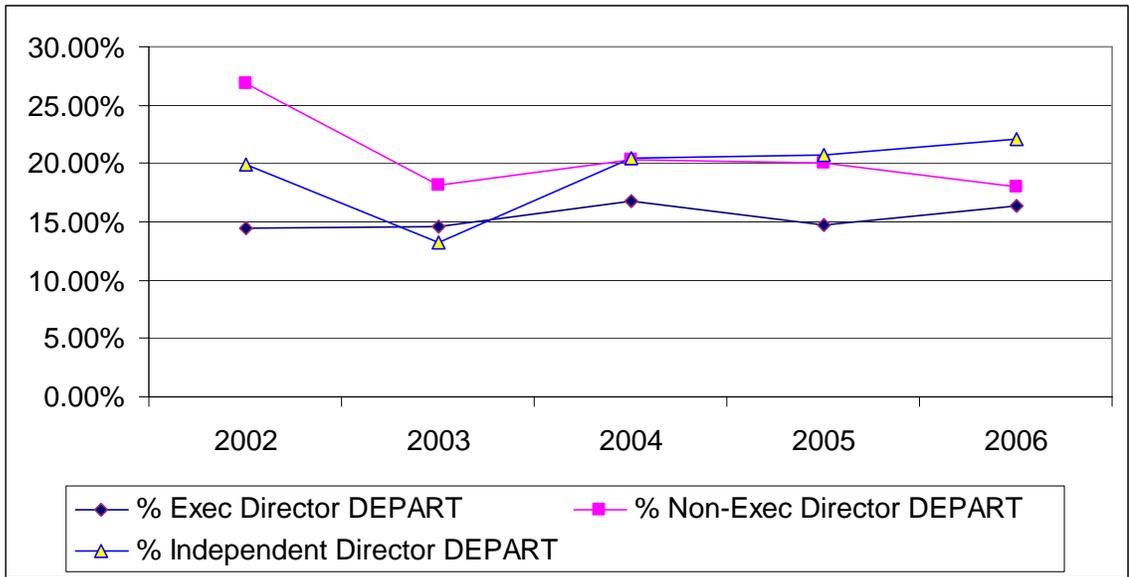
Figure 2

The Comparison of Director Departure Rates

This figure presents the departure rate of three classes of directors in Taiwanese publicly listed firms from 2002 to 2006, based on the data in Table 1. The triangle-marker trend line *(% Independent Director Depart)* represents the departure rate of independent directors. The square-marker trend line *(% Non-executive Director Depart)* represents the departure rate of non-executive directors. The diamond-marker trend line *(% Executive Director Depart)* represents the departure rate of executive directors. The percentage on the left Y-axis (*Director Departure Rate*) represents the ratio of director departures to the number of directors listed on board in each fiscal year.

%DEPARTURE

(Chart 1: bars for ALL, MBC+, MBC-, FF, NF)

%DEPARTURE

(Chart 2: bars for FF & MBC+, NF & MBC+, FF & MBC-, NF & MBC-)

Figure 3

The Comparison of Independent Director Departure Rates

We present the departure rates of independent directors (%Departure) in the whole sample and each subset sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data in Table 8 and Table 9. The classification of subset samples is same as that in Table 8 and Table 9. The departure rate is calculated as number of departures divided by number of firms. (*%*Departure*: # Departures / # Firms*)

The whole sample (ALL) includes all 525 firms with independent directors. Sample (*MB+*) includes firms with non-declined past performance ($MB_t - MB_{t-1} \geq 0$). Sample (*MB-*) includes firms with declined past performance ($MB_t - MB_{t-1} < 0$). Sample (*FF*) includes family firms, the firms with at least 15% family shareholdings. Sample (*NF*) includes non-family firms, the firms with less than 15% family shareholdings. Sample (*FF & MB+*) represents family firms with non-declined past performance. Sample (*NF & MB+*) represents non-family firms with non-declined past performance. Sample (*FF & MB-*) represents family firms with declined past performance. Sample (*NF & MB-*) represents non-family firms with declined past performance.

68

%RESTATEMENT

%RESTATEMENT

Figure 4

The Comparison of Accounting Restatement Rates

We present the rate of accounting restatements in the whole sample and each subset sample of Taiwanese publicly listed firms between 2002 and 2006, based on the data in Table 11 and Table 12. The classification of subset samples is same as that in Table 11 and Table 12. The rate of accounting restatements is calculated as number of accounting restatement divided by number of firms. (*%Restatement: # Restatement / # Firms*)

The whole sample (ALL) includes all 525 firms with independent directors. Sample (*MB+*) includes firms with non-declined past performance ($MB_t - MB_{t-1} \geq 0$). Sample (*MB-*) includes firms with declined past performance ($MB_t - MB_{t-1} < 0$). Sample (*FF*) includes family firms, the firms with at least 15% family shareholdings. Sample (*NF*) includes non-family firms, the firms with less than 15% family shareholdings. Sample (*FF & MB+*) represents family firms with non-declined past performance. Sample (*NF & MB+*) represents non-family firms with non-declined past performance. Sample (*FF & MB-*) represents family firms with declined past performance. Sample (*NF & MB-*) represents non-family firms with declined past performance.
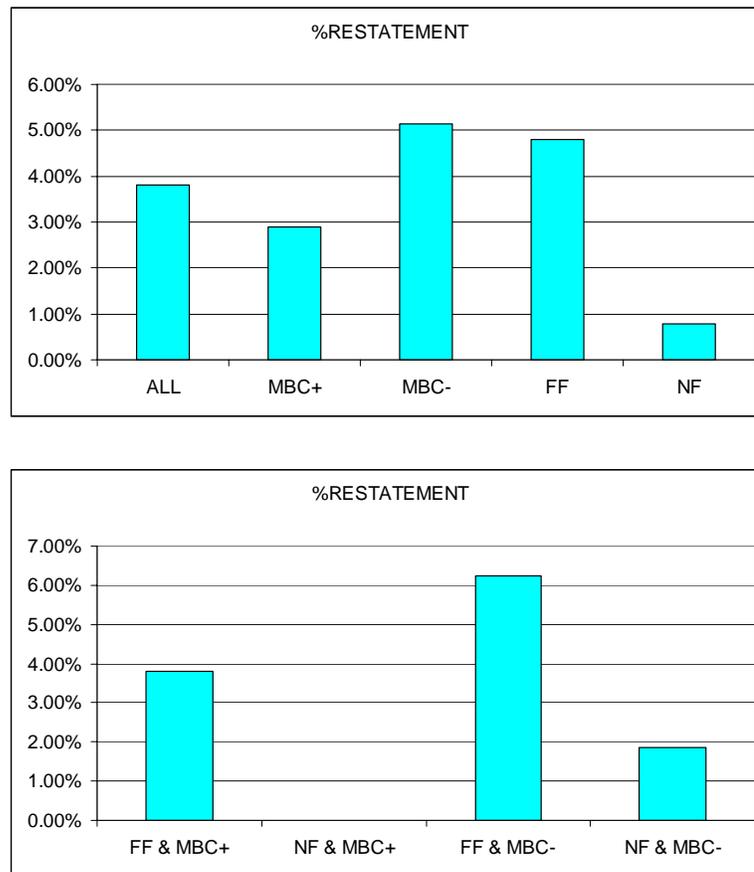
CHAPTER VIII

ESSAY 2: THE EFFECT OF DIRECTORS' SHAREHOLDINGS AND

CAREER AFFILIATIONS ON THE PERFORMANCE OF

TAIWANESE PUBLICLY LISTED FIRMS

8.1 Introduction

In this paper, we explore the impact of directors' pecuniary interest, non-pecuniary

interest, and families' shareholdings on firm performance in Taiwanese publicly listed

firms. Our purpose is to examine whether there is a significant effect on the monitoring of

management by (1) directors whose financial interests are more aligned with that of

shareholders by personal ownership as well as through their family and (2) directors

whose ownership is restricted.[73] Taiwan is uniquely suited to this research because (1)

under current regulations, independent directors' (plus their family members)

shareholdings of the firms they direct are restricted to be no greater than one percent and

(2) all directors must report the shareholding of their family members.[74] For independent

---

[73] According to Fama (1980) and Coughlan and Schmidt (1985), monitoring management to ensure to maximize shareholders' wealth is an important job for a board of directors.

[74] According to Corporate Law in Taiwan, directors are classified as either (1) directors (can be executive or non-executive directors) or (2) independent directors (who need to fulfill specific requirements which restrict any affiliation with the firm). Since the new regulations announced in 2001, the title "independent directors" has replaced the title "outside directors" used earlier. In the U.S. firms, for example, Bhagat and Black (1999) classify directors, in common practice, into three categories: (1) inside directors (e.g. officers of the firm), (2) affiliated outside directors (or grey directors), and (3) independent directors (outside directors who are not affiliated with the firm). This 1% shareholding restriction is applied to (1) the period of directorship and also to (2) two years before being appointed as independent director. (Yeh and Woidtke, 2005).

directors, non-pecuniary interests are likely to be strong, because (1) pecuniary interest is restricted by law and (2) their prestige, reputation, and future job opportunities are influenced by their perceived directorial performance. In contrast, non-independent directors (including executive and non-executive directors) often own shares of the directed firm and register shares under the names of family members for family wealth management.[75] The firm shares owned by non-independent directors' family members thus provides an opportunity to investigate how directors' family shareholdings affect firm performance. To our knowledge, estimation of the impacts of directors' family shareholdings and non-pecuniary interests on firm performance are both unique contributions to the literature.[76]

Inclusion of directors' families' shareholdings is new to the literature. The mandated disclosure of directors' family shareholdings and the regulations on independent directors announced by Taiwan Stock Exchange (TWSE) in 2001 makes the data available for our research. Starting in 2002, TWSE required all newly listed firms to hire at least two independent directors and one independent supervisor on each firm's board in order to improve quality of corporate governance in Taiwan.[77] Prior corporate

---

[75] In this paper, we classify directors in Taiwan as (1) executive directors: directors who also hold executive positions in the firm, (2) non-executive directors: directors who do not hold executive position in the directed firm, and (3) independent directors: directors who have no affiliation with the firm. We will also use the title "non-independent directors" to include both executive and non-executive directors.

[76] Bennedsen, Nielsen, Perez-Gonzalez and Wolfenzon (2007) examine the CEO appointment with a dataset from Denmark which consists of CEO's family shareholding. Our research is unique in examining the impact of directors' (including executive and non-executive directors') and directors' family shareholding on firm performance.

[77] The supervisors are designated to monitor the board of directors and are responsible for the independent monitoring and auditing of the firm (Yeh and Woidtke, 2005). There are two types of supervisors sitting on the board of supervisors: (1) the *independent supervisors* who are hired from outside of the firm and do not own shares of the directed firm and (2) the *supervisors* who own shares of the firm

governance research focuses on the relationship (1) between firm performance and director/manager ownership or (2) between firm performance and founding family ownership.[78] Our research fills a void in the current literature by analyzing (a) the effect of monetary incentives on firm performance by both *non-independent* directors and their families, who may motivate directors for intense monitoring, and (b) the effect of non-pecuniary interests on firm performance. The results we find among Taiwanese firms support the incentive and entrenchment effects found in Morck, Shleifer and Vishny (1988) and also illuminate on the agency problem between majority and minority shareholders (agency problem II) suggested by Villalonga and Amit (2006).

Agency theory provides two main streams of theoretical and empirical research addressing the effect of manager/director ownership on firm performance via the incentive and entrenchment effects. The incentive effect derives from Jensen and Meckling (1976) who suggest that a positive relationship exists between management ownership and firm performance. As managerial shareholding increases, the aligned private economic interests motivate managers to pursue higher firm values, thus mitigating agency conflicts. A contrasting idea, the entrenchment effect (Demsetz, 1983; Fama and Jensen, 1983; Jensen and Ruback, 1983) suggests that a higher concentration of managerial ownership may lead to laxity in monitoring and adversely affect firm

---

and can be insiders of the firm before appointed, even though they are responsible for auditing. The requirements regarding independent directors are mandatory for newly listed firms based on the Security Exchange Law. For firms listed before 2002, the recruitment of independent directors is strongly suggested by TWSE.

[78] Example of literature regarding the relation between firm performance and manager ownership includes: Kren and Kerr (1997); Howton, Howton and Olson (2001); Pindado and De La Torre (2004);Chen (2005); Chen (2006); Cosh, Guest and Hughes (2006). Example of literature regarding the relation between firm performance and family ownership includes: Anderson and Reeb (2003); Yeh, Lee and Woidtke (2001);Yeh (2003); Yeh (2005); Yeh and Woidtke (2005).

performance. For example, directors may attempt to protect their directorship by rejecting bids from acquiring firms (Stulz, 1988).[79] Villalonga and Amit (2006) also suggest that increased shares held by individual or family may (1) magnify the conflicts of interest between family (majority) and non-family (minority) shareholders (agency problem II) and thus (2) increase incentives for both expropriation and monitoring. In this paper, we find, which sheds light on Villalonga and Amit's suggestion, that by increasing director' family shareholdings, the agency problem II is reduced because non-independent directors are less likely to expropriate private benefits at the expense of minority shareholders when director's family benefit is at stake.

Empirical studies show mixed support for the incentive and entrenchment effects. For example, Morck, Shleifer and Vishny (1988) find positive association between firm performance and the board ownership when the shareholding is (1) under 5% or (2) over 25%, implying that directors' incentive to improve firm value increases with their stakes in the firm.[80] However, they find a negative association between 5% and 25% of director ownership, implying that the entrenchment effect dominates in this range, even if the incentive effect is present.

The theory of altruism leads to the same predictions as agency theory. Altruism is one of the motivations for family members to maximize family welfare or utility. Becker (1974) suggests that family head's generosity to family members can be due to love or to maximize family welfare. Schulze, Lubatkin and Dino (2003) also suggest that altruism

---

[79] Stulz (1988) suggest that directors, to protect their directorship, may even take actions at the expense of firm's shareholders such as the additional cost spent to block value-enhancing takeovers.

[80] Morck, Shleifer and Vishny (1988) examine the relationship between director ownership and Tobin's Q (the performance measure) with a dataset of Fortune 500 in 1980.

motivates individuals to act to benefit others and to maximize one's own utility.[81] Literature in family firms suggests that altruism can have both a positive and negative impact on the firm (Chrisman, Chua and Litz, 2004). Altruism, for example, can mitigate agency problems (Chrisman, Chua and Litz, 2004; Chrisman, Chua and Sharma, 2005), lead to more cost effectiveness, and increase value for family firms (Carney, 2005).[82] By contrast, altruism may also engender information asymmetries or create agency problems such as free riding, shirking, perquisite consumption and less monitoring (Schulze, Lubatkin and Dino, 2003).[83] Thus, similar to the incentive and entrenchment effects, the theory of altruism suggests that family shareholdings may have positive or negative effects on firm performance.[84]

We examine the research questions by applying market-to-book (M/B) ratio as a performance measure and as dependent variable in an ordinary least square (OLS) regression model, along with independent variables represent directors' (and their family members') shareholdings. In addition, we address possible endogeneity issues by adding the lagged value of the performance measure as a control variable (as in Opler and Titman, 1994).

---

[81] Schulze, Lubatkin and Dino (2003) suggest individual's actions to benefit others and to maximize own utility "allow the individual to simultaneously satisfy both altruistic and egoistic preference" (p.475).

[82] Chrisman, Chua and Litz (2004) suggest that family firms are likely to pursue both economic and non-economic goals and the family involvement may decrease overall agency problem (p.348-349). Carney (2005) suggest the propensity for parsimony gives family firms a strong incentive toward resource conservation and allocation because the decision's impact on family's wealth (p.254).

[83] The examples of agency problems in family firms include (1) children leave the assigned job for a parent to complete (free riding) or (2) children squander their parent's money (shirking). (p.475)

[84] The theory of altruism can have similar effects on firm performance as agency theory does, but the effects may be resulted from different reasons and occur in different ways.

Our results show a significant association exists between market-to-book (M/B) ratio and (1) CEO's shareholdings, (2) non-executive directors' shareholdings, (3) non-executive directors' family shareholdings. The positive association found between CEO's shareholding and M/B ratio is consistent with the incentive effect in agency theory when the ownership is under 5%, as suggested by Morck, Shleifer and Vishny (1988).[85] The result implies that CEOs have an incentive to maximize firms' value which will in turn enhance their pecuniary interest. The negative association founded between non-executive directors' shareholdings and M/B ratio is not only consistent with the entrenchment effect within the 5% to 25% ownership range as suggested by Morck, Shleifer and Vishny (1988) but also support the agency problem II between majority and minority shareholders as suggested by Villalonga and Amit (2006).[86] This result implies that the possibility of expropriating minority shareholders' interest increases when non-executive directors hold more firm shares, similar to the finding of Anderson and Reeb (2004) and the suggestion of Stiglitz (2002).[87] Furthermore, we find that non-executive directors' family shareholding is positively related to M/B ratio.[88] This result indicates that non-executive directors can be motivated by their family members to improve firm value and thus the family welfare. The result also implies that having family member ownership may reduce the agency problem II because non-executive directors are less

[85] The average percentage of firm shares owned by CEO in the dataset is 3.24%.

[86] The Taiwanese non-executive directors own an average of 21.17% firm shares in the dataset.

[87] Anderson and Reeb (2004) find that the percentage of affiliated directors on board is negatively related to firm performance in the U.S. family firms.

[88] The non-executive directors' family members own, on average, 3.05% of firm shares in the dataset. By contrast, the average proportion of firm shares owned by non-executive directors is 21.12%.

likely to expropriate private benefits at the expense of minority shareholders when directors' family benefit is involved.

Next, we examine the association between firm performance and independent directors' professional backgrounds and find that the career affiliation of executive officer is positively related to M/B ratio. The result is consistent with skill matching theory (Jovanovic; 1979) and therefore independent directors who are executives are likely to maximize firm's profits over the future, as proxied by M/B ratio.[89] In addition, we also observe a positive and a negative relation between the career affiliation of lawyer and retired government officer, respectively, and the M/B ratio in Taiwanese firms.

In robustness tests, besides the return of assets (ROA), we also use performance change as the dependent variable (as in Huson, Malatesta and Parrino, 2004); this accounts for firm specific variables that may have been omitted. We also control for non-executive directors' board seats, institutional investors' shareholdings, firm size, capital structure, board size, year effects, and industry effects in our model. We use the percentage of non-executive directors' board seats as a control variable to proxy for omitted variables affecting the percentage of independent directors on the board. As compared to other directors on the board, non-executive directors share the most similarity with independent directors except that there is no 1% shareholding restriction applied on non-executive directors. To our knowledge, analysis addressing endogeneity concerns and omitted firm-specific variables is new for corporate governance research in Taiwan.

---

[89] Skill matching theory is first proposed by Jovanovic (1979) who examine the productivity implied information and job opportunity. Jovanovic (1984) also suggests that workers join or leave the job market "because of changes in the perceived value of their market opportunities. (p.109)"

The results confirm the robustness of our findings on the relationship between firm performance and (1) CEO's shareholdings, (2) non-executive directors' shareholdings, and (3) non-executive directors' family shareholdings. Independent directors' career affiliations are not found to be significantly related to ROA, implying that the observed career affiliation effects on performance expected by investors have not been reflected in the improvement of firms in the time period of our study. In addition, results indicate that there is no difference in the influence on firm performance by independent directors or by executive directors, implying that independent directors perform as well as executive directors in Taiwanese firms.[90]

The remainder of this paper is structured as follows. In Chapter II, we review literature on (a) incentive and entrenchment effects, (b) board/management shareholdings and firm performance, (c) altruism, and (d) independent directors' reputation. In Chapter III, we present relevant theories and research hypotheses. We then discuss the data and research methodology in Chapter IV. The results and robustness tests are presented in Chapter V. Chapter VI summarizes and concludes our research findings.

---

[90] Proportions of independent and non-executive directors on the board are both used in the independent variables, which leaves the impact from the proportion of executive directors on firm performance in the intercept. The proportion of independent directors shows no significant result in the model with full sample, implying that there is no difference in the influence on firm performance by independent or by executive directors. However, a positive (and significant) relation between the proportion of independent director on the board and M/B ratio is found in the sample that non-executive directors' shareholdings are above or equal median.

CHAPTER IX

LITERATURE REVIEW

9.1 Incentive and Entrenchment Effects: Ownership vs. Firm Performance

A large body of theoretical and empirical research addresses the effect of manager/director ownership on firm performance. According to the incentive effect (Jensen and Meckling, 1976), a positive relationship exists between management ownership and firm performance. As managerial shareholding increases, the alignment of private economic interests of managers and those of shareholders increases and so managers are more likely to maximize firm value. This reduces managerial incentives to divert resources away from the firm. The alignment of managers and shareholders motivates managers to pursue higher firm values, benefiting both themselves and the other shareholders.[91]

A contrasting idea, the entrenchment effect (Demsetz, 1983; Fama and Jensen, 1983; Jensen and Ruback, 1983) suggests that a higher concentration of managerial ownership may lead to laxity in monitoring and adversely affect firm performance. Managers with more shareholdings may adopt a more conservative attitude toward decision making. Directors may attempt to protect their directorship by rejecting bids from acquiring firms

---

[91] Keasey, Short and Watson (1994) and Chiang (2005). Besides, Shleifer and Vishny (1997) also suggest that larger shareholders use their voting power to alleviate agency problems and maximize firm value. For managers with small stake of firm shares, external monitoring for managers' decisions can be achieved through market discipline such as (1) managerial labor markets (Fama, 1980), (2) product markets (Hart, 1983), or (3) corporate control markets (Jensen and Ruback, 1983).

at the expense of their firm's shareholders such as the additional cost spent to block value-enhancing takeovers (Stulz, 1988).[92]

Villalonga and Amit (2006) examine the impact of family ownership/control on the firm performance to investigate the agency conflicts between family (majority) and non-family (minority) shareholders (agency problem II). They suggest that increased shares held by individual or family may (1) magnify conflicts of interest in agency problem II and thus (2) increase large shareholders' incentives for both expropriation and monitoring.[93] The empirical studies regarding incentive and entrenchment effects in the firms are discussed in the next section.

9.2 Board/Management Shareholdings and Firm Value

Empirical studies show mixed results for incentive and entrenchment effects. For example, Morck, Shleifer and Vishny (1988) find a non-linear relationship between director ownership and firm performance measured by Tobin's Q in Fortune 500 firms. Their results indicate a positive impact (incentive effect) on firm performance when director ownership is (1) less then 5% or (2) over 25% ownership but a negative impact (entrenchment effect) on firm performance between the 5% to 25% range of director ownership. In McConnell and Servaes' (1990) empirical study of U.S. firms, the results

---

[92] Chiang (2005) suggests that directors may protect their directorship by rejecting bids from acquiring firms. In addition, Shleifer and Vishny (1997) also suggest that large shareholders' interests may not parallel those of other investors. Stulz (1988) find an increase in managerial control of voting rights decreases the probability of tender offer (decreases the expected value of the bid) and increase the premium in the offer from the bidder.

[93] Villalonga and Amit (2006) name this type of agency conflict as Agency Problem II. They find that (1) family ownership creates firm value only when founder is in control and (2) when descendent serves as CEO, firm value is destroyed. They also find that firm value will decrease when large (family) shareholders' control rights are larger than cashflow rights (shareholdings).

only confirms the positive relation under 5% insider ownership. Morck, Shleifer and Vishny (1988) suggest the finding of positive impacts reflects "managers' greater incentives to maximize value as their stake rises (p.301)." For the negative impact found within the 5% to 25% ownership range, Morck, Shleifer and Vishny (1988) suggest that "the incentive effect can still be operative; it is just dominated by the entrenchment effect (p.302)." Morck, Shleifer and Vishny (1988) also suggest the directors, excluding top officers, are capable of becoming entrenched since those directors are less likely to have the corporate perquisites typical of top officers.[94] The entrenchment opportunity, which may destroy corporate wealth, can be embedded in corporate projects desired by the board but not necessarily by the market.

Mixed results found regarding the impact of managerial shareholding on firm performance as well. For example, Hermalin and Weisbach (1988) find a positive effect when shareholding is (1) less than 1% or (2) between 5% and 20% and a negative effect when shareholding is (1) between 1% and 5% or (2) over 20%. Both Lee, Rosenstein, Rangan and Davidson III (1992) and Chen and Steiner (1999) find that increased managerial ownership is related to decreased manager-shareholder agency costs, implying a positive effect on firm value. However, Demsetz and Villalonga (2001) find no relation between ownership structure and firm performance measured by Tobin's Q.

---

[94] Morck, Shleifer and Vishny (1988) denote the variable OUTBOARD to represent the board members excluding the top officer directors (denoted as OFFICER, usually the chairman and the president).

They suggest the lack of significant results may be due to (1) the endogeneity of ownership or (2) the measure of ownership structure or firm performance.[95]

9.3 Altruism and Firm Value

The theory of altruism is first described in Becker (1974) who suggests that (1) a family head, to maximize family income, will consider the effect of personal actions on total family income and (2) family members "are motivated to maximize family income and consumption … (p.1080)." Schulze, Lubatkin and Dino (2002) define altruism as "a moral value that motivates individuals to undertake actions that benefit others without any expectation of external reward (p.252)."[96] Becker (1981) also suggests that parents' generosity to children can be due to love and also because parents' welfare would be harmed if they act otherwise. Schulze, Lubatkin and Dino (2003) posit the efforts, among family members, to maximize one's own utility "allow the individual to simultaneously satisfy both altruistic and egoistic preference (p.475)."

In family firm research, Chrisman, Chua and Litz (2004) suggest that altruism can have offsetting impacts on the firm. For example, reciprocal and symmetrical altruism can mitigate agency problems (Chrisman, Chua and Sharma, 2005), lead to more cost effectiveness, and increase value for family firms (Carney, 2005).[97] In this research, we

---

[95] The simultaneity between ownership structure and firm value is the main source of endogeneity problem which affects the result of value-ownership research.

[96] For example, Becker suggests that the family head "would not move to another city if his spouse's or children's income would be decreased by more than his own income would be increased (p.1077)."

[97] Chrisman, Chua and Sharma (2005) suggest that altruism is reciprocal when "both family owner and family manager are altruistic toward each other" and is symmetrical when there is "equally strong reciprocal altruism." (p.560-561)

assume that the negative impact from directors' families in Taiwan is unlikely because they are passive participants and have no direct control over the firm's operations.[98] Therefore directors' altruism toward minority family shareholdings can only benefit the firm by reducing their propensity to extract private interests from minority shareholders. This is in contrast to altruism on the part of family owners toward family managers where the latter may respond by free riding, shirking, or the consumption of perquisites because of a lack of monitoring or enforcement (Schulze, Lubatkin and Dino, 2003).

9.4 Independent Director's Reputation: Firm Performance and Motivation

The concept of director reputation as a motivating factor for monitoring managers can be traced to Watts and Zimmerman's working paper in 1978 and the published version in 1983 regarding the evolution of independent outside auditors.[99] Watts and Zimmerman suggest that outside auditors are disciplined by the market. To preserve their reputation, outside auditors, via high quality audits, will prevent management's expropriation of shareholder wealth. Fama and Jensen (1983) suggest that outside directors can prevent collusive arrangements between managers and be regarded as professional referees among managers. Fama (1980) speculates that '… like the

---

[98] For example, parent's generosity toward children in family firms may engender information asymmetries (Schulze, Lubatkin and Dino, 2000) or create agency problems such as free riding, shirking, perquisite consumption and less monitoring (Schulze, Lubatkin and Dino, 2003).

[99] Footnote 3, p.294, Fama (1980).

professional outside director, the welfare of the outside auditor depends largely on "reputation"…'[100]

According to Fama and Jensen (1983), Lorsch and MacIver (1989) and Srinivasan (2005), outside directors may expect benefits from their directorship such as learning, networking opportunities and prestige. Based on survey research by Lorsch and MacIver (1989), the indirect (non-pecuniary) rewards seem to be more important to directors than the direct financial incentives.[101] If the directed firm performed poorly, directors tended to bear the consequences which reflect negatively on either their reputation or even directorships in other firms.[102]

In the skill matching model, Jovanovic (1979) suggests that the productivity implied information is related to job opportunity. Jovanovic (1984) suggests that workers join or leave the job market "because of changes in the perceived value of their market opportunities. (p.109)" MacDonald (1982) examines how person-specific information is employed to choose among jobs. He finds that the principal determinant in choosing job is "the individual's expectation about the data that the information generating activities might produce. (p.49)" Skill-related information can also be incorporated in individual's industry affiliation. For example, Kim (1998) examines a model of worker sorting and

---

[100] Footnote 3, p.294, Fama (1980). Fama and Jensen (1983) also speculate that outside directors, who rely more on their reputation as professionals, will have more concerns regarding potential reputation penalties due to poor firm performance. Gilson (1990) suggests that when firms suffer financial distress, outside directors' reputations as expert monitors suffer, too. As a consequence, outside directors of distressed firms may get fewer offers to serve on other boards.

[101] Based on survey responses, Lorsch and MacIver (1989) list the personal benefits from board directorship in order of importance: opportunity to learn, seeing new business, establishing contacts to enhance business relationship, opportunity to contribute to society, and compensation. (p.298, Srinivasan, 2005)

[102] Fama (1980); Fich and Shivdasani (2006); and Srinivasan (2005)

productivity to explain inter-industry wage differentials. The result suggests that the industry affiliation "will be informative about worker quality … (p.491)"

CHAPTER X

THEORY AND HYPOTHESES

10.1 Theory

In the theory of firm, an organization is suggested to incorporate production factors and to reduce information cost (Alchian and Demsetz, 1972) since the market (price mechanism) of resource allocation is not costless (Coase, 1937).[103] In the delegation of the power to allocate resources in the firm from principal to agent, agency problems may arise due to (1) conflict of interests (e.g. goal conflicts in risk sharing), (2) information asymmetry or (3) difficulty in effort verification (Jensen and Meckling, 1976; Eisenhardt, 1989).[104] Two general examples of agency problems are adverse selection (Akerlof, 1970) and moral hazard (Arrow, 1971). Jensen and Meckling (1976) suggest that ownership can align managers' interest with that of owners and, in turn, affect performance. In this paper, we assume that the agency problems can be extended to board members and thus, in the next section, we will develop hypotheses to examine the impact of directors' (plus their families') shareholdings on firm performance in Taiwan.

According to Schulze, Lubatkin and Dino (2003), altruism can align interests among agents, increase communication and cooperation and then reduce information

---

[103] Alchian and Demsetz (1972) suggest the team production (e.g. the firm) can reduce the information cost in metering, detection, and discipline of the agent's efforts.

[104] The origin of agency theory can be traced to the concept of risk sharing (Wilson, 1968) among individuals or group when each party has different attitude toward risk (Eisenhardt, 1989).

asymmetries within the family firms. Chrisman, Chua and Litz (2004) also suggest that family involvement may decrease agency problem in family firms. In Taiwanese firms, we assert the possibility that directors' decision to allocate firm shares to family members is an example of altruistic behavior. Once their family members own shares, directors will exert their best efforts, based on altruism, to maximize share value. In this research, we assume that a negative impact on firm from directors' families in Taiwan is unlikely. Therefore, due to altruism, directors' family influence can only benefit the firm rather than impair firm value by extracting private interests from minority shareholders. Moreover, if directors' family members own relatively smaller firm shares, then it would be difficult to distinguish whether those family members' contribution to the firm is due to (1) directors' altruistic behavior or (2) family members' demand for monitoring to reduce expropriation of minority shareholders' interest, such as the agency problem II.

Fama and Jensen (1983) suggest that the U.S. independent directors use the directorship to signal the market that they are expert decision makers and to prevent the collusion between managers. Helland and Sykuta (2005) find that boards with higher outside director concentration are more effective in monitoring management.[105] If firm performance is poor, independent directors tend to bear the responsibility for prior performance in monitoring, according to both Fama (1980) and Fama and Jensen (1983). Fairchild and Li (2005) also find that director quality is positively related to firm

---

[105] Helland and Sykuta (2005) find the U.S. companies with more outside directors sitting on the boards are less likely to be the target of shareholder litigation. They find the firms with (1) higher proportion of inside and gray directors on the board and (2) smaller board size are more likely to be the defendants in securities litigation.

performance. [106] Based on these studies, we expect to see that (1) the presence of independent directors on the board and (2) independent directors' non-pecuniary interest, such as reputation, will contribute positively to the firm.

10.2 Research Hypotheses

10.2.1 Shareholdings of Non-independent Directors and Their Family Members

For Taiwanese firms, ownership is often concentrated in a small number of large shareholders such as directors, CEOs, and chairmen of the board. [107] Thus, shareholding can be seen as a proxy for directors' pecuniary incentive. If share price drops due to poor firm performance, so will directors' personal wealth. It is also common that directors in Taiwan allocate part of their shareholdings to their family members. Thus, the impact of poor firm performance is expected to affect both directors' and their relatives' personal wealth. According to agency theory and the theory of altruism, we expect the shares owned by non-independent directors' family members (1) align those family members' pecuniary interests with shareholders' and (2) motivate directors to monitor management to improve firm performance. We expect that, by increasing director' family shareholdings, the conflict of interest between majority and minority shareholders (agency problem II) is reduced because the non-independent directors are less likely to

---

[106] Fairchild and Li (2005) find that the "above average" quality directors are related to firms with "above average" post-hiring performance. The classification of "above average" and "below average" is based on the stock performance of the target firms that directors departed after takeovers. Fairchild and Li also find that (1) "above average" quality directors receive additional directorship following takeovers and (2) the firms hiring "above average" quality directors will have better performance.

[107] Claessens, Djankov and Lang (2000); Yeh, Lee and Woidtke (2001).

expropriate private benefits at the expense of minority shareholders when director's family benefit is at stake.[108]

We further divide non-independent directors' shareholding data into three categories: (1) shares owned by *CEOs* and their family members, (2) shares owned by *executive directors* and their family members, and (3) shares owned by *non-executive directors* and their family members. *Executive directors* are the directors who also hold executive officer positions, except CEO, in the firm. We separate the shareholding of the CEO from that of executive directors since the CEO has more direct control over firm operations. As compared to the executive directors, CEO has better knowledge on firm's strategic plans and more power to take action. *Non-executive directors* represent the directors who are neither executive nor independent directors. In the first hypothesis, we expect to find a positive relation between firm performance and shares owned by (1) non-independent directors, including *CEO*, *executive directors*, and *non-executive directors*, and by (2) non-independent directors' family members.

In the second hypothesis, we expect the impact of directors' family shareholdings on firm performance is greater than that of directors' shareholdings. The stronger impact of family influence can be a result of either altruism (to maximize family's total welfare, including monetary and non-monetary benefits such as reputation) or monetary interest (to increase monitoring to improve firm value, based on agency theory). Although directors' family members do not sit on the board and thus are not in a direct monitoring position, directors, based on their altruism toward family members, will be motivated to

---

[108] Villalonga and Amit (2006) find that firms with both family control and founder-CEO have higher Tobin's Q than firms with no family control and no founder-CEO, implying that the cost of agency problem II is less severe than the cost of agency problem I. They suggest that the benefit of founder-CEO may outweigh the cost of family control in family firms.

monitor to improve firm value. We expect that altruism for family wellbeing will have the similar influence on firm performance as family's demands for intense monitoring do.

H1: The proportion of shares owned by *non-independent* directors and their *family* members is *positively* related to firm performance.

H2: Directors' *family* shareholding's impact on firm performance is greater than *directors'* shareholdings (possibly altruism or monetary interest)

10.2.2 Independent Directors: Reputation and Monitoring

Firms recruit independent directors for their potential contribution in reputation, expertise in the business, or social connections. For example, Taiwan Semiconductor Manufacturing Co., Ltd. (TSMC), a leading semiconductor manufacturer, has had Michael Porter, Lester Thurow, Sir Peter Bonfield, and Carleton Fiorina on its corporate board as independent directors or independent supervisors since 2002. If we can generalize from this example, it suggests that independent directors' reputation is a major concern of the firm.

The professional background of independent directors can benefit the firm and provide non-pecuniary motivation for careful monitoring when the independent directors' reputation is at stake. We assume that since wealth (such as shareholding or retainers) is restricted, reputation (or prestige) tends to dominate Taiwanese independent directors' monitoring motivations. Reputation penalties for independent directors, e.g. loss of prestige or credibility, with professional backgrounds such as professors, accountants,

lawyers, senior executives, or retired government officers, can be a serious concern if the firm performs poorly.

In the third hypothesis, we expect that *independent* directors' non-pecuniary motivation is at least as strong as *non-independent* directors' pecuniary motivation. We expect to see that firm performance does not decline when the proportion of independent directors on the board increases. The result, if significant, can be used to illuminate TWSE's regulatory requirements on appointing independent directors to improve corporate governance in Taiwan.[109] Thus, we expect to find a positive association between firm performance and the proportion of board seats held by *independent directors* in the third hypothesis. In the fourth hypothesis, we further test whether independent directors' professional backgrounds (reputations) hurts firm performance.[110] We expect to find a positive relation between firm performance and the proportion of *independent directors'* professional background as indicated by career affiliations such as executive officers in Taiwanese firms.[111]

H3: The proportion of independent directors on the board is *positively* related to firm performance in Taiwanese firms.

---

[109] In the U.S. firms, Helland and Sykuta (2005) find that U.S. companies with more outside directors are less likely to be targets of shareholder litigation. They suggest that boards with higher proportions of outside directors are better at monitoring management.

[110] Individual's industry affiliation can also incorporate skill-related information. For example, Kim (1998) examines a model of worker sorting and productivity to explain inter-industry wage differentials. He suggests that the industry affiliation (1) "will be informative about worker quality … (p.491)" and (2) "is determined by a selection process similar to the one involved in occupational choice. (p.495)"

[111] Rosenstein and Wyatt (1990) find that the share price reaction to the announcement of outside directors is unrelated to outside director's occupation which they classify into three categories: (1) neutral outsiders, (2) financial outsiders, and (3) corporate outsiders.

H4: In Taiwan, firm performance is *positively* related to an independent director's career affiliations, such as executive officers.

CHAPTER XI

DATA AND METHODS

11.1 Data

The sample in this study consists of year-end fiscal data for 2,164 publicly listed

companies in Taiwan from 2002 to 2006. Data of directors' shareholding and that of their

family members is collected from the Market Observation Post System (MOPS) website

provided by Taiwan Stock Exchange (TWSE).[112] We hand collect the shareholding data

for each company from the MOPS website and further divide it into shares owned by (1)

CEOs, (2) *executive* directors, (3) *non-executive* directors and (4) *independent* directors.

In each company profile link, we also collect shareholding data for each director's family

members.

From the same source, we choose five career affiliations (professors, accountants,

lawyers, senior executives and retired government officers) to represent the professional

background of each independent director. Directors with other career affiliations having

few observations, e.g. medical doctors, or with no career affiliation listed are grouped as

"other". We select only economically important firms by focusing on firms listed by the

TWSE on the MOPS website. Other company-specific data during the same sampling

---

[112] The data is collected from the corporate governance profiles in the MOPS website. The web
link for MOPS is: newmops.twse.com.tw and emops.twse.com.tw/emops_all.htm (English). The web link
for TWSE is: www.twse.com.tw/ch/ and www.twse.com.tw/en/ (English).

period, including firm accounting information, board size, and firm performance measures, are collected from the Taiwan Economic Journal (TEJ) database.[113]

The sample originally consists of 2,190 publicly listed firms in Taiwan. One observation of the market-to-book ratio (13.19) is much higher than the rest of data at 19.8 standard deviations away from the mean (1.1565). We drop the outliers in the dataset by removing 1% of observations from each tail. This yields a dataset with 2,164 observations with the 25th, median, and the 75th percentile observation of market-to-book ratio as 0.8749, 1.0210, and 1.2658, respectively. Characteristic of samples will be described in the next section. In section 4.3, we will discuss the model and variables to examine research hypotheses.

11.2 Summary Statistics

11.2.1 Composition of Directors in Taiwan: 2002 to 2006

In Table 19, we present overall observations regarding the (1) number and (2) proportion of executive, non-executive, and independent directors in Taiwanese publicly listed firms between 2002 and 2006. From the original observation of 3,124 firms during the sampling period, we collect the shareholding data of 5,046 executive directors and 20,848 non-executive directors (as well as their family's shareholdings). Among the 1,184 firms with independent directors on the board, we also collect the career affiliation data from 1,842 independent directors. The number of year-end observations in each

---

[113] The web link for TEJ is: www.tej.com.tw/twsite/ and www.finasia.biz/ensite/ (English). Yeh and Woidtke (2005) use the same database for financial data to examine the determinants of board composition and firm valuation.

director category is presented in the middle of Table 19. An upward trend in the number of (1) independent directors and (2) firms with independent directors on the board is observed throughout the sampling period, indicating independent directors assignments are increased in accordance with TWSE regulations.

At the bottom of Table 19 is the proportion of each director class in the firm between 2002 and 2006. The average number of non-independent directors per firm is 8.29, 1.62 belongs to executive directors and 6.67 belongs to non-executive directors. The typical board of Taiwanese firms in the sample consists of 18.2% executive directors, 75.2% non-executive directors, and 6.6% independent directors.[114] The average number of independent directors per firm is (1) 1.56 for firms with independent directors on the board and is (2) 0.59 for all listed firms, implying that some firms listed before 2002 still haven't assigned independent directors to sit on the board yet.

11.2.2 Sample Statistics

Table 20 presents descriptive statistics of variables in the sample, after matching with performance data and excluding missing data. The sample consists of 2,164 firms, for which we have complete dataset on firm performance, directors' (and their family members') shareholding, proportion of independent directors' seats on board, and independent directors' career affiliations from 2002 to 2006. The performance measure, M/B ratio, has mean value of 1.1565 and median of 1.0210. For independent variables regarding directors' and their family's shareholdings, an average of 3.2378% of firm

---

[114] The average proportion of executive directors on the board (18.2%), for example, is calculated as the number of all executive directors (5,046) in the sample divided by the number of all three classes of directors (5,046 + 20,848 + 1,842).

shares is owned by CEO and 1.0238% of firm shares is owned by CEOs' family members. The median CEO and CEO's family shareholding is 1.0409% and 0.0149%, respectively. The data indicates that, among Taiwanese listed firms, CEOs and their family members own an average of 4.26% of directed firms' outstanding shares. For shares owned by *executive* directors and their families, we find that 0.966% of firm shares are owned by executive directors and 0.3306% of firm shares are owned by executive directors' family members on average. The median proportion of shares owned by executive directors and their family members are 0% in the sample. The data indicates that (1) the *executive* directors and their family members own about 1.3% of firm's outstanding shares and (2) the distribution of shareholding is skewed to the right, implying that some executive directors (or their family members) holding much more firm shares than the average.

For shares owned by *non-executive* directors and their families, on average, non-executive directors own 21.169% of firm shares and their family members own 3.046% of firm shares. The median shareholding of non-executive directors and non-executive directors' family is 18.4410% and 0.0688%, respectively, indicating that about 24.22% of firm shares are owned by non-executive directors and their family members. This 24.22% shareholding is (1) 4.7 times and (2) 17.6 times higher than the shares owned by (1) *CEOs* (plus family members) and (2) *executive directors* (plus family members), respectively. Also, we find that both the mean and the median shareholding of non-executive directors (and their family members) fall within the ownership range (5% to 25%) where Morck, Shleifer and Vishny (1988) found entrenchment effect occurs. We will explore if the results from Taiwanese firms indicate the same trait in the next chapter.

For *independent* directors and their families, we find that independent directors and their family members own an average of 0.0212% and 0.0029%, respectively, of firm shares. The combined shares owned by independent directors and their family members comprise 0.0241%, lower than the 1% regulatory maximum imposed TWSE.

Independent directors account for an average of 6.04% of board seats, among publicly listed firms in Taiwan. The median of 0% shows that some firms, especially those listed before 2002, still haven't assigned independent directors. For the proportion of independent directors' professional background to the board seats, we find that the most frequent career affiliation is that of executive (3.31% of board seats); next are the professors (1.21%), followed by accountants (0.39%) and lawyers (0.199%). The smallest group is the retired government officers, accounting for 0.0433% of board seats in the sample.

In Table 20, we also present other characteristic of Taiwanese firms in the sample, including (1) the proportion of *non-executive* directors on the board, (2) institutional investor shareholdings, (3) firm size, (4) degree of leverage, (5) lagged one-year firm performance, and (6) board size. *Non-executive* directors account for an average of 57.73% of board seats with the median at 60%. Institutional investors own an average of 37.86% of firm shares with the median at 36.645%. The average firm size (measured by total assets) is 24.714 billion in Taiwan Dollars (equivalent to $706.11 million). As for the degree of leverage, the average and median debt to asset ratio is 45.764% and 46.86%, respectively. We choose lagged one year ROA (ROA_{t-1}) and lagged one year market-to-book ratio (MB_{t-1}) to represent lagged firm performance. The average ROA_{t-1} and MB_{t-1} in the sample is 5.388% and 1.0966, respectively. The mean board size among Taiwanese

firm in the sample is 7.05 seats, with the 25th, 50th, and 75th percentile of observation as 5, 7 and 8 seats per firm, respectively. As compared to the U.S. firms, we find that Taiwanese firms have relatively fewer directors on the board. For example, the board size reported by Yermack (1996) and Anderson and Reeb (2004) is 12.25 seats and 11.44 seats, respectively.[115]

11.3 Model

We combine each group of independent variables and apply OLS regression model to test hypotheses regarding directors' pecuniary or non-pecuniary interest alignments with firm performance. For firm performance, we use the market-to-book ratio (M/B) and return on assets (*ROA*) as dependent variables in the model. The first model in this essay (Model 3) consists of directors' shareholdings, percentage of independent directors on the board, and control variables. Model 3 is:

$$
\begin{aligned}
FirmPerformance = {}& \alpha + \beta_1 \%ShareByCEO + \beta_2 \%ShareByExecDir \\
& + \beta_3 \%ShareByNonExecDir + \beta_4 \%ShareByIndepDir \\
& + \beta_5 \%SeatByIndepDir + \beta_6 \%SeatByNonExecDir \\
& + \beta_7 \%ShareByInstitution + \beta_8 Ln(TotalAssets) + \beta_9 Debt/Asset \\
& + \beta_{10} ROA_{t-1} + \beta_{11} MB_{t-1} + \beta_{12} DirectorSeats \\
& + YearDummies + IndustryDummies + \varepsilon,
\end{aligned}
\tag{3}
$$

In the second model (Model 4), we further add directors' family's shareholdings to explore the effect of those family's shareholdings on firm performance. Model 4 is:

---

[115] The sample used in Yermack (1996) comprises 452 Forbes 500 firms from 1984 to 1991. The sample used in Anderson and Reeb (2004) comprises 1,992 S&P 500 firms from 1992 to 1999.

$$
\begin{aligned}
FirmPerformance = {} & \alpha + \beta_1 \%ShareByCEO + \beta_2 \%ShareByCEO'sFamily \\
& + \beta_3 \%ShareByExecDir + \beta_4 \%ShareByExecDir'sFamily \\
& + \beta_5 \%ShareByNonExecDir + \beta_6 \%ShareByNonExecDir'sFamily \\
& + \beta_7 \%ShareByIndepDir + \beta_8 \%ShareByIndepDir'sFamily \\
& + \beta_9 \%SeatByIndepDir + \beta_{10} \%SeatByNonExecDir \\
& + \beta_{11} \%ShareByInstitution + \beta_{12} Ln(TotalAssets) + \beta_{13} Debt/Asset \\
& + \beta_{14} ROA_{t-1} + \beta_{15} MB_{t-1} + \beta_{16} DirectorSeats \\
& + YearDummies + IndustryDummies + \varepsilon,
\end{aligned}
\tag{4}
$$

The third model is used to observe if independent directors' career affiliations are related to firm performance. We replace the percentage of independent directors on board with five variables regarding independent directors' career affiliations. This model (Model 5) consists of directors' (and their family's) shareholdings, independent directors' career affiliations, and the control variables. Model 5 is:

$$
\begin{aligned}
FirmPerformance = {} & \alpha + \beta_1 \%ShareByCEO + \beta_2 \%ShareByCEO'sFamily \\
& + \beta_3 \%ShareByExecDir + \beta_4 \%ShareByExecDir'sFamily \\
& + \beta_5 \%ShareByNonExecDir + \beta_6 \%ShareByNonExecDir'sFamily \\
& + \beta_7 \%Title\Pr ofessor + \beta_8 \%TitleAcct. + \beta_9 \%TitleLawyer \\
& + \beta_{10} \%TitleExecutive + \beta_{11} \%TitleGovOfficer \\
& + \beta_{12} \%SeatByNonExecDir \\
& + \beta_{13} \%ShareByInstitution + \beta_{14} Ln(TotalAssets) + \beta_{15} Debt/Asset \\
& + \beta_{16} ROA_{t-1} + \beta_{17} MB_{t-1} + \beta_{18} DirectorSeats \\
& + YearDummies + IndustruDummies + \varepsilon,
\end{aligned}
\tag{5}
$$

11.3.1 Dependent Variable

We apply the market-to-book ratio (M/B) as dependent variable in the ordinary least square (OLS) regression model to test our hypotheses. The reasons to adopt M/B ratio as performance measure are partly to be in line with that in previous literature and partly to represent market investors' perception of firm value.[116] The market-to-book ratio (M/B) is defined as:

$$\frac{MarketValue(Equities) + BookValue(Debts + preferredStock)}{BookValue(Assets)} \quad (6)$$

To test the robustness of the results, we further apply various firm performance measures as dependent variable in the model, including (1) return on assets (ROA), (2) changes in market-to-book ratio, and (3) changes in ROA. In robustness tests, we use performance change as the dependent variable to account for firm-specific variables omitted in the model (this follows Huson, Malatesta and Parrino, 2004).[117]

11.3.2 Independent Variables

The model employs two groups of independent variables. The first group of variables includes firm shares owned by directors and their family members. The second group of independent variables relates to the proportion of board seats held by *independent* directors and those *independent* directors' career affiliations. The proportion

---

[116] Claessens, Djankov, Fan and Lang (2002), Faccio and Lang (2002), La porta, Lopez-De-Silanes, Shleifer and Vishny (2002), and Yeh (2005) also use market-to-book ratio as firm performance measure.

[117] ROA is also used by Keasey, Short and Watson (1994) to examine the impact of directors' ownership on firm performance. Huson, Malatesta and Parrino (2004) suggest that the advantage of applying performance change as dependent variable is " … we are able to isolate a specific corporate event in which internal monitors make a decision that potentially has important implications for the future performance of the firm." (p.244)

of independent directors on the board is calculated as the number of *independent* directors divided by the number of board seats in each firm. The proportion of *independent* directors' career affiliations is calculated as the number of each of the career affiliations held by independent directors divided by the number of board seats in each firm. The description of variables is listed in the following table:

Table 17

Description of Independent Variables

Variable	Variable Description
%Share by CEO	The proportion of shares owned by CEO
%Share by CEO's Family	The proportion of shares owned by CEO's family
%Share by Executive Dir.	The proportion of shares owned by executive directors
%Share by Executive Dir.'s Family	The proportion of shares owned by executive directors' family members
%Share by Non-Executive Dir.	The proportion of shares owned by non-executive directors
%Share by Non-Executive Dir.'s Family	The proportion of shares owned by non-executive directors' family members
%Share by Independent Dir.	The proportion of shares owned by independent directors
%Share by Independent Dir.'s Family	The proportion of shares owned by independent directors' family members
%Seats by Independent Dir.	The proportion of *independent* directors on the board
%Title Professor	The proportion of career affiliation held by independent directors as professors
%Title Acct.	The proportion of career affiliation held by independent directors as accountants
%Title Lawyer	The proportion of career affiliation held by independent directors as lawyers
%Title Executive	The proportion of career affiliation held by independent directors as senior executives
%Title Gov. Officer	The proportion of career affiliation held by independent directors as retired government officers,

We also control for (1) the proportion of *non-executive* directors on the board (to proxy for omitted variables affecting the proportion of independent directors on the board), (2) institutional investor shareholdings, (3) firm size, (4) degree of leverage, (5)

endogeneity, (6) board size, (7) year effect, and (8) industry effect. We apply two methods to control for possible endogeneity.[118] The first method is to add lagged one period performance measures to the control variables, as used by Opler and Titman (1994). We apply average lagged one year ROA (ROA_{t-1}) and lagged one year market-to-book ratio (MB_{t-1}) to proxy for the firm-specific factors omitted in the model. The second method is to use performance changes as the dependent variable in the model, as used by Huson, Malatesta and Parrino (2004). The description of control variables is listed in the following table:

Table 18

Description of Control Variables

Variable	Variable Description
% Seat by Non-Exec. Dir.	The proportion of non-executive directors on the board
%Share by Institutional Investors	The proportion of shares owned by institutional investors
Ln (Total Assets)	Natural log of total assets
Debt / Assets	The ratio of total debts to total assets
ROA_{t-1}	Lagged one period return on assets
MB_{t-1}	Lagged one period market-to-book ratio
Director Seats	The number of director seats in the firm
Year Dummy	Dummy variables for years in the sample
Industry Dummy	Dummy variables for industries in the sample

---

[118] The simultaneity between ownership structure and firm value is the main source of endogeneity problem which affects the result of value-ownership research.

CHAPTER XII

RESULTS AND ROBUSTNESS TESTS

12.1 Results

In the first hypothesis, based on agency theory, we expect to see an association between firm performance and firm shares owned by directors and their family members in Taiwan. Previous literature show mixed results based on various samples and measurements. In Table 21, we first test the hypothesis with the model consisting only directors' shareholdings (Model 1) and then with shares owned by directors and by directors' family members (Model 2). For firm shares owned by CEOs, we find a significant and positive association between M/B ratio and *CEO's* shareholding in both Model 1 and 2 (0.3564** and 0.3056*, respectively)[119]. However, no significant result is found for (1) *executive* directors' shareholdings and (2) shares owned by *CEO's* or *executive* directors' *family* members.[120] Consistent with agency theory, the result shows CEOs control firms' operations and have an incentive to maximize firm value which will enhance their pecuniary interest. Also, CEO shareholding falls within the ownership range (0% to 5%) that Morck, Shleifer and Vishny (1988) suggest the incentive effect

---

[119] Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

[120] *Executive* directors may weight more on career perspective rather than fighting with CEO. In other words, the present value of executive directors' wages and benefits (by keeping the directorship) may outweigh the present value of executive directors' shareholding (if firm value increases by opposing CEO's proposal).

occurs.[121] Thus, the positive effect of CEO's shareholding on firm performance found in Taiwanese firms is consistent with agency theory and with Morck, Shleifer and Vishny's (1988) results regarding incentive effects.

We further find that the proportion of shares owned by *non-executive* directors is negatively related (-0.2442** in Model 1 and -0.2595*** in Model 2) to M/B ratio. This result is similar to (a) the finding of Anderson and Reeb (2004) and (b) the suggestion of Stiglitz (2002) that non-executive directors may not do a good job in monitoring and may not contribute positively to the firm.[122] For example, free riding, shirking, or perquisite consumption may overweigh the pecuniary interest of shares owned, implying that share value is not the only motivation for non-executive directors. Also, non-executive director's shareholding falls within the 5% to 25% ownership range that Morck, Shleifer and Vishny (1988) suggest with the entrenchment effect.[123] Our finding among Taiwanese firms is not only consistent with Morck, Shleifer and Vishny's (1988) result regarding the entrenchment effects but also supports Villalonga and Amit's (2006) proposition of agency problem (II) between majority and minority shareholders. The result implies that the possibility of expropriation of minority shareholders' interest in Taiwanese firms may be increased when *non-executive* directors have more shareholdings.

---

[121] The mean and median shares owned by CEO are 3.2378% and 1.0409%, respectively. The mean and median shares owned by CEO's family are 1.0238% and 0.0149%, respectively.

[122] Anderson and Reeb (2004) also find that the percentage of affiliated directors on board is negatively related to firm performance in the U.S. family firms.

[123] The mean and median shares owned by (1) non-executive directors are 21.17% and 18.44%, respectively, and by (2) non-executive directors' family are 3.05% and 0.94%, respectively.

Moreover, we find that the percentage of shares owned by *non-executive directors'*

families is positively (0.4310** in Model 2) related to M/B ratio, implying that non-

executive directors may be motivated by their family members to improve firm value.

The results may also imply that having family member ownership can reduce the agency

problem II because the non-executive directors are less likely to expropriate private

benefits at the expense of minority shareholders when director's family benefit is

involved.

As for *independent* directors and their family members, we do not find a significant

relationship between their shareholdings and the M/B ratio. We find (a) negative but not

significant result on independent directors' shareholdings (in both Model 1 and 2,) and (b)

positive but not significant result on independent directors' family's shareholdings

(Model 2). The lack of significant result may be due to the few observations of shares

owned by independent directors and their family members, which account for only an

average of 0.0212% and 0.0029%, respectively, of outstanding shares.

For the second hypothesis, we expect that, due to altruism or monitoring, the impact

of directors' family's shareholding on firm performance is greater than that of directors'

shareholdings. The altruism for family wellbeing, if true, is expected to have the same

influence on firm performance as family's demands for intense monitoring do. This

hypothesis is partly supported with the evidence that *non-executive* directors' *family*

members have a larger (and positive) association with firm performance than *non-

executive* directors do (0.4310** vs. -0.2595*** in Model 2 of Table 21).[124] According to

Becker (1981), the utility from one party's altruistic behavior is interdependent on the

---

[124] We do not find significant result for the association between M/B ratio and firm shares owned
by the family members of (1) *CEO*, (2) *executive* directors or (3) *independent* directors.

other party's happiness. Therefore, non-executive directors' concern for their family welfare is an example of altruism. Since directors' family members do not sit on the board and thus are not in position of direct monitoring, non-executive directors, based on their altruism to maximize family's total welfare, will be motivated to monitor the management to improve firm value.[125] Even when non-executive directors' family members own relatively fewer shares than those non-executive directors do, the expropriation of minority shareholders' interest (such as the agency problem II) would be reduced as long as the family welfare is at stake.[126] The altruistic gain on non-executive directors and their family members can also illustrate Villalonga and Amit's (2006) finding that agency problem II is less severe than agency I.

In Table 22, we further test the first two hypotheses with subset samples split by the median proportion of firm shares owned by non-executive directors' family members. In both subset samples, we find that non-executive directors' shareholding is negatively related to M/B ratio, which is in consistent with our original findings in Table 21. However, the positive association between M/B ratio and non-executive directors' family shareholding is only found significant in the sample of firms with non-executive directors' family shareholdings above or equal to the median (0.4462**) but not in the sample of firms with non-executive directors' family shareholdings below the median. The results imply that when non-executive director's family shareholding is high, those

---

[125] The total welfare of family can include both monetary benefits (e.g. value of firm shares) and non-monetary benefits (e.g. reputation).

[126] The average shares owned by non-executive directors and by non-executive directors' family members are 21.17% and 3.05%, respectively.

family members' demand for monitoring management is also strong since their pecuniary interest is more related to firm performance.

For the third hypothesis, based on agency theory, we expect a positive association between the proportion of *independent* directors on board and firm performance (M/B ratio). Results regarding the possibility of expropriating minority shareholders' interest by non-executive directors (as found in the first hypothesis) seem to support TWSE's regulations to appoint independent directors on the board to improve monitoring. In both Model 1 and Model 2 (Table 21), we find positive but not significant results for the proportion of *independent* directors on board. The result is not significant enough to support this hypothesis. For an additional check, we also examine the proportion of *non-executive (*and *executive)* directors on board and find no significant relationship with firm performance either.[127]

The results also imply that independent directors may perform as well as executive directors in Taiwanese firms. Since the proportions of independent and non-executive directors on the board are both used as independent variable in the model, the impact of executive directors on firm performance is thus left in the intercept. Based on the result that both the proportions of independent and non-executive directors are not significantly related to M/B ratio, the evidence implies that (1) there is no difference in the influence on firm performance by independent or by executive directors and (2) independent directors may perform as well as executive directors. For non-executive directors, however, the result leads to different conclusions. The major difference between independent and non-executive director in Taiwanese firms is the regulatory restriction

---

[127] We do not report the results the proportion of non-executive (and executive) directors on board due to lack of significance. The results can be provided upon request.

on shareholdings. Unlike independent directors, non-executive directors are not restricted with shareholding and own fair amount of firm shares as shown in our sample. Previous results indicate that non-executive directors holding more firm shares exhibit a negative impact on firm performance. In addition, when families of non-executive directors own shares, those family members' shareholding shows positive impact on firm performance and keeps non-executive directors from entrenched.

In Table 23, we further test the third hypothesis with subset samples split by the median proportion of firm shares owned by non-executive directors. We find a positive association between the proportion of independent directors on board (0.2327*) and the M/B ratio in the sample of firms with non-executive directors' shareholdings above or equal to the median. The result indicates that when non-executive directors' shareholding is high, the presence of independent directors on the board is positively related to firm performance, implying a positive effect of monitoring the management. Thus, we test the fourth hypothesis to explore whether the career affiliation of executive officers is related to firm performance.

In the results for the fourth hypothesis, we observe that three out of five independent directors' career affiliations, including the executives, are significantly associated with firm performance. In Model 3 of Table 21, we observe that the career affiliation of *lawyers* and *executives* is positively related to M/B ratio (1.0253** and 0.1636*, respectively), implying that the legal advice or business expertise provided by those independent directors is beneficial to firm performance, based on market investors' perception. We also find that the background of *retired government officer* is negatively related to M/B ratio (-1.8026*), implying this type of independent directors may not have

much business expertise or political connection to offer after retiring from public service. [128] The result is also consistent with skill matching theory, implying that independent directors who are executives are likely to maximize firm's profits over the future, as proxied by M/B ratio.

12.2 Robustness Test

The statistically significant results from Table 21 indicate that firm performance measured by the market-to-book ratio is (1) *positively* related to *CEO's* shareholdings; (2) *negatively* related to *non-executive directors'* shareholdings; (3) *positively* related to *non-executive directors' family members*' shareholdings; and (4) *positively* related to independent director's career affiliation of *executives* (or *lawyers*) and *negatively* related to the career affiliation of *retired government officers*. In this section, we apply (1) various firm performance measures and (2) alternative shareholding measures to test the robustness of these results.

We first apply ROA as an alternative performance measure in the OLS regression model in Table 24.[129] The statistically significant results from models in Table 24 support the association between ROA and (1) *CEO's* shareholdings (0.0792** in Model 1 and 0.0524* in Model 2); (2) *non-executive directors*' shareholdings (-0.0219** in Model 2); and (3) *non-executive directors family members*' shareholdings (0.1115*** in Model 2). However, we do not find significant results to support the previous observations about

---

[128] The result of coefficient estimate can also be possibly impaired by limited observation of independent directors with this career affiliation (only 9 observations in 4 firms).

[129] ROA is also adopted by Yermack (1996), Yeh, Lee and Woidtke (2001), and Yeh and Woidtke (2005) as one of performance measures.

independent director's career affiliations as in Table 21. The finding that independent director's career affiliation is significantly related to M/B ratio but not ROA implies that the observed professional background expected by investors have not reflected on the improvement of firm performance yet. In addition, in Table 25, with the sample consists firms with non-executive directors' family shareholdings above or equal to the median, we find statistically significant results supporting the association between ROA and (1) *non-executive directors*' shareholdings (-0.0413***) and (2) *non-executive directors' family* shareholdings (0.0943***). The results support our suggestion from Table 22 that when non-executive director's family shareholding is high, those family members' demand for monitoring management is also strong since their pecuniary interest is more related to firm performance.

Next, we apply the performance changes as dependent variables in the OLS regressions models for further robustness test.[130] We first use changes in M/B ratio ($MB_t - MB_{t-1}$) for models in Table 26. The results confirm the significance of previous findings on (1) *non-executive directors*' shareholdings (-0.15728** in Model 1 and -0.1669*** in Model 2); (2) *non-executive directors' family* shareholdings (0.3512** in Model 2); and (3) independent director's career affiliations as *lawyers* (1.1712** in Model 3), *executives* (0.1686*), and *retired government officers* (-2.0474**). In Table 27, we further apply the changes in ROA ($ROA_t - ROA_{t-1}$) as dependent variable and find that the results only support the finding on independent director's career affiliation as *retired government officers* (-0.3459*).

---

[130] Huson, Malatesta and Parrino (2004) focus on performance changes rather than on performance measure in general to "isolate a specific corporate event in which internal monitors make a decision that potentially has important implication for the future performance of the firm (p.244)"

In Table 28, we apply alternative shareholding measures for further robustness check. Based on Morck, Shleifer and Vishny's (1988) measure of director shareholdings, we allocate directors' (and their family's) shareholdings in each firm into three categories which denote the ownership is under 5%, between 5% and 25%, or over 25% of firm's outstanding shares. For example, if a CEO owns 7% of firm shares, then the value of *%CEOShare0_5* and *%CEOShare5_25* is 5% and 2%, respectively, in the dataset. Similarly, for a firm with 28% shares owned by non-executive directors, the value of *%NonExecDirShare0_5*, *%NonExecDirShare5_25*, and *%NonExecDirShare25+* is 5%, 20%, and 3%, respectively. Same classification is also applied on the shares owned by directors' family members. Also, in Table 28, we remove variables representing independent directors' (and their family members') shareholdings from the models due to few shares owned in these categories.[131]

Results in Table 28 are consistent with the shareholding ranges that Morck, Shleifer and Vishny's (1988) suggest the incentive and entrenchment effects occur. For example, we find negative association between M/B ratio and the shares owned by both executive directors and non-executive directors when their shareholdings are within the 5% to 25% range, the range that entrenchment effect is expected to occur. We also find a positive association for the over 25% executive director ownership, which is consistent with the suggested incentive effect. For shares owned by directors' family members, consistent with previous results, we find positive associations between M/B ratio and non-executive

---

[131] Independent directors and independent directors' family members own an average of 0.0212% and 0.0029% firm shares in the dataset. We remove those two shareholding variables since the near-zero values may increase the probability of collinearity between intercept and those variables. We also re-run models excluding those two shareholding variables and find results consistent with earlier findings.

directors' family shareholdings when the shares owned are (1) under 5% or (2) over 25%.

The results from Table 28 thus provide further support for the robustness in our previous

findings regarding the incentive and entrenchment effects.[132]

---

[132] In addition, we also run models (1) with lag one period institutional shareholdings to avoid a causality issue between M/B and institutional shareholdings and (2) include lag one period institutional shareholdings and exclude independent director (and family) shareholdings. Results found are also consistent with previous findings.

CHAPTER XIII

CONCLUSION

In this research, we explore the impact of directors' (1) pecuniary interest, (2) non-pecuniary interest and (3) their family's shareholdings on firm performance. We examine associations between firm performance and (1) directors' shareholdings, (2) directors' family shareholdings, and (3) independent directors' career affiliations in Taiwanese publicly listed firms from 2002 to 2006. A hand-collected dataset, including the shareholding data from MOPS website and the firm specific data from TEJ database, allows us to examine our research questions. We apply market-to-book (M/B) ratio as performance measure in an OLS regression model and also address the possible endogeneity (as used by Opler and Titman, 1994 and by Huson, Malatesta and Parrino, 2004) for the robustness of results. To our knowledge, estimation of the impacts of directors' family shareholdings and non-pecuniary interests on firm performance are both unique contributions to the literature.

Based on the results of OLS regression model, first of all, we find a positive association between the *CEO's* shareholding and firm performance. The result, consistent with agency theory and the incentive effect suggested by Morck, Shleifer and Vishny (1988), implies that CEOs control firms' operations and have an incentive to maximize firms' value, in turn, enhancing their pecuniary interest. However, we find a negative

association between firm performance and *non-executive* directors' shareholdings. This result is consistent with the entrenchment effect suggested by Morck, Shleifer and Vishny (1988) and implies that the possibility of expropriating minority shareholders' interest may be increased when non-executive directors have more firm shares on hand.

For shares owned by directors' family members, we find that *non-executive* directors' family shareholding is positively related to firm performance. This result indicates that non-executive directors may behave altruistically or be motivated by family members for monitoring to improve firm value. This may also imply that having family member ownership can reduce the agency problem II, suggested by Villalonga and Amit (2006), because non-executive directors are less likely to expropriate private benefits at the expense of minority shareholders when directors' family welfare is involved.

For independent directors' career affiliations, we observe that the (1) lawyers and executive officers are positively related to firm performance and (2) retired government official is negatively related to firm performance. The result is consistent with skill matching theory and implies that independent directors who are executives are likely to maximize firm's profits over the future, as proxied by M/B ratio.

For robustness tests, we apply (1) ROA and (2) changes in M/B ratio as dependent variables in the OLS regression model. The results support our original findings on relationship between firm performance and (1) CEO's shareholdings, (2) non-executive directors' shareholdings, and (3) non-executive directors' family shareholdings. However, we do not find significant results in the robustness test regarding our finding about independent directors' career affiliations.

Our research hypotheses are partially supported by significant results found with several variables. For the other variables that do not produce significant results (e.g. shares owned by (a) executive and independent directors and by (b) CEO's and executive and independent directors' family members), we can only perform further test when more data is available. The results also suggest several directions for future research. First of all, the opposite effects on firm performance from CEO's shareholding (positive) and non-executive directors' shareholding (negative) warrant further examination on the conflict of interests between different directorial classes. Moreover, we expect to find additional measures of independent directors' reputation, other than career affiliation, for further examination of the impact of non-pecuniary interests on monitoring or firm performance. Last, a cross-industrial research regarding the contribution of directors (or the corporate board) on firm performance can be conducted to explore different features across industries in Taiwan, a country with major developments in technology and capital intensive industry sectors, such as electronics, semiconductors, and marine/aviation transportations.[133]

---

[133] Possible research can also focus various corporate governance mechanisms. For example, Barnhart and Rosenstein (1998) suggest that both internal governance mechanisms (i.e. the board of directors, manager ownership, or executive compensation) and external governance mechanisms (i.e. the market for corporate control, the level of institutional ownership, and the level of debt financing) may affect firm's performance. Earlier discussions of governance mechanisms can be found in Hermalin and Weisbach (1988), Gilson (1991), and Kaplan and Reishus (1990).

CHAPTER XIV

REFERENCES

Akerlof, George A., 1970, The Market For "Lemons": Quality Uncertainty and the Market Mechanism, *Quarterly Journal of Economics* 84, 488-500.

Alchian, Armen A., and Harold Demsetz, 1972, Production , Information Costs, and Economic Organization, *American Economic Review* 62, 777-795.

Anderson, Ronald C., and David M. Reeb, 2003, Founding-Family Ownership and Firm Performance: Evidence from the S&P 500, *Journal of Finance* 58, 1301-1327.

Anderson, Ronald C., and David M. Reeb, 2004, Board Composition: Balancing Family Influence in S&P 500 Firms, *Administrative Science Quarterly* 49, 209-237.

Arrow, Kenneth, 1971, The Theory of Discrimination, (Princeton, Department of Economics - Industrial Relations Sections, Princeton, Department of Economics - Industrial Relations Sections).

Barnhart, Scott W., and Stuart Rosenstein, 1998, Board Composition, Managerial Ownership, and Firm Performance: An Empirical Analysis, *Financial Review* 33, 1.

Becker, Gary S., 1974, A Theory of Social Interactions, *Journal of Political Economy* 82, 1063-1093.

Becker, Gary S., 1981, A Treatise on the Family (Enlarged Edition) (Book), *Journal of Economic Studies* 19, 66.

Bennedsen, Morten, Kasper Meisner Nielsen, Francisco Perez-Gonzalez, and Daniel Wolfenzon, 2007, Inside the Family Firm: The Role of Families in Succession Decisions and Performance, *Quarterly Journal of Economics* 122, 647-691.

Bhagat, Sanjai, and Bernard Black, 1999, The Uncertain Relationship between Board Composition and Firm Performance, *Business Lawyer* 54, 921.

Carney, Michael, 2005, Corporate Governance and Competitive Advantage in Family-Controlled Firms, *Entrepreneurship: Theory & Practice* 29, 249-265.

Chen, Carl R., and Thomas L. Steiner, 1999, Managerial Ownership and Agency Conflicts: A Nonlinear Simultaneous Equation Analysis of Managerial Ownership, Risk Taking, Debt Policy, and Dividend Policy, *Financial Review* 34, 119.

Chen, Ming-Yuan, 2005, Group Affiliation, Identity of Managers, and the Relation between Managerial Ownership and Performance, *International Review of Financial Analysis* 14, 533-558.

Chen, Ming-Yuan, 2006, Managerial Ownership and Firm Performance: An Analysis Using Switching Simultaneous-Equations Models, *Applied Economics* 38, 161-181.

Chiang, Hsiang-tsai, 2005, An Empirical Study of Corporate Governance and Corporate Performance, *Journal of American Academy of Business, Cambridge* 6, 95-101.

Chrisman, James J., Jess H. Chua, and Reginald A. Litz, 2004, Comparing the Agency Costs of Family and Non-Family Firms: Conceptual Issues and Exploratory Evidence, *Entrepreneurship: Theory & Practice* 28, 335-354.

Chrisman, James J., Jess H. Chua, and Pramodita Sharma, 2005, Trends and Directions in the Development of a Strategic Management Theory of the Family Firm, *Entrepreneurship: Theory & Practice* 29, 555-575.

Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan, and Larry H. P. Lang, 2002, Disentangling the Incentive and Entrenchment Effects of Large Shareholdings, *Journal of Finance* 57, 2741-2771.

Claessens, Stijn, Simeon Djankov, and Larry H. P. Lang, 2000, The Separation of Ownership and Control in East Asian Corporations, *Journal of Financial Economics* 58, 81-112.

Coase, R. H. , 1937, The Nature of the Firm, *Economica* 4, 386-405.

Cosh, Andy, Paul M. Guest, and Alan Hughes, 2006, Board Share-Ownership and Takeover Performance, *Journal of Business Finance & Accounting* 33, 459-510.

Coughlan, Anne T., and Ronald M. Schmidt, 1985, Executive Compensation, Management Turnover, and Firm Performance. An Empirical Investigation, *Journal of Accounting & Economics* 7, 43-66.

Demsetz, Harold, 1983, The Structure of Ownership and the Theory of the Firm, *Journal of Law & Economics* 26, 375-390.

Demsetz, Harold, and Belen Villalonga, 2001, Ownership Structure and Corporate Performance, *Journal of Corporate Finance* 7, 209-233.

Eisenhardt, Kathleen M., 1989, Agency Theory: An Assessment and Review, *Academy of Management Review* 14, 57-74.

Faccio, Mara, and Larry H. P. Lang, 2002, The Ultimate Ownership of Western European Corporations, *Journal of Financial Economics* 65, 365-395.

Fairchild, Lisa, and Joanne Li, 2005, Director Quality and Firm Performance, *Financial Review* 40, 257-279.

Fama, Eugene F., 1980, Agency Problems and the Theory of the Firm, *Journal of Political Economy* 88, 288-307.

Fama, Eugene F., and Michael C. Jensen, 1983, Separation of Ownership and Control, *Journal of Law & Economics* 26, 301-326.

Fich, Eliezer M., and Anil Shivdasani, 2006, Are Busy Boards Effective Monitors?, *Journal of Finance* 61, 689-724.

Gilson, Ronald J., 1991, Unlimited Liability and Law Firm Organization: Tax Factors and the Direction of Causation, *Journal of Political Economy* 99, 420.

Gilson, Stuart C., 1990, Bankruptcy, Boards, Banks, and Blockholders: Evidence on Changes in Corporate Ownership and Control When Firms Default, *Journal of Financial Economics* 27, 355-387.

Hart, Oliver, 1995, Corporate Governance: Some Theory and Implications, *Economic Journal* 105, 678-689.

Hart, Oliver D., 1983, The Market Mechanism as an Incentive Scheme, *Bell Journal of Economics* 14, 366-382.

Helland, Eric, and Michael Sykuta, 2005, Who's Monitoring the Monitor? Do Outside Directors Protect Shareholders' Interests?, *Financial Review* 40, 155-172.

Hermalin, Benjamin E., and Michael S. Weisbach, 1988, The Determinants of Board Composition, *RAND Journal of Economics* 19, 589-606.

Howton, Shawn, Shelly Howton, and Gerard Olson, 2001, Board Ownership and Ipo Returns, *Journal of Economics and Finance* 25, 100-114.

Huson, Mark R., Paul H. Malatesta, and Robert Parrino, 2004, Managerial Succession and Firm Performance, *Journal of Financial Economics* 74, 237-275.

Jensen, Michael C., and William H. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3, 305-360.

Jensen, Michael C., and Richard S. Ruback, 1983, The Market for Corporate Control, *Journal of Financial Economics* 11, 5-50.

Jovanovic, Boyan, 1979, Job Matching and the Theory of Turnover, *Journal of Political Economy* 87, 972.

Jovanovic, Boyan, 1984, Matching, Turnover, and Unemployment, *Journal of Political Economy* 92, 108.

Kaplan, Steven N., and David Reishus, 1990, Outside Directorships and Corporate Performance, *Journal of Financial Economics* 27, 389-410.

Keasey, Kevin, Helen Short, and Robert Watson, 1994, Directors' Ownership and the Performance of Small and Medium Sized Firms in the U.K, *Small Business Economics* 6, 225-236.

Kim, Dae Ii, 1998, Reinterpreting Industry Premiums: Match-Specific Productivity, *Journal of Labor Economics* 16, 479.

Kren, Leslie, and Jeffrey L. Kerr, 1997, The Effects of Outside Directors and Board Shareholdings on the Relation between Chief Executive Compensation and Firm Performance, *Accounting & Business Research* 27, 297-309.

La porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert Vishny, 2002, Investor Protection and Corporate Valuation, *Journal of Finance* 57, 1147.

Lee, Chun I., Stuart Rosenstein, Nanda Rangan, and Wallace N. Davidson Iii, 1992, Board Composition and Shareholder Wealth: The Case of Management Buyouts, *FM: The Journal of the Financial Management Association* 21, 58-72.

Lorsch, J. L. , and E. M. MacIver, 1989, Pawns or Potentates? The Reality of America's Corporate Boards., *Harvard Business School Press*.

Macdonald, Glenn M., 1982, Information and Job Choice, *Canadian Journal of Economics* 15, 28.

McConnell, John J., and Henri Servaes, 1990, Additional Evidence on Equity Ownership and Corporate Value, *Journal of Financial Economics* 27, 595-612.

Morck, Randall, Andrei Shleifer, and Robert W. Vishny, 1988, Management Ownership and Market Valuation: An Empirical Analysis, *Journal of Financial Economics* 20, 293-315.

Opler, Tim C., and Sheridan Titman, 1994, Financial Distress and Corporate Performance, *Journal of Finance* 49, 1015-1040.

Pindado, Julio, and Chabela De La Torre, 2004, Why Is Ownership Endogenous?, *Applied Economics Letters* 11, 901-904.

Rosenstein, Stuart, and Jeffrey G. Wyatt, 1990, Outside Directors, Board Independence, and Shareholder Wealth, *Journal of Financial Economics* 26, 175-191.

Schulze, William S., Michael H. Lubatkin, and Richard N. Dino, 2000, Altruism and Agency in Family Firms, *Academy of Management Proceedings* I1-I5.

Schulze, William S., Michael H. Lubatkin, and Richard N. Dino, 2002, Altruism, Agency, and the Competitiveness of Family Firms, *Managerial & Decision Economics* 23, 247-259.

Schulze, William S., Michael H. Lubatkin, and Richard N. Dino, 2003, Exploring the Agency Consequences of Ownership Dispersion among the Directors of Private Family Firms, *Academy of Management Journal* 46, 179-194.

Schulze, William S., Michael H. Lubatkin, and Richard N. Dino, 2003, Toward a Theory of Agency and Altruism in Family Firms, *Journal of Business Venturing* 18, 473.

Shleifer, Andrei, and Robert W. Vishny, 1997, A Survey of Corporate Governance, *Journal of Finance* 52, 737-783.

Srinivasan, Suraj, 2005, Consequences of Financial Reporting Failure for Outside Directors: Evidence from Accounting Restatements and Audit Committee Members, *Journal of Accounting Research* 43, 291-334.

Stiglitz, Joseph E., 2002, Information and the Change in the Paradigm in Economics, *American Economic Review* 92, 460-501.

Stulz, Rene, 1988, Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control, *Journal of Financial Economics* 20, 25-54.

Villalonga, Belen, and Raphael Amit, 2006, How Do Family Ownership, Control and Management Affect Firm Value?, *Journal of Financial Economics* 80, 385-417.

Wilson, Robert, 1968, The Theory of Syndicates, *Econometrica* 36, 119.

Yeh, Yin-Hua, 2003, Corporate Ownership and Control: New Evidence from Taiwan, *Corporate Ownership & Control* 1, 87-101.

Yeh, Yin-Hua, 2005, Do Controlling Shareholders Enhance Corporate Value?, *Corporate Governance* 13, 313-325.

Yeh, Yin-hua, Tsun-siou Lee, and Tracie Woidtke, 2001, Family Control and Corporate Governance: Evidence from Taiwan, *International Review of Finance* 2, 21.

Yeh, Yin-Hua, and Tracie Woidtke, 2005, Commitment or Entrenchment?: Controlling Shareholders and Board Composition, *Journal of Banking and Finance* 29, 1857-1885.

Yermack, David, 1996, Higher Market Valuation of Companies with a Small Board of Directors, *Journal of Financial Economics* 40, 185-211.

Table 19

The Number and Proportion of Executive, Non-Executive and Independent Directors

	2002	2003	2004	2005	2006	Total
All Publicly Listed Firms	607	620	628	632	637	3,124
Firms with Independent Directors	152	203	263	282	284	1,184
Number of Directors						
Executive Directors	636	1,079	1,104	1,095	1,132	5,046
Non-Executive Directors	4,612	4,122	4,054	4,013	4,047	20,848
Total Non-Independent Directors	5,248	5,201	5,158	5,108	5,179	25,894
Independent Directors (ID)	211	325	411	443	452	1,842
Proportion of Directors (per firm)						
Executive Directors per Firm	1.05	1.74	1.76	1.73	1.78	1.62
Non-Executive Directors per Firm	7.60	6.65	6.46	6.35	6.35	6.67
Total Non-Independent Directors per Firm	8.65	8.39	8.21	8.08	8.13	8.29
Independent Directors per Firm	0.35	0.52	0.65	0.70	0.71	0.59
Independent Directors per Firm with ID	1.39	1.60	1.56	1.57	1.59	1.56

This table presents the number and proportion of each director class in Taiwanese publicly listed firms from 2002 to 2006. The data is collect from the MOPS website provided by TWSE *All Publicly Listed Firms* represent the number of publicly listed forms in each year. *Firms with Independent Directors* represents the number of firms with ID listed on the MOPS website in each year. For the number of directors, *Executive Directors* represent the number of (non-independent) directors who also hold positions such as chairman of the board, CEO, or executives in the firm. *Non-Executive Directors* represent the number of (non-independent) directors who hold the directorship but are neither executive directors nor independent directors. *Total Non-Independent Directors* is the combined number of Executive Directors and Non-Executive Directors. *Independent Directors* (ID) represents the number of independent directors listed on the MOPS website. For the percentage of directors, *Executive Directors per Firm* is the ratio of Executive Directors to All Publicly Listed Firms. *Non-Executive Directors per Firm* is the ratio of Non-Executive Directors to All Publicly Listed Firms. *Total Non-Independent Directors per Firm* is the ratio of Total Non-Independent Directors to All Publicly Listed Firms. *Total Non-Independent Directors per Firm* is the ratio of Non-Independent Directors to All Publicly Listed Firms. *Independent Directors per Firm with ID* is the ratio of Independent Directors to Firms with Independent Directors on the board.

Table 20

Summary Statistics

	N	Mean	t-value	25th Percentile	Median	75th Percentile
Market-to-Book Ratio (M/B)	2,164	1.1565***	104.73	0.8749	1.0210	1.2658
Return on Assets (ROA)	2,161	5.5067%***	31.39	1.790%	5.220%	9.470%
Change in M/B	2,164	0.0599***	8.61	-0.0665	0.0512	0.1722
Change in ROA	2,161	0.1100%	0.84	-2.230%	0.170%	2.640%
%Share by CEO	2,164	3.2378%***	29.99	0.0694%	1.0409%	4.6071%
%Share by CEO's Family	2,164	1.0238%***	19.38	0.0000%	0.0149%	0.6794%
%Share by Executive Dir.	2,164	0.9660%***	17.41	0.0000%	0.0000%***	0.3605%
%Share by Executive Dir.'s Family	2,164	0.3306%***	9.80	0.0000%	0.0000%***	0.0038%
%Share by Non-Executive Dir.	2,164	21.1694%***	75.07	11.3163%	18.4410%	27.3474%
%Share by Non-Executive Dir.'s Family	2,164	3.0464%***	26.99	0.0688%	0.9438%	3.6694%
%Share by Independent Dir.	2,164	0.0212%***	10.48	0.0000%	0.0000%***	0.0000%
%Share by Independent Dir.'s Family	2,164	0.0029%***	5.03	0.0000%	0.0000%***	0.0000%
% Seat by Independent Dir.	2,164	6.0388%***	29.41	0.0000%	0.0000%***	12.5000%

The sample consists of 2,164 publicly listed firms between 2002 and 2006 in Taiwan. Two dependent variables are applied as performance measures in the model: (1) *Market-to-book* represents the market-to-book ratio; (2) *ROA* represents the Return on assets in each firm. Change in M/B and change in ROA represent the change of market-to-book ratio ($MB_t - MB_{t-1}$) and the change of ROA ($ROA_t - ROA_{t-1}$), respectively, from the previous period. Fourteen independent variables are applied to examine our hypotheses: *%Share by CEO, %Share by Executive Dir., %Share by Non-Executive Dir.,* and *%Share by Independent Dir.* represents the proportion of shares owned by CEO, executive directors, non-executive directors, and independent directors, respectively. *%Share by CEO's Family, %Share by Executive Dir.'s Family, %Share by Non-Executive Dir.'s Family,* and *%Share by Independent Dir.'s Family*, represents the proportion of shares owned by each director's family members. *% Seat by Independent Dir.* represents the proportion of independent directors on the board. Five independent variables regarding independent directors' professional background are calculated by dividing the number of independent directors' career affiliations by the number of board seats in the firm on the MOPS website. *%Title of Indep. Dir. as Professor, %Title of Indep. Dir. as Accountant, %Title of Indep. Dir. as Lawyer, %Title of Indep. Dir. as Executive, and %Title of Indep. Dir. as Gov. Officer* represents the proportion of career affiliations held by independent directors as professors, accountants, lawyers, executives, and retired government officer, respectively. For control variables, we apply *% Seat by Non-Exec. Dir.* and *%Share by Institutional Investors* to control for proportion of non-executive directors seats and institutional investor shareholdings, respectively. ROA_{t-1} and MB_{t-1} are used to control for past performance. *Ln (Total Assets), Debt / Assets,* and *Director Seats* are used to control for firm size, capital structure, and board size, respectively. Mean and median significance levels are obtained from T test and Univeariate test, respectively. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 20 (Continued)

	N	Mean	t-value	25th Percentile	Median	75th Percentile
%Title of Indep. Dir. as Professor	2,164	1.2123%***	13.95	0.0000%	0.0000%***	0.0000%
%Title of Indep. Dir. as Accountant	2,164	0.3884%***	8.28	0.0000%	0.0000%***	0.0000%
%Title of Indep. Dir. as Lawyer	2,164	0.1992%***	6.27	0.0000%	0.0000%***	0.0000%
%Title of Indep. Dir. as Executive	2,164	3.3076%***	19.81	0.0000%	0.0000%***	0.0000%
%Title of Indep. Dir. as Gov. Officer	2,164	0.0433%***	2.96	0.0000%	0.0000%***	0.0000%
% Seat by Non-Exec. Dir.	2,164	57.7297%***	164.13	45.4546%	60.0000%	71.4286%
%Share by Institutional Investors	2,164	37.8559%***	80.88	20.0000%	35.6450%	53.5600%
ROA_{t-1}	2,164	5.3880%***	30.51	1.6100%	5.0800%	9.5350%
Total Assets (000,000's)	2,164	24,714.24***	19.75	3,440.94	7,082.09	17,269.48
Debt / Assets	2,164	45.7639%***	131.72	34.2153%	46.8595%	56.5993%
MB_{t-1}	2,164	1.0966***	106.68	0.8314	0.9763	1.2135
Director Seats	2,164	7.0513***	120.35	5.0000	7.0000***	8.0000

Table 21

Regression Models of Directors' Shares and Career Affiliations

Dependent Variable Market-to-Book (M/B) Ratio	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
Intercept	0.4693***	0.4565***	0.4586***
	(2.98)	(2.90)	(3.02)
%Share by CEO	0.3564**	0.3056*	0.3290*
	(2.40)	(1.79)	(1.93)
%Share by CEO's Family		-0.4484	-0.4465
		(-1.11)	(-1.11)
%Share by Executive Dir.	-0.0662	-0.0188	-0.0394
	(-0.22)	(-0.06)	(-0.12)
%Share by Executive Dir.'s Family		0.1514	0.2053
		(0.30)	(0.40)
%Share by Non-Executive Dir.	-0.2442**	-0.2595***	-0.2654***
	(-4.16)	(-4.38)	(-4.52)
%Share by Non-Executive Dir.'s Family		0.4310**	0.4397***
		(2.55)	(2.60)
%Share by Independent Dir.	-4.0037	-5.6371	
	(-0.55)	(-0.75)	
%Share by Independent Dir.'s Family		21.0395	
		(0.87)	
% Seat by Independent Dir.	0.1595	0.1491	
	(1.57)	(1.47)	

The OLS regression model is applied with a sample consists of 2,164 publicly listed firms between 2002 and 2006 in Taiwan. The dependent variable used in this model is the market-to-book ratio in each firm. Fourteen independent variables are applied to examine our hypotheses: *%Share by CEO, %Share by Executive Dir., %Share by Non-Executive Dir.,* and *%Share by Independent Dir.* represents the proportion of shares owned by CEO, executive directors, non-executive directors, and independent directors, respectively. *%Share by CEO's* Family*, %Share by Executive Dir.'s Family, %Share by Non-Executive Dir.'s Family,* and *%Share by Independent Dir.'s Family*, represents the proportion of shares owned by each director's family members. *% Seat by Independent Dir.* represents the proportion of independent directors on the board. Five independent variables regarding independent directors' professional background are calculated by dividing the number of independent directors' career affiliations by the number of board seats in the firm on the MOPS website. *%Title of Indep. Dir. as Professor, %Title of Indep. Dir. as Accountant, %Title of Indep. Dir. as Lawyer, %Title of Indep. Dir. as Executive, and %Title of Indep. Dir. as Gov. Officer* represents the proportion of career affiliations held by independent directors as professors, accountants, lawyers, executives, and retired government officer, respectively. For control variables, we apply *% Seat by Non-Exec. Dir.* and *%Share by Institutional Investors* to control for proportion of non-executive directors seats and institutional investor shareholdings, respectively. ROA_{t-1} and MB_{t-1} are used to control for past performance. *Ln (Total Assets), Debt / Assets,* and *Director Seats* are used to control for firm size, capital structure, and board size, respectively. In Model 1, we examine the directors' shares only. In Model 2, we examine both directors' and their family's shareholdings. Independent directors' career affiliations are examined in Model 3. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 21 (Continued)

Dependent Variable Market-to-Book (M/B) Ratio	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
%Title of Indep. Dir. as Professor			0.2030
			(1.19)
%Title of Indep. Dir. as Accountant			0.4761
			(1.61)
%Title of Indep. Dir. as Lawyer			1.0253**
			(2.32)
%Title of Indep. Dir. as Executive			0.1636*
			(1.76)
%Title of Indep. Dir. as Gov. Officer			-1.8026*
			(-1.94)
% Seat by Non-Exec. Dir.	0.0547	0.0581	0.0703
	(0.79)	(0.84)	(1.22)
%Share by Institutional Investors	0.2355***	0.2598***	0.2608***
	(5.75)	(6.13)	(6.18)
ROA_{t-1}	0.6692***	0.6418***	0.6309***
	(6.98)	(6.66)	(6.56)
Ln (Total Assets)	-0.0134**	-0.0134**	-0.0136**
	(-2.09)	(-2.08)	(-2.13)
Debt / Assets	-0.1528***	-0.1484***	-0.1547***
	(-3.25)	(-3.16)	(-3.30)
MB_{t-1}	0.7350***	0.7334***	0.7328***
	(46.60)	(46.39)	(46.43)
Director Seats	-0.0015	-0.0015	-0.0015
	(-0.52)	(-0.52)	(-0.53)
Adjusted R-sqr	0.6861***	0.6866***	0.6885***
Sample size	2,164	2,164	2,164

125

Table 22

Regression Models of Directors' Shares - Samples Split by
Non-Executive Directors' Family Shareholdings

Dependent Variable	Non-Executive Directors' Family Shares ≥ Median		Non-Executive Directors' Family Shares < Median	
Market-to-Book (M/B) Ratio	Director's Shares	Director and Family's Shares	Director's Shares	Director and Family's Shares
Intercept	0.1848***	0.2123	0.9198***	0.8631***
	(0.83)	(0.95)	(3.64)	(3.4)
%Share by CEO	0.4739	0.4788**	-0.1495	-0.2531
	(2.69)	(2.33)	(-0.45)	(-0.75)
%Share by CEO's Family		-0.5915		26.1786**
		(-1.39)		(2.57)
%Share by Executive Dir.	-0.0934	-0.0751	0.4136	0.1148
	(-0.25)	(-0.18)	(0.7)	(0.09)
%Share by Executive Dir.'s Family		0.3083		-6.3073
		(0.60)		(-1.07)
%Share by Non-Executive Dir.	-0.2380**	-0.2799***	-0.2300***	-0.1919**
	(-2.57)	(-2.95)	(-2.74)	(-2.24)
%Share by Non-Executive Dir.'s Family		0.4462**		2.6900
		(2.45)		(0.26)
%Share by Independent Dir.	-1.5259	-1.9787	-11.5928	-9.7675
	(-0.19)	(-0.24)	(-0.56)	(-0.47)
%Share by Independent Dir.'s Family		11.0383		76.1746
		(0.44)		(0.68)
% Seat by Independent Dir.	0.2098	0.1944	0.1754	0.0722
	(1.56)	(1.44)	(1.04)	(0.41)

The OLS regression model is applied with subset samples split by non-executive directors' family shareholdings based on Taiwanese publicly listed firms between 2002 and 2006 in Table 18. The first sample consists of 1,355 firms with the proportion of non-executive directors' family shareholdings above or equal to the median. The second sample consists of 809 firms with the proportion of non-executive directors' family shareholdings below the median. The dependent variable used in OLS regression models is the market-to-book (M/B) ratio in each firm. The definitions of independent variables, including the control variables, are same as those in Table 21. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 22 (Continued)

Dependent Variable Market-to-Book (M/B) Ratio	Non-Executive Directors' Family Shares ≥ Median		Non-Executive Directors' Family Shares < Median	
	Director's Shares	Director and Family's Shares	Director's Shares	Director and Family's Shares
% Seat by Non-Exec. Dir.	0.0931	0.1016	-0.0057	-0.0254
	(0.99)	(1.07)	(-0.05)	(-0.24)
%Share by Institutional Investors	0.2185***	0.2521***	0.2867***	0.2668***
	(4.09)	(4.54)	(4.02)	(3.67)
ROA $_{t-1}$	0.8916***	0.8752***	0.3239**	0.2963**
	(6.85)	(6.72)	(2.1)	(1.89)
Ln (Total Assets)	-0.0047	-0.0066	-0.0249***	-0.0215**
	(-0.50)	(-0.70)	(-2.49)	(-2.14)
Debt / Assets	-0.1490**	-0.1417**	-0.2030***	-0.2268***
	(-2.4)	(-2.27)	(-2.64)	(-2.93)
MB $_{t-1}$	0.7642***	0.7616***	0.6150***	0.6162***
	(39.52)	(39.21)	(20.55)	(20.61)
Director Seats	-0.0030	-0.0026	0.0020	0.0026
	(-0.76)	(-0.66)	(0.42)	(0.56)
Adjusted R-sqr	0.7337***	0.7343***	0.5795***	0.5815***
Sample size	1,355	1,355	809	809

Table 23

Regression Models of Directors' Shares - Samples Split by
Non-Executive Directors' Shareholdings

Dependent Variable Market-to-Book (M/B) Ratio	Sample 1 Non-Executive Directors' Shares ≥ Median	Sample 2 Non-Executive Directors' Shares < Median
Intercept	0.2434	0.9992***
	(1.28)	(3.39)
%Share by CEO	0.3781**	0.0312
	(2.39)	(0.06)
%Share by CEO's Family		
%Share by Executive Dir.	0.0850**	-0.2288
	(0.20)	(-0.47)
%Share by Executive Dir.'s Family		
%Share by Non-Executive Dir.	-0.1574	-0.3427
	(-2.02)	(-0.91)
%Share by Non-Executive Dir.'s Family		
%Share by Independent Dir.	-4.3927	6.1655
	(-0.53)	(0.41)
%Share by Independent Dir.'s Family		
% Seat by Independent Dir.	0.2327*	-0.0355
	(1.82)	(-0.20)

The OLS regression model is applied with subset samples split by non-executive directors' shareholdings based on Taiwanese publicly listed firms between 2002 and 2006 in Table 18. The first sample consists of 1,331 firms with the proportion of non-executive directors' shareholdings above or equal to the median. The second sample consists of 833 firms with the proportion of non-executive directors' shareholdings below the median. The dependent variable used in OLS regression models is the market-to-book (M/B) ratio in each firm. The definitions of independent variables, including the control variables, are same as those in Table 21 T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 23 (Continued)

Dependent Variable Market-to-Book (M/B) Ratio	Sample 1 Non-Executive Directors' Shares ≥ Median	Sample 2 Non-Executive Directors' Shares < Median
% Seat by Non-Exec. Dir.	0.1241	-0.0577
	(1.38)	(-0.51)
%Share by Institutional Investors	0.1852***	0.3588***
	(3.72)	(4.77)
ROA_{t-1}	0.8077***	0.4792***
	(6.31)	(3.18)
Ln (Total Assets)	-0.0057	-0.0321***
	(-0.74)	(-2.68)
Debt / Assets	-0.1370**	-0.1862**
	(-2.41)	(-2.14)
MB_{t-1}	0.7069***	0.7842***
	(38.55)	(25.60)
Director Seats	-0.0009	-0.0026
	(-0.25)	(-0.47)
Adjusted R-sqr	0.7049***	0.6676***
Sample size	1,331	833

Table 24

Regression Models of Directors' Shares and Career Affiliations
(Dependent Variable: ROA)

Dependent Variable Return on Assets (ROA)	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
Intercept	-0.0391	-0.0422	-0.0452
	(-1.35)	(-1.46)	(-1.62)
%Share by CEO	0.0792***	0.0524*	0.0501
	(2.86)	(1.65)	(1.57)
%Share by CEO's Family		-0.0531	-0.0560
		(-0.71)	(-0.75)
%Share by Executive Dir.	0.0204	0.0648	0.0586
	(0.36)	(1.02)	(0.95)
%Share by Executive Dir.'s Family		-0.0885	-0.0773
		(-0.94)	(-0.82)
%Share by Non-Executive Dir.	-0.0170	-0.0219**	-0.0222**
	(-1.56)	(-1.99)	(-2.04)
%Share by Non-Executive Dir.'s Family		0.1115***	0.1163***
		(3.55)	(3.69)
%Share by Independent Dir.	-0.5837	-0.6828	
	(-0.43)	(-0.49)	
%Share by Independent Dir.'s Family		0.2312	
		(0.05)	
% Seat by Independent Dir.	0.0117	0.0085	
	(0.62)	(0.45)	

The OLS regression model is applied with a sample consists of 2,162 publicly listed firms between 2002 and 2006 in Taiwan. The dependent variable in this model is the return on assets (ROA) in each firm. Fourteen independent variables are applied to examine our hypotheses: *%Share by CEO, %Share by Executive Dir., %Share by Non-Executive Dir.,* and *%Share by Independent Dir.* represents the proportion of shares owned by CEO, executive directors, non-executive directors, and independent directors, respectively. *%Share by CEO's Family, %Share by Executive Dir.'s Family, %Share by Non-Executive Dir.'s Family,* and *%Share by Independent Dir.'s Family*, represents the proportion of shares owned by each director's family members. *% Seat by Independent Dir.* represents the proportion of independent directors on the board. Five independent variables regarding independent directors' professional background are calculated by dividing the number of independent directors' career affiliations by the number of board seats in the firm on the MOPS website. *%Title of Indep. Dir. as Professor, %Title of Indep. Dir. as Accountant, %Title of Indep. Dir. as Lawyer, %Title of Indep. Dir. as Executive, and %Title of Indep. Dir. as Gov. Officer* represents the proportion of career affiliations held by independent directors as professors, accountants, lawyers, executives, and retired government officer, respectively. For control variables, we apply *% Seat by Non-Exec. Dir.* and *%Share by Institutional Investors* to control for proportion of non-executive directors seats and institutional investor shareholdings, respectively. ROA_{t-1} and MB_{t-1} are used to control for past performance. *Ln (Total Assets), Debt / Assets,* and *Director Seats* are used to control for firm size, capital structure, and board size, respectively. In Model 1, we examine the directors' shares only. In Model 2, we examine both directors' and their family's shareholdings. Independent directors' career affiliations are examined in Model 3. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 24 (Continued)

Dependent Variable Return on Assets (ROA)	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
%Title of Indep. Dir. as Professor			0.0406
			(1.28)
%Title of Indep. Dir. as Accountant			0.0743
			(1.35)
%Title of Indep. Dir. as Lawyer			0.0391
			(0.47)
%Title of Indep. Dir. as Executive			-0.0041
			(-0.24)
%Title of Indep. Dir. as Gov. Officer			-0.2288
			(-1.32)
% Seat by Non-Exec. Dir.	-0.0281**	-0.0284**	-0.0270**
	(-2.19)	(-2.21)	(-2.53)
%Share by Institutional Investors	0.0384***	0.0449***	0.0452***
	(5.13)	(5.81)	(5.86)
ROA_{t-1}	0.5979***	0.5899***	0.5874***
	(34.81)	(34.16)	(33.94)
Ln (Total Assets)	0.0036***	0.0036***	0.0037***
	(3.03)	(3.03)	(3.15)
Debt / Assets	-0.0945***	-0.0941***	-0.0941***
	(-10.82)	(-10.79)	(-10.78)
MB_{t-1}			
Director Seats	-0.0003	-0.0002	-0.0003
	(-0.50)	(-0.45)	(-0.55)
Adjusted R-sqr	0.5676***	0.5698***	0.5705***
Sample size	2,162	2,162	2,162

Table 25

Regression Models of Directors' Shares - Samples Split by
Non-Executive Directors' Family Shareholdings

Dependent Variable Return on Assets (ROA)	Non-Executive Directors' Family Shares ≥ Median		Non-Executive Directors' Family Shares < Median	
	Director's Shares	Director and Family's Shares	Director's Shares	Director and Family's Shares
Intercept	0.0502	0.0540	-0.1788***	-0.1912***
	(1.37)	(1.47)	(-3.38)	(-3.6)
%Share by CEO	0.0649**	0.0482	0.0878	0.0814
	(2.23)	(1.42)	(1.21)	(1.12)
%Share by CEO's Family		-0.0543		1.9478
		(-0.78)		(0.89)
%Share by Executive Dir.	-0.0785	-0.0295	0.3220**	0.2922
	(-1.27)	(-0.44)	(2.52)	(1.12)
%Share by Executive Dir.'s Family		-0.0989		-0.2857
		(-1.16)		(-0.22)
%Share by Non-Executive Dir.	-0.0312**	-0.0413***	-0.0077	-0.0013
	(-2.05)	(-2.65)	(-0.42)	(-0.07)
%Share by Non-Executive Dir.'s Family		0.0943***		5.2513**
		(3.14)		(2.31)
%Share by Independent Dir.	-0.1984	-0.0843	-0.0326	0.8753
	(-0.15)	(-0.06)	(-0.01)	(0.20)
%Share by Independent Dir.'s Family		-1.4267		5.6667
		(-0.35)		(0.24)
% Seat by Independent Dir.	-0.0132	-0.0182	0.0456	0.0332
	(-0.59)	(-0.82)	(1.25)	(0.88)

The OLS regression model is applied with subset samples split by non-executive directors' family shareholdings based on Taiwanese publicly listed firms between 2002 and 2006 in Table 18. The first sample consists of 1,354 firms with the proportion of non-executive directors' family shareholdings above or equal to the median. The second sample consists of 808 firms with the proportion of non-executive directors' family shareholdings below the median. The dependent variable used in OLS regression models is the return on assets (ROA) in each firm. The definitions of independent variables, including the control variables, are same as those in Table 21. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 25 (Continued)

Dependent Variable Return on Assets (ROA)	Non-Executive Directors' Family Shares ≥ Median		Non-Executive Directors' Family Shares < Median	
	Director's Shares	Director and Family's Shares	Director's Shares	Director and Family's Shares
% Seat by Non-Exec. Dir.	-0.0337**	-0.0343**	-0.0161	-0.0194
	(-2.16)	(-2.20)	(-0.71)	(-0.84)
%Share by Institutional Investors	0.0417***	0.0485***	0.0566***	0.0562***
	(4.79)	(5.36)	(3.78)	(3.69)
ROA $_{t-1}$	0.6559***	0.6511***	0.4610***	0.4458***
	(32.64)	(32.4)	(13.94)	(13.27)
Ln (Total Assets)	0.0009	0.0006	0.0079***	0.0085***
	(0.59)	(0.38)	(3.72)	(3.97)
Debt / Assets	-0.0753***	-0.0750***	-0.1095***	-0.1135***
	(-7.33)	(-7.29)	(-6.61)	(-6.80)
MB $_{t-1}$				
Director Seats	-0.0007	-0.0005	-0.0002	-0.0003
	(-1.08)	(-0.82)	(-0.19)	(-0.28)
Adjusted R-sqr	0.6322***	0.6344***	0.4933***	0.4956***
Sample size	1,354	1,354	808	808

133

Table 26

Regression Models of Directors' Shares and Career Affiliations
(Dependent Variable: Changes in M/B Ratio)

Dependent Variable Changes in Market-to-Book Ratio	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
Intercept	0.0522	0.0412	0.0541
	(0.32)	(0.25)	(0.34)
%Share by CEO	0.2141	0.2237	0.2577
	(1.36)	(1.23)	(1.42)
%Share by CEO's Family		-0.6177	-0.6050
		(-1.44)	(-1.41)
%Share by Executive Dir.	-0.1693	-0.2439	-0.2646
	(-0.52)	(-0.67)	(-0.75)
%Share by Executive Dir.'s Family		0.5624	0.5694
		(1.04)	(1.05)
%Share by Non-Executive Dir.	-0.1572**	-0.1669***	-0.1726***
	(-2.53)	(-2.66)	(-2.77)
%Share by Non-Executive Dir.'s Family		0.3512**	0.3447*
		(1.96)	(1.93)
%Share by Independent Dir.	0.2226	-1.3970	
	(0.03)	(-0.17)	
%Share by Independent Dir.'s Family		26.3438	
		(1.02)	
% Seat by Independent Dir.	0.1396	0.1287	
	(1.30)	(1.20)	

The OLS regression model is applied with a sample consists of 2,164 publicly listed firms between 2002 and 2006 in Taiwan. The dependent variable in this model is the changes in market-to-book (M/B) ratio in each firm. Fourteen independent variables are applied to examine our hypotheses: *%Share by CEO, %Share by Executive Dir., %Share by Non-Executive Dir.,* and *%Share by Independent Dir.* represents the proportion of shares owned by CEO, executive directors, non-executive directors, and independent directors, respectively. *%Share by CEO's Family, %Share by Executive Dir.'s Family, %Share by Non-Executive Dir.'s Family,* and *%Share by Independent Dir.'s Family*, represents the proportion of shares owned by each director's family members. *% Seat by Independent Dir.* represents the proportion of independent directors on the board. Five independent variables regarding independent directors' professional background are calculated by dividing the number of independent directors' career affiliations by the number of board seats in the firm on the MOPS website. *%Title of Indep. Dir. as Professor, %Title of Indep. Dir. as Accountant, %Title of Indep. Dir. as Lawyer, %Title of Indep. Dir. as Executive,* and *%Title of Indep. Dir. as Gov. Officer* represents the proportion of career affiliations held by independent directors as professors, accountants, lawyers, executives, and retired government officer, respectively. For control variables, we apply *% Seat by Non-Exec. Dir.* and *%Share by Institutional Investors* to control for proportion of non-executive directors seats and institutional investor shareholdings, respectively. ROA_{t-1} and MB_{t-1} are used to control for past performance. *Ln (Total Assets), Debt / Assets,* and *Director Seats* are used to control for firm size, capital structure, and board size, respectively. In Model 1, we examine the directors' shares only. In Model 2, we examine both directors' and their family's shareholdings. Independent directors' career affiliations are examined in Model 3. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 26 (Continued)

Dependent Variable Changes in Market-to-Book Ratio	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
%Title of Indep. Dir. as Professor			0.0572
			(0.32)
%Title of Indep. Dir. as Accountant			0.3782
			(1.20)
%Title of Indep. Dir. as Lawyer			1.1713**
			(2.49)
%Title of Indep. Dir. as Executive			0.1686*
			(1.70)
%Title of Indep. Dir. as Gov. Officer			-2.0474**
			(-2.07)
% Seat by Non-Exec. Dir.	-0.0145	-0.0081	-0.0096
	(-0.20)	(-0.11)	(-0.16)
%Share by Institutional Investors	0.1206***	0.1370***	0.1364***
	(2.89)	(3.18)	(3.18)
ROA_{t-1}			
Ln (Total Assets)	0.0009	0.0008	0.0003
	(0.13)	(0.11)	(0.05)
Debt / Assets	-0.2520***	-0.2429***	-0.2485***
	(-5.45)	(-5.23)	(-5.37)
MB_{t-1}			
Director Seats	-0.0016	-0.0017	-0.0014
	(-0.53)	(-0.56)	(-0.47)
Adjusted R-sqr	0.1030***	0.1038***	0.1084***
Sample size	2,164	2,164	2,164

Table 27

Regression Models of Directors' Shares and Career Affiliations
(Dependent Variable: Changes in ROA)

Dependent Variable Changes in ROA	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
Intercept	-0.0341	-0.0334	-0.0485
	(-1.05)	(-1.03)	(-1.54)
%Share by CEO	0.0213	0.0189	0.0208
	(0.69)	(0.53)	(0.58)
%Share by CEO's Family		-0.0252	-0.0197
		(-0.30)	(-0.23)
%Share by Executive Dir.	-0.0558	-0.0217	-0.0002
	(-0.88)	(-0.31)	(0.00)
%Share by Executive Dir.'s Family		-0.0948	-0.0962
		(-0.89)	(-0.90)
%Share by Non-Executive Dir.	-0.0110	-0.0127	-0.0134
	(-0.90)	(-1.03)	(-1.09)
%Share by Non-Executive Dir.'s Family		0.0280	0.0231
		(0.80)	(0.66)
%Share by Independent Dir.	0.2615	0.3802	-0.0485
	(0.17)	(0.24)	(-1.54)
%Share by Independent Dir.'s Family		-1.7948	
		(-0.36)	
% Seat by Independent Dir.	-0.0347*	-0.0365*	
	(-1.65)	(-1.73)	

The OLS regression model is applied with a sample consists of 2,162 publicly listed firms between 2002 and 2006 in Taiwan. The dependent variable in this model is the changes in Return on assets in each firm. Fourteen independent variables are applied to examine our hypotheses: *%Share by CEO, %Share by Executive Dir., %Share by Non-Executive Dir.,* and *%Share by Independent Dir.* represents the proportion of shares owned by CEO, executive directors, non-executive directors, and independent directors, respectively. *%Share by CEO's Family, %Share by Executive Dir.'s Family, %Share by Non-Executive Dir.'s Family,* and *%Share by Independent Dir.'s Family*, represents the proportion of shares owned by each director's family members. *% Seat by Independent Dir.* represents the proportion of independent directors on the board. Five independent variables regarding independent directors' professional background are calculated by dividing the number of independent directors' career affiliations by the number of board seats in the firm on the MOPS website. *%Title of Indep. Dir. as Professor, %Title of Indep. Dir. as Accountant, %Title of Indep. Dir. as Lawyer, %Title of Indep. Dir. as Executive, and %Title of Indep. Dir. as Gov. Officer* represents the proportion of career affiliations held by independent directors as professors, accountants, lawyers, executives, and retired government officer, respectively. For control variables, we apply *% Seat by Non-Exec. Dir.* and *%Share by Institutional Investors* to control for proportion of non-executive directors seats and institutional investor shareholdings, respectively. ROA_{t-1} and MB_{t-1} are used to control for past performance. *Ln (Total Assets), Debt / Assets,* and *Director Seats* are used to control for firm size, capital structure, and board size, respectively. In Model 1, we examine the directors' shares only. In Model 2, we examine both directors' and their family's shareholdings. Independent directors' career affiliations are examined in Model 3. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 27 (Continued)

Dependent Variable Changes in ROA	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Titles
%Title of Indep. Dir. as Professor			-0.0173
			(-0.48)
%Title of Indep. Dir. as Accountant			-0.0417
			(-0.67)
%Title of Indep. Dir. as Lawyer			0.0367
			(0.40)
%Title of Indep. Dir. as Executive			-0.0143
			(-0.73)
%Title of Indep. Dir. as Gov. Officer			-0.3459*
			(-1.78)
% Seat by Non-Exec. Dir.	-0.0043	-0.0049	0.0046
	(-0.30)	(-0.34)	(0.39)
%Share by Institutional Investors	0.0006	0.0025	0.0022
	(0.07)	(0.30)	(0.26)
ROA_{t-1}			
Ln (Total Assets)	0.0010	0.0010	0.0014
	(0.78)	(0.72)	(1.05)
Debt / Assets	-0.0173*	-0.0174*	-0.0166*
	(-1.91)	(-1.91)	(-1.82)
MB_{t-1}			
Director Seats	0.0000	0.0001	-0.0001
	(0.06)	(0.10)	(-0.23)
Adjusted R-sqr	0.0178***	0.0167***	0.0164***
Sample size	2,162	2,162	2,162

Table 28

Regression Models of Directors' Shares and Career Affiliations
(With Shareholding Range Variables)

Dependent Variable Market-to-Book (M/B) Ratio	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Affiliations
Intercept	0.4927**	0.4854**	0.4554**
	(2.39)	(2.35)	(2.23)
% CEO Share 0_5	0.3690	0.3829	0.4805
	(0.88)	(0.83)	(1.04)
% CEO Share 5_25	0.3299	0.2415	0.2344
	(1.34)	(0.89)	(0.86)
% CEO Share 25+	0.8280	0.9398	0.9165
	(0.84)	(0.93)	(0.91)
% CEO's Family Share 0_5		-0.7926	-0.6816
		(-1.06)	(-0.91)
% CEO's Family Share 5_25		-0.2226	-0.2926
		(-0.31)	(-0.41)
% CEO's Family Share 25+		-2.0883	-1.9594
		(-0.26)	(-0.25)
% ExecDir Share 0_5	0.9198	0.8968	1.0122
	(1.45)	(1.27)	(1.46)
% ExecDir Share 5_25	-1.1541**	-1.0601**	-1.1430*
	(-2.05)	(-1.81)	(-1.95)
% ExecDir Share 25+	66.6255	66.7680***	67.1568***
	(2.81)	(2.81)	(2.83)

The OLS regression model is applied with a sample consists of 2,164 publicly listed firms between 2002 and 2006 in Taiwan. The dependent variable used in this model is the market-to-book ratio in each firm. Percentage of firm shares owned by (1) directors, including CEO (CEO), executive directors (ExecDir), and non-executive directors (NonExecDir) and (2) directors' family members are allocated into three categories: (1) under 5%, (2) between 5% and 25%, and (3) over 25%. For example, for a firm with 28% shares owned by non-executive directors, the value of *%NonExecDirShare0_5*, *%NonExecDirShare5_25*, and *%NonExecDirShare25+* is 5%, 20%, and 3%, respectively. Definitions of the other independent variables, including the control variables, are same as those in Table 21. In Model 1, we examine the directors' shares only. In Model 2, we examine both directors' and their family's shareholdings. Independent directors' career affiliations are examined in Model 3. T-statistics is presented in parenthesis below each coefficient estimate. Subscript ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 28 (Continued)

Dependent Variable Market-to-Book (M/B) Ratio	Model 1 Director's Shares	Model 2 Director and Family's Shares	Model 3 Director's Affiliations
% ExecDir's Family Share 0_5		0.0808	0.0402
		(0.07)	(0.03)
% ExecDir's Family Share 5_25		0.1669	0.3055
		(0.17)	(0.31)
% NonExecDir Share 0_5	-0.9392	-1.1837	-0.7171
	(-0.37)	(-0.46)	(-0.28)
% NonExecDir Share 5_25	-0.3109***	-0.3507***	-0.3605***
	(-3.28)	(-3.62)	(-3.72)
% NonExecDir Share 25+	-0.0971	-0.0861	-0.0816
	(-0.97)	(-0.86)	(-0.81)
% NonExecDir's Family Share 0_5		1.1785**	1.1678**
		(2.31)	(2.30)
% NonExecDir's Family Share 5_25		0.0388	0.0393
		(0.16)	(0.16)
% NonExecDir's Family Share 25+		1.6737**	1.7273**
		(1.98)	(2.05)
%Title of Indep. Dir. as Professor			0.2142
			(1.24)
%Title of Indep. Dir. as Accountant			0.4053
			(1.33)
%Title of Indep. Dir. as Lawyer			1.1213**
			(2.54)
%Title of Indep. Dir. as Executive			0.1828*
			(1.94)
%Title of Indep. Dir. as Gov. Officer			-1.8223**
			(-1.96)

Table 28 (Continued)

Dependent Variable Market-to-Book (M/B) Ratio	**Model 1** Director's Shares	**Model 2** Director and Family's Shares	**Model 3** Director's Affiliations
% Seat by Independent Dir.	0.1703*	0.1450	
	(1.68)	(1.43)	
% Seat by Non-Exec. Dir.	0.0957	0.0875	0.1021*
	(1.32)	(1.20)	(1.68)
%Share by Institutional Investors	0.2402***	0.2750***	0.2748***
	(5.82)	(6.32)	(6.33)
ROA_{t-1}	0.6773***	0.6398***	0.6271***
	(7.07)	(6.58)	(6.46)
Ln (Total Assets)	-0.0138**	-0.0134**	-0.0135**
	(-2.11)	(-2.05)	(-2.07)
Debt / Assets	-0.1483***	-0.1448***	-0.1501***
	(-3.16)	(-3.09)	(-3.20)
MB_{t-1}	0.7355***	0.7320***	0.7316***
	(46.69)	(45.89)	(45.90)
Director Seats	-0.0018	-0.0018	-0.0017
	(-0.63)	(-0.63)	(-0.61)
Adjusted R-sqr	0.6874***	0.6882***	0.6900***
Sample size	2,164	2,164	2,164