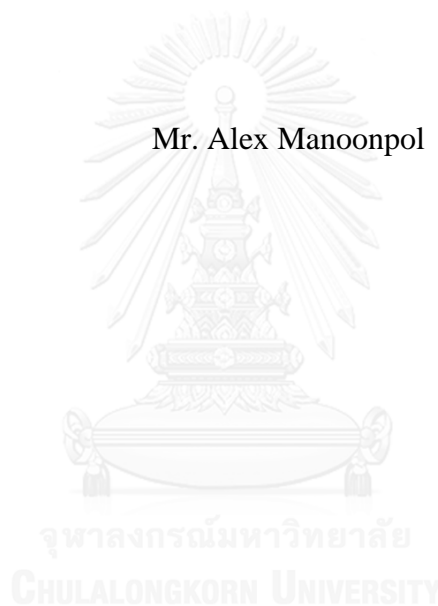


CEO Ownership and Stock Market Performance: Evidence from the Stock Exchange of  
Thailand and Market for Alternative Investment

Mr. Alex Manoonpol



บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)  
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ประธานเจ้าหน้าที่บริหารที่เป็นเจ้าของหุ้นสามัญและผลการดำเนินงานในตลาดหลักทรัพย์:  
หลักฐานจากตลาดหลักทรัพย์แห่งประเทศไทยและตลาดหลักทรัพย์เอ็มเอไอ



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต  
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อเล็กซ์ มนุษย์ผล : ประธานเจ้าหน้าที่บริหารที่เป็นเจ้าของหุ้นสามัญและผลการดำเนินงานในตลาดหลักทรัพย์: หลักฐานจากตลาดหลักทรัพย์แห่งประเทศไทยและตลาดหลักทรัพย์เอ็มเอไอ (CEO Ownership and Stock Market Performance: Evidence from the Stock Exchange of Thailand and Market for Alternative Investment) อ.ที่ปริกษาวิทยานิพนธ์หลัก: รศ. ดร. สันติ ธิรพัฒน์, 47 หน้า.

วิทยานิพนธ์ฉบับนี้ ศึกษาความสัมพันธ์ระหว่างประธานเจ้าหน้าที่บริหาร (CEO) ที่เป็นเจ้าของหุ้นสามัญกับผลการดำเนินงานของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยและตลาดหลักทรัพย์เอ็มเอไอระหว่างปี 2546-2557 ผลการศึกษาพบว่ากลยุทธ์ในการซื้อหุ้นสามัญที่มีประธานเจ้าหน้าที่บริหารเป็นเจ้าของบริษัทนั้นมีผลตอบแทนผิดปกติ (Abnormal return) นอกจากนี้ยังศึกษาเกี่ยวกับการกำกับดูแลกิจการที่ดี พบว่า มีผลตอบแทนผิดปกติในเชิงบวกเกิดขึ้นจากการซื้อหุ้นสามัญที่มีการกำกับดูแลกิจการที่ดีในระดับสูง ตามรายงานการกำกับดูแลกิจการบริษัทจดทะเบียน (IOD) ในทางตรงกันข้ามพบผลตอบแทนผิดปกติในเชิงลบกับหุ้นสามัญที่มีระดับการกำกับดูแลกิจการต่ำ นอกจากนี้ การศึกษาชี้ให้เห็นว่าการที่ประธานเจ้าหน้าที่บริหาร ถือหุ้นสามัญของบริษัทที่มีการกำกับดูแลกิจการที่ดีในระดับต่ำ ทำให้ผลตอบแทนสูงกว่าหุ้นที่มีการกำกับดูแลกิจการที่ดีในระดับต่ำแต่ไม่มีประธานเจ้าหน้าที่บริหารถือหุ้นสามัญนั้น การกำกับดูแลกิจการที่ดี ส่งผลอย่างมีนัยสำคัญต่อการกำหนดราคาหลักทรัพย์ และการถือหุ้นของประธานเจ้าหน้าที่บริหารเป็นแรงจูงใจสำหรับประธานเจ้าหน้าที่บริหาร ในการเพิ่มมูลค่าให้กับบริษัทฯ ซึ่งตลาดไม่สามารถประเมินราคาที่เหมาะสมของหลักทรัพย์ได้

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This study examines the relationship between CEO ownership and stock market performance in the Stock Exchange of Thailand and Market for Alternative Investment during 2003-2014. The study provides evidence that a strategy of going long in firms with significant CEO ownership produces positive abnormal returns. Furthermore, the study goes on to incorporate corporate governance and shows that going long in firms with a high Thai Institute of Directors (IOD) ranking also produces positive abnormal returns while the opposite holds true for firms with a low IOD ranking. Lastly, the study suggests that CEO ownership can reverse the negative impact of weak governance as going long in firms with a low IOD ranking but significant CEO ownership results in higher returns than going long in a portfolio where the only criteria is a low IOD ranking. Corporate governance matters in asset pricing and significant ownership is an added incentive for the CEO to add value to the company, which the market does not correctly price.

Department: Banking and Finance      Student's Signature .....

Field of Study: Finance                      Advisor's Signature .....

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# CHAPTER I

## INTRODUCTION

### 1. Background and Problem Review

Corporate governance arises from the need to protect the interests of stakeholders of a corporation. These mechanisms and processes by which corporations are controlled and directed serve the purpose of mitigating agency risks, in which corporate officers may be inclined to abuse their powers for their own self-interests. According to *The Modern Corporation and Private Property*, interests of managers and shareholders in publicly traded firms are not always well aligned (Berle & Means, 1932). However, if managers have a significant stake in the company, they may be more inclined to increase the firm's market value to protect their own investment in the company. Since these shares are voluntarily held and represent a sizeable fraction of the CEO's wealth, this gives the CEO an added incentive to use his executive powers to increase the value of the company. The question then becomes whether this public information of managerial ownership is correctly priced in the firm's stock price. Thus, it is worth exploring whether companies with a significant fraction of managerial ownership earn abnormal returns.

The current literature investigates the relationship between CEO ownership and stock market performance. Because the CEO has considerable control over the everyday operations of a company, it is especially critical to gauge the effect of his ownership on the stock price of the firm. The perception may be that if the CEO holds a significant stake, the firm may not work towards the benefit of all shareholders but only that of the CEO. Ulf von Lilienfeld-Toal and Stefan Ruenzi (2014) examine this



relationship and find that stock market returns of firms in which the CEO holds a considerable proportion of the firm's outstanding shares actually deliver large positive abnormal returns compared to those with low managerial ownership. That is, CEOs increase the value of their firms through their holdings of the firm's shares and the market does not correctly price this effect, causing abnormal returns. Lilienfeld-Toal and Ruenzi (2014) offer potential explanations for why information on ownership is not immediately reflected in prices but leads to abnormal returns. These explanations include: (1) markets being inefficient and not able to correctly price positive private information about firm value that the CEO has and this is signaled to outside investors through publication of CEO ownership information, (2) markets being inefficient and not able to correctly price the positive incentive effects of ownership, and (3) markets being efficient but abnormal returns emerge in a rational equilibrium as compensation for CEO effort. They also show that the large abnormal returns are strongest amongst those firms with weak external governance and large managerial ownership, suggesting CEO ownership can serve as a mechanism to lessen the negative impact of weak governance.

Missing from the literature, however, is the effect of CEO ownership in emerging markets where corporate governance standards may not be up to par with those in developed markets. More specifically, Thailand is an emerging market with two distinct stock exchanges. The Stock Exchange of Thailand (SET) is the country's main exchange while the other is the Market for Alternative Investment (MAI or mai), which is designated for small and medium size enterprises (SMEs). The difference between these two markets is the listing requirements. The MAI gives smaller companies greater accessibility to funding by having a lesser degree of requirements

to list on the exchange. These smaller companies that list on the MAI are also required to meet the minimum transparency requirements. Furthermore, it is not uncommon to find that the CEO, or highest managing executive, of the firm holds a significant percentage of the outstanding shares of the company in both the SET and the MAI. In environment setting where corporate governance standards may be lacking, investors may fear that the CEO, given his large stake in the company, will exploit minority shareholders and not do what is in the best interest of all shareholders. What they fail to consider is that a significant stake in the company gives the CEO more incentive to make decisions in order to increase the value of the firm and protect his investment. The market may not correctly price these incentive effects causing abnormal returns in the process.

The results of this study should benefit those looking to invest in the SET and MAI but are concerned over corporate governance issues. By determining whether positive abnormal returns are made in firms with high CEO ownership, a common characteristic of a firm with weak governance, investors may become more comfortable investing in these stocks and thereby contributing to greater liquidity in the stock market.

## **2. Statement of Problem/Research Question**

There have been many empirical studies that attempted to explore the relationship between managerial ownership and firm value. Most of the prior evidence shows that a relationship does exist in that the greater the level of managerial ownership, the higher the firm value to a certain threshold. There have also been studies on various corporate governance measures and its effect on stock prices.

However, there has yet to be a study that takes into account CEO ownership and its effect on stock prices in an emerging market. To explore further, I attempt to find if buying firms based on the level of their Thai IOD ranking, a measure incorporates the five OECD principles of corporate governance, produces abnormal returns. As many studies have suggested, good governance should lead to better firm performance, which may not be immediately reflected in the stock price. Lastly, I want to come to a conclusion on whether significant CEO ownership can reverse the negative impact of weak governance based on a low IOD ranking. Thus, this study aims to answer the following questions:

1. Do varying levels of CEO ownership result in abnormal returns in Thailand?
2. Does corporate governance based on Thai IOD ranking result in abnormal returns?
3. Can significant CEO ownership serve as a mechanism to mitigate the negative impact of weak governance?

### **3. Objective of the Study**

The main objective of this paper is to expand on previous studies of managerial ownership and asset pricing, focusing specifically on CEO ownership in Thailand. I choose to study Thailand in particular because it gives a timeframe to work with as the SET began implementing new governance measures after the 1997 Asian financial crisis with the requirement of audit committees for listed companies. As bad governance played a role in the crisis, Thai regulators decided to establish the Institute of Directors in 1999 to strengthen corporate governance in firms across the

country. To show that corporate governance does matter in asset pricing, I look to uncover if going long in a portfolio of low IOD ranked companies produces negative abnormal returns. Then, I investigate if significant CEO ownership can reverse the negative impact of a low IOD ranking by producing higher returns.

#### **4. Scope of the Study**

This thesis investigates those stocks listed in the SET and MAI, excluding financial firms and companies under rehabilitation, from January 2003 to December 2014 for which I can acquire ownership data.

#### **5. Contribution**

This study shows for the first time that firms in an emerging market with high managerial or CEO ownership produce large abnormal returns. This study also specifically caters to Thailand, which I believe is a fitting proxy for emerging markets, since a large number of firms are still controlled by manager-owners even after making changes to governance standards after the financial crisis in 1997. The Thai IOD ranking system provides another dimension to the study as it reinforces the argument that corporate governance does matter for stock returns. While significant CEO ownership could be construed as an indicator of weak governance, I demonstrate that these firms with high ownership produce positive abnormal returns and are actually good firms to invest in when management is properly incentivized. The whole premise of this study is to acknowledge that while manager-owners are a mainstay in the Thai market even after undergoing changes to improve corporate

governance, positive abnormal returns can still be made. Overall, the study suggests that a large ownership stake by a properly incentivized manager or CEO serves as a corporate governance mechanism in all settings.

## **6. Organization of the Study**

The remainder of this study is organized as follows. Chapter II provides the literature review and hypothesis development. Chapter III describes data and methodology. Chapter IV reports the results and discussion. Chapter V concludes the study.



## CHAPTER II

### LITERATURE REVIEW

#### 1. Review of Literature

This chapter outlines the reviews of different aspects of managerial ownership as it relates to firm value and stock market performance. The following sections will be broken down into two parts, where the former will discuss CEO ownership and firm value while the latter will incorporate corporate governance and asset pricing.

- *CEO ownership and firm value*

Most of the previous literature has focused on corporate governance as it relates to firm value, using Tobin's  $q$  as a proxy for firm value. Various governance proxies such as managerial ownership, board composition, and board structure, have been used to test whether they have an effect on the value of a firm. I focus on works incorporating CEO ownership and its impact on firm value.

Before fixating on the effect of CEO ownership on firm value, there have been studies that examined the effect of board member ownership on firm value. Morck, Shleifer, and Vishny (1988) studied the relationship between equity ownership of the board of directors and market valuation of the firm's assets. More specifically, they use Tobin's  $q$  as a proxy for the market valuation of a firm's assets and start their analysis with a piecewise linear regression of Tobin's  $q$  on board member ownership, allowing slopes to change at 5% and 25%. The 5% cut-off is used as a point in which ownership is no longer negligible while the 25% cut-off represents the point where a hostile takeover bid for the firm would not succeed. The results show that as ownership rises from 0% to 5%, Tobin's  $q$  rises. Tobin's  $q$  falls as ownership rises

further to 25%, and then continues to rise beyond 25%. These results apply to both the firm's top executive officers as well its outside board members, suggesting that board members with different individual ownership positions affect firm value.

Other studies have looked at the different structures of equity ownership of a firm as it relates to firm value. McConnell and Servaes (1990) look at the fraction of shares held by institutional investors. They find a strong positive correlation between Tobin's  $q$  and the level of institutional ownership. This result coincides with the efficient-monitoring hypothesis, which suggests a positive relationship between corporate value and institutional ownership. In contrast, they find that large blockholder ownership has no bearing on Tobin's  $q$ . It can be argued that some blockholders are entirely passive and do not influence everyday operations of a firm; thus, their ownership does not influence firm value. This study suggests that a large ownership stake alone does not affect firm value, unless the owner can exert control or discretion in regards to the operations of the firm.

Griffith (1999) investigates the effect of CEO ownership of common stock and its effect on firm value. By regressing various levels of ownership with Tobin's  $q$ , Griffin finds that a possible conflict of interest between the principle and agent may occur when ownership and control of the firm is distinct. When CEO ownership reaches certain levels, Tobin's  $q$  is found to fluctuate. The results of the study show that when the CEO owns between 0 and 15% of the firm, Tobin's  $q$  increases and as CEO ownership increases to 50%, it declines before rising again with more than 50% ownership. At the lower levels of ownership, the results support the convergence-of-interest hypothesis, in which a firm's market valuation should rise when management owns an increasingly larger portion of the firm. However, beyond the 15% level, the

results point to the entrenchment hypothesis, in which the manager becomes self-indulgent and reduces the value of the firm as he obtains greater control. Overall, his study tells us that the effect of CEO ownership on firm value depends on varying levels of ownership.

Kim and Lu (2011) add further to Griffith's study by looking at how internal governance mechanisms interact with external governance and its effect on firm value. In their study, the internal governance mechanism is CEO ownership. They then look at R&D investments, as these types of investments are typically discretionary and risky. Their results uncover a significant hump shaped relation between R&D investments and CEO ownership when external governance is weak but no relation when external governance is strong. This reveals that CEO ownership has an effect on CEO effort and risk-taking when external governance is weak but strong external governance mitigates the agency problem. Interactively, CEO ownership and weak external governance help demonstrate the hump shaped relation between managerial ownership and Tobin's  $q$ .

Singhchawla and Evans (2010) investigate the effects of managerial ownership on firm performance in Thailand. They use Tobin's  $q$  to proxy firm performance and find that a large shareholding of executive directors has a positive effect on firm performance up until a certain point before entrenchment takes over. They confirm previous studies done in developed markets that the relationship between managerial ownership and firm performance is non-linear.

Equity-based compensation is commonly given to top management as a tool to mitigate agency problems. This is expected to improve management performance and the value of the firm. Abosedra, Dah, and Matar (2012) test the marginal effect of



equity-based compensation on shareholder wealth and whether this wealth changes with the percentage of independent directors. They use panel data with industry fixed effect and find empirical evidence that there exists a positive significant relationship between equity-based compensation and firm value. They also conclude that the positive effect on firm value increases with an increase in the percentage of independent directors. These findings provide a link between CEO incentives and firm value.

Board diversity or composition also plays a role in the value of the firm. Carter, Simkins, and Simpson (2002) test the relationship between firm value and board diversity, defined as percentage of women, African-Americans, Asians, and Hispanics on the board of directors. They show that there is a positive relationship between firm value and diversity, in that firms who make a commitment to having women on the board also have a high number of minorities and vice versa. However, this number decreases as the number of insiders on the board increases. Though this study does not directly incorporate CEO ownership, it alludes to the fact that board composition is another element that needs to be taken into consideration as it has an impact on the value of the firm.

Board structure has been up for debate as to whether it has an effect on firm value. In particular, staggered boards that have different classes of directors is put to question as whether it is an effective form of governance and whether it has an effect on firm value. Cohen and Wang (2013) set out to answer this question by identifying how market participants view staggered boards by looking at stock returns after court rulings on the boards of affected firms. Their results imply that market participants view staggered boards as value decreasing on average. Staggered boards may foster

an atmosphere that puts the interest of top management ahead of the interest of shareholders and outsiders perceive this as value decreasing. This illustrates the fact that board structure has an effect on firm value and implies that agency problems persist unless an effective governance mechanism, such as a properly incentivized CEO, is in place.

The aforementioned studies reinforce the notion that firm value is affected by managerial ownership, board composition, and board structure. I pay close attention to works incorporating CEO ownership, though most of the literature already covers its absolute effect on firm value. Nevertheless, there is room to explore how investors use this public ownership information when it comes to trading and making gains in the stock market.

- ***Corporate governance and asset pricing***

An important aspect of this thesis that differentiates it from other previous works involving corporate governance and managerial ownership is the inclusion of asset pricing. How stocks with varying levels of managerial ownership perform in the stock market will allow us to conclude whether a relationship between managerial ownership and corporate performance exists. Past works have typically shown that a firm with good governance leads to better performance, which is not always immediately reflected in the share price.

Gompers, Ishii, and Metrick (2003) test an investment strategy based on buying firms with strong shareholder rights and selling firms with weak shareholder rights to see if abnormal returns could be made. Their results indicate that corporate governance is strongly related to stock returns. They build their own governance index using distinct corporate governance provisions and find that buying the highest

governance index (G-Index) firms results in 8.5% abnormal return per year. This suggests that the market is inefficient as it does not correctly price external corporate governance mechanisms.

Cremers and Nair (2005) look at the relationship between internal governance and external governance and its effect on stock market returns. They construct portfolios that buy firms with high levels of takeover vulnerability and short firms with low levels of takeover vulnerability and find that abnormal returns of 10-15% are made only when blockholder ownership is high. This shows that there is a complementary effect, in which internal and external governance work together and are associated with long term abnormal returns.

Giroud and Mueller (2011) explore corporate governance as it relates to firms in different competitive environments. They find that firms in noncompetitive industries benefit more from good governance than firms in competitive industries. More specifically, they observe lower labor productivity, higher input costs, and more value-destroying strategies in these weak governance firms in noncompetitive industries. This is because firms with weak governance in less competitive industries lack the competitive pressure to incentivize or force managers to make value-increasing decisions. Their study suggests that there is a relationship between industry competition and corporate governance and that the negative impact of weak governance on a firm can be offset with a properly incentivized manager through his ownership position in the firm.

These studies give weight to corporate governance as it relates to asset pricing. The level of managerial ownership in a firm can be considered an aspect of internal corporate governance, making it worthwhile to see the effects of managerial

ownership on stock prices. Publicly available ownership information has shown to have an effect on stock prices in developed markets, making there a pressing need to see if the same holds true in a different environment setting.

## **2. Summary of the Review**

Most of the studies agree that managerial ownership has an effect on firm value and operational performance. They all relate back to the convergence-of-interest and entrenchment theories. Studies show that in both developed and emerging markets, the effect of CEO ownership on firm value is non-linear. Firm value, estimated by Tobin's  $q$ , increases to a certain level as ownership increases before falling once reaching a certain threshold. This is rational in that a CEO will be incentivized to do what is in the best interest of all shareholders with a significant stake in the company. However, once his stake starts to become too large, the incentive to maximize value declines as market discipline becomes less effective. Further studies show that corporate governance mechanisms can be useful to mitigate these entrenchment problems. Many studies look at various corporate governance measures and how they relate to asset pricing. Gompers, Ishii, and Metrick (2003) provide analysis on how buying firms with strong shareholder rights (democracy firms) and selling firms with weak shareholder rights (dictatorship firms) results in abnormal returns. Moreover, managerial ownership can be interpreted as one aspect of internal corporate governance. Firms with high managerial ownership tend to have lower institutional ownership and would be considered a dictatorship firm according to Gompers, Ishii, and Metrick (2003). Nevertheless, Lilienfeld-Toal and Ruenzi (2014) find that these firms are actually good firms to invest in and produce large

abnormal returns in the U.S. stock market. Previous studies fail to address the effect of CEO ownership and stock market performance in an emerging market where governance standards are still lacking, leaving the possibility of greater entrenchment by a CEO. Thus, this thesis aims to fill this gap and reexamine CEO-owned firms and the implications on stock price.

### 3. Hypothesis Development

The large number of CEO-owned firms and governance overhaul in Thailand bring up the question of how investors perceive such public information when trading in the stock market. A large ownership stake should rationally cause the CEO to make decisions that are in the best interest of the firm to add value to his investment rather than destroy it. Meanwhile, a firm with good governance should have measures in place to prevent issues such as tunneling or bad investments that diminish the value of a firm and in turn a plunge in the stock price. This information is publicly accessible for all investors to analyze when deciding whether to invest in a firm. However, the information may not be immediately priced into the stock price, giving rise to the possibility of abnormal returns surfacing. This leads to the following hypotheses:

***Hypothesis 1:** Thai firms with a high level of CEO ownership (> 10%) result in abnormal returns.*

According to Lilienfeld-Toal and Ruenzi (2014), a value-weighted portfolio going long in firms, in which the CEO holds more than 10% of the company's stock results in positive abnormal returns from 1988 to 2010. Therefore, I test the same criteria in Thailand, an emerging market where voluntary CEO ownership of a

publicly listed firm is abundant but where governance measures intended to protect minority shareholders are still not on the same level as a developed market. The results will show if abnormal returns can be made in the Thai market. That is, I will be able to determine if the Thai market correctly prices public ownership information in the stock. If it does, then no abnormal returns should be made. If not, then abnormal returns should occur like in Lilenfield-Toal and Ruenzi's (2014) findings.

***Hypothesis 2:** Thai firms based on a high (low) IOD ranking result in abnormal returns.*

This is a specific hypothesis in relation to Thailand. The Thai Institute of Directors was established in response to concerns over poor governance practices that were part of the downfall of many large corporates in Thailand during the 1997 Asian Financial Crisis. The IOD has promoted a professional standard for all listed Thai companies to abide by. As most of the previous literature has suggested, good governance practices have been known to lead to greater shareholder value and long-term sustainable growth of a company. Thus, those firms ranked highly by the IOD should be more efficient, exhibit strong firm performance, and thereby deliver good returns to investors while the opposite should hold true for those firms with a low level ranking. These rankings are issued each year and public information for all investors. However, this information may not be reflected in stock prices right away, leading to abnormal returns.

Because significant CEO ownership can also be perceived a sign of bad governance as it puts a majority of the control under one individual, this could be one of the reasons a CEO-owned firm has a low IOD ranking. However, I contend that

significant CEO ownership can be good in that it aligns the interests of both owners and minority shareholders, which in turn increases firm value and supports higher stock prices. This leads to my last hypothesis, which is:

***Hypothesis 3: Thai firms with a low IOD ranking ( $< 3$ ) but significant CEO ownership ( $> 10\%$ ) result in higher returns than firms with low IOD ranking alone.***

Lilenfeld-Toal and Ruenzi's (2014) main findings suggest that S&P1500 firms with a large fraction of CEO ownership can reverse the negative impact of weak external governance. This is seen through the positive impact CEO ownership has on returns. In fact, firms seen as being undesirable due to their weak corporate governance characteristics may actually be good firms to invest in if the CEO is properly incentivized. The intuition is that Thai firms with high level of CEO ownership but weak governance, evidenced by a low IOD ranking, should deliver better returns than buying firms with a low IOD ranking alone. Thus, comparing the returns from the double sorted portfolio against the single sorted portfolio will determine if it is possible for CEO ownership to reverse the negative impact of weak governance on share price.

## **CHAPTER III**

### **DATA AND METHODOLOGY**

#### **1. Data and Sample**

My study is populated with stocks from both the SET and MAI, excluding financial firms and companies under rehabilitation. The time period and coverage for the data is from January 2003 to December 2014. I hand-collect ownership data that is publicly available on the SET and MAI website as well SEC Filing Form 56-1, where information on major shareholdings and executive titles can be found. The SETSMART database is also used to fill in any ownership information gaps from the previous sources. This ensures that my data is of the highest quality. There is a total of 10 sample years, in which I collect ownership data (2003-2012). I list the number of firms in each of these sample years. Next, I separate the sample in each respective year into three mutually exclusive groups: (1) number of firms with greater than 0% managerial ownership but less than 5%, (2) number of firms with greater than or equal to 5% managerial ownership but less than or equal to 10%, and (3) number of firms with greater than 10% managerial ownership. Stock market data comes from the Thomson Reuters Datastream database as it contains daily security prices and returns, capital distributions, financial statements, market indices and returns, and economic statistics. This is useful to calculate market returns after construction of my portfolios. Lastly, I separate firms based on IOD ranking for the years 2008-2014 using the Thai Institute of Director Reports that are publicly accessible.



## 2. Portfolio Construction

I construct portfolios based on managerial ownership data from above to test whether abnormal returns occur. I rebalance the portfolio at the beginning of each year and only select stocks based on ownership data publicly available at that point in time. When selecting stocks from the data universe, I allow a lapse of two years to pass since annual reports for a given year become available the following year while I allow another year for investors to digest the ownership information. This means that for a selected year,  $t$ , I invest in  $t+2$ .

I construct value-weighted long-only portfolios based on managerial ownership. Equal-weighted portfolios do not provide a meaningful analysis given limited data. To provide a definition for managerial ownership, I concentrate on the manager or officer (usually the CEO) with the highest stake in the company. Then I look at the fraction of the firm's outstanding shares that the officer owns. To sort the firms in our sample, I define having high managerial ownership using fixed cut-offs. That is, 5% and 10% of all outstanding shares owned by a manager will count as having significant managerial ownership. While I focus on specific cut-offs for managerial ownership, there is also the possibility that this creates portfolios that differ over time because of the number of firms included is not the same each year. As a result, another means of sorting the stocks will be to rank all the stocks in a given year based on percentage of managerial ownership. Thus, I invest in firms in the top 10% of all firms (first decile) as one cut-off and the second decile as the other cut-off.

I construct additional portfolios to incorporate managerial ownership and corporate governance characteristics. To do this, I add the IOD's corporate governance ranking, which is publicly available on the Thai Institute of Directors

website for the years 2008-2014, into the stock selection process. The IOD gives a ranking of 1-5 with 5 being the highest and less than 3 being on the lower levels. Based on these rankings, I construct two portfolios with one encompassing all firms with an IOD ranking of 3-5 and another portfolio consisting of all firms with an IOD ranking of less than 3.

To investigate if CEO ownership can mitigate the negative effects of poor governance, I construct one last portfolio that includes all firms with CEO ownership greater than 10% and an IOD ranking less than 3. This portfolio is a proxy for a firm where the CEO has a considerable stake and is less restricted in the executive decision-making for the firm due to weaker governance standards.

### 3. Fama-French Three-Factor Factor Model

I use the Fama-French (1993) three-factor model to adjust returns for the influence of systematic risk factors, which include company size, company price-to-book ratio and market risk:

$$R_{i,m} - R_{b,m} = \alpha_i + \beta_{i,M} \times mktrf_m + \beta_{i,smb} \times smb_m + \beta_{i,hml} \times hml_m + \varepsilon_{i,m} \quad (1)$$

Where:

$R_{i,m}$  = Return of the portfolio  $i$  in month  $m$

$R_{b,m}$  = Return of benchmark portfolio in the same month (use risk-free rate for long-only portfolio)

$mktrf$  = Excess return of market portfolio (SET Total Return Index) over risk-free rate

$smb$  = Return difference between small and large capitalization stocks

$hml$  = Return difference between high and low book-to-market stocks

**Note:**  $smb$ ,  $hml$  are based on entire universe of stocks

#### **4. Robustness Test**

##### *Limits of Arbitrage*

I conduct several robustness tests to confirm the stability of the main results. The first robustness test is to analyze a passive buy and hold strategy as opposed to rebalancing the portfolio each year. The logic behind this test is that it is possible that investors know of the abnormal returns that can be gained from investing in CEO-owned firms, but they are unable to take profits due to severe limits of arbitrage. Limits of arbitrage tend to be more severe if trading costs are high, if firms are small and illiquid, if firms are risky, or if short sales are not possible. In this case, it may be that the trading costs involved from constantly rebalancing the portfolio to account for new CEO-owned firms each year eliminates the profits from buying CEO-owned firms. For this additional test, I employ a passive long and hold strategy with no annual rebalancing of the portfolio. This strategy invests in the portfolio with CEO ownership greater than 10% and CEO-owned firms in the top 10% in the first sample year, without any rebalancing in the following years. I track the monthly excess returns of the portfolio and test if these returns are statistically significant. Significant returns suggest that a low cost strategy still earns abnormal returns and that limits of arbitrage have no correlation with why abnormal returns occur.

##### *Temporal Stability*

Another test I perform is to test for stability across time periods. I separate the sample size into two halves. Since the sample period I invest in ranges from 2005-2014, I classify the early half as the years 2005-2009 (5 years) and the late half as the years 2010-2014 (5 years). I do this for the portfolio with CEO ownership greater than

10% and for the portfolio that invests in the top 10% of firms according to CEO ownership. Using the same methodology as the main test in the study, I adjust returns using the Fama French (1993) three-factor model. The rationale behind this test is to check that results are consistent with our main results across different time periods.

### *Long-Short Portfolios*

I construct long-short portfolios to provide additional support for the main findings in this study. Once again, I use the Fama French (1993) three-factor model to adjust returns for the influence of systematic risk factors. However, instead of using the risk-free rate for the return of the respective benchmark portfolio, or  $R_{b,m}$ , I use the returns of the short side. I test long-short portfolios for firms with CEO ownership greater than 10% and firms in the top 10% according to CEO ownership. In these two cases, the short side will include those firms without managerial ownership, or equal to 0%, and all firms in the bottom 10% according to CEO ownership.

### *Managerial Discretion*

The extent of managerial discretion a CEO has in the firm could prove vital in how successful a company operates and thus how it performs in the stock market. For a deeper analysis into how firms where the CEO has high managerial discretion perform in the stock market, I classify firms with an above median value of past three-year sales growth, IOD less than 3, and CEO ownership greater than 10%, as a proxy for a firm with high managerial discretion. The logic behind using high sales growth is that strong past sales builds up the resources a CEO has at his disposal to invest in different projects. High past sales growth is also a sign that the CEO is successful and

should be an indicator of his power and control in the company. By taking into account an IOD less than 3 and CEO ownership greater than 10%, I essentially reduce the constraints that may be placed upon a CEO in how he runs the company while keeping the incentive to protect his investment.



## CHAPTER IV

### RESULTS AND DISCUSSION

#### 1. Summary Statistics

Table 1 presents summary statistics for all firm year observations on CEO ownership, operational performance, firm growth, profitability, and cost efficiency. Detailed descriptions of each variable can be found in Appendix A. There are 4,904 firms in the total sample as shown in Panel A while Panel B presents all firms with CEO ownership greater than 10%, which aggregates to 1,030 firms. The first line in each panel corresponds to the average CEO ownership. Average CEO ownership in the total sample is 6.3% of all outstanding shares. This substantial figure is indicative of the type of ownership structures prevalent in Thailand. Meanwhile, average ownership in the sample of firms that have CEO ownership greater than 10% is 24.4%.

I measure operational performance using sales growth as a proxy. Average sales growth for the total sample is 10.6%. In magnitude, this figure is larger than the average sales growth (9.8%) in the sample of firms that have CEO ownership greater than 10%. Next, I measure firm growth using total asset growth as a proxy. Average total asset growth for the total sample is 14.9%, which is higher in magnitude than the average total asset growth (12.1%) for the sample of firms that have CEO ownership greater than 10%. I measure profitability using return on asset (ROA) and return on equity (ROE). Average ROA and ROE for the total sample is 5.9% and 8.9%, respectively. Both these figures are smaller in magnitude compared to the average ROA (6.6%) and ROE (9.4%) in the sample of firms that have CEO ownership

greater than 10%. Lastly, I look at cost efficiency using the cost of goods sold (CGS) ratio and selling, administrative, and general (SGA) expenses divided by assets. Average CGS and SGA for the total sample is 70.8% and 37.5%, respectively. Average CGS is in line with the sample of firms that have CEO ownership greater than 10% while average SGA for the total sample is higher than the sample with firms that have CEO ownership greater than 10%. From an economic perspective, this suggests that CEO-owned firms tend to have weaker operational performance, grow slower, have higher profitability, and are more cost efficient than the total sample of firms. For further insights into the sample, I take into consideration the amount of capital expenditure spent, the size of the firm, dividend yield, book-to-market ratio, and labor productivity. In magnitude, CEO-owned firms tend to be smaller firms that spend more on capital expenditure and pay lower dividends. The total sample size has greater production efficiency, given higher sales per employee. Book-to-market ratios are similar in magnitude for both samples.

In the period from January 2003 to December 2012, I find that the number of firms with CEO ownership greater than or equal to 5% is on average 149 firms per year while the number of firms with CEO ownership greater than 10% is on average 103 firms per year. Approximately 30% of all firms in the Thai market (excluding financial firms and firms under rehabilitation) during the 10-year sample period have significant CEO ownership ( $\geq 5\%$ ). For the IOD rankings, there is a sample period of 5 years from January 2008 to December 2012. On average 344 firms per year had an IOD ranking of 3-5 while on average 211 firms had an IOD ranking less than 3 per year. Approximately 62% of Thai firms had an IOD ranking of 3-5 while the remainder had an IOD ranking less than 3 during the 5-year sample period.

### Table 1 Summary Statistics

This table contains summary statistics for the firms in the main sample. I present the mean of all firm-year observations in Panel A and the mean conditional on CEO ownership for a firm-year observation being greater than 10% in Panel B. The first line contains the ownership of the CEO in percent of the firm's outstanding shares. Detailed descriptions of all variables can be found in Appendix A. In order to reduce the effects from outliers, all variables are winsorized at the 1% and 99% of the empirical distribution. Note that  $N$  is the number of firm observations.

	$N$	<i>Mean</i>	<i>Median</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<b>A. Total Sample</b>						
CEO Ownership	4904	6.27	0	11.31	0	67.58
Sales growth	4494	10.64	7.50	20.45	-54.52	117.52
Asset growth	4761	14.88	5.61	24.84	-43.29	185.05
ROA	4761	5.88	6.20	9.51	-42.94	43.00
ROE	4440	8.89	10.64	20.49	-123.38	77.77
CGS	4274	70.84	73.73	18.44	11.36	109.68
SGA	4085	37.48	24.72	38.65	2.28	268.85
Capital Expenditure	4718	4.79	2.84	5.36	0.01	30.41
logSize	4733	9.17	9.10	0.75	6.16	12.00
Yield	4530	3.91	3.82	3.43	0.00	15.61
logBM	4374	-3.05	-3.03	0.30	-4.00	-2.22
Labor Productivity	4536	6.49	6.44	0.49	5.41	8.09
<b>B. CEO Ownership &gt; 10%</b>						
CEO Ownership	1030	24.43	20.84	12.85	10.05	67.58
Sales growth	909	9.80	7.27	19.60	-47.25	97.57
Asset growth	1000	12.08	6.68	25.79	-32.55	201.13
ROA	1000	6.55	6.45	8.51	-31.37	31.99
ROE	981	9.38	10.53	17.38	-89.49	47.55
CGS	991	70.51	72.30	16.63	18.22	99.09
SGA	954	33.64	24.21	31.31	3.43	198.93
Capital Expenditure	992	5.32	3.60	5.38	0.07	30.53
logSize	963	9.02	8.96	0.59	7.74	10.78
Yield	942	3.69	3.36	3.50	0.00	15.25
logBM	944	-3.06	-3.04	0.32	-4.32	-2.36
Labor Productivity	913	6.43	6.36	0.43	5.46	7.59

### Table 2 Sample Sizes

This table presents the various sample sizes for each of the main portfolios in the study. Note that  $N$  is the number of firm observations.

	$N$	<i>Mean</i>
0% < CEO Ownership < 5%	836	83.6
5% ≤ CEO Ownership ≤ 10%	468	46.8
CEO Ownership > 10%	1030	103.0
CEO Ownership 1st Decile	230	23.0
CEO Ownership 2nd Decile	235	23.5
IOD 3-5	1722	344.4
IOD < 3	1058	211.6



## 2. Portfolio Evidence

To determine whether firms with significant CEO ownership earn abnormal returns, I look at the long-only portfolios I constructed. I examine the portfolios with three different cut-offs. The first cut-off is where the CEO owns more than 0% but less than 5% of all outstanding shares. This portfolio represents firms that have a negligible amount of CEO ownership. The second-cut-off is where the CEO owns equal to or greater than 5% but less than or equal to 10% of all outstanding shares. This portfolio represents the point where CEO ownership is no longer negligible. The last cut-off is where the CEO owns greater than 10% of all outstanding shares. This portfolio represents firms where the CEO holds a significant stake in the company. Next, I look at portfolios consisting of the top 10% (first decile) and second decile of all firms according to CEO ownership since the number of firms included each year is not the same.

Table 3 presents the portfolio returns for the  $0\% < \text{CEO Ownership} < 5\%$  cut-off over the sample period January 2003 to December 2014. The portfolio does not earn abnormal returns, which was expected considering the fraction of CEO ownership is negligible.

**Table 3** Long-Only Portfolio –  $0\% < \text{CEO Ownership} < 5\%$  cut-off

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO ownership greater than 0% but less than 5%. The portfolio is constructed based on the lagged fraction of the firm's outstanding shares owned by the CEO. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.1321	0.2958	0.4465	0.6565
Market-RF	0.9848***	0.0497	19.7990	0.0000
SMB	-0.0743	0.0567	-1.3096	0.1942
HML	0.2827***	0.0575	4.9114	0.0000
R Square	0.8360			
F	130.8220***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 4 displays the portfolio returns for the  $5\% \leq \text{CEO Ownership} \leq 10\%$  cut-off over the sample period January 2003 to December 2014. The portfolio earns a monthly alpha of 0.31%, which is significant at the 10% level and translates into an annual abnormal return of 3.7%. Thus, investing in firms where CEO ownership crosses the 5% threshold results in abnormal returns.

**Table 4** Long-Only Portfolio –  $5\% \leq \text{CEO Ownership} \leq 10\%$  cut-off

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO ownership greater than or equal to 5% but less than or equal to 10%. The portfolio is constructed based on the lagged fraction of the firm's outstanding shares owned by the CEO. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.3073*	0.1796	1.7109	0.0899
Market-RF	0.9254***	0.0434	21.3248	0.0000
SMB	-0.0986*	0.0569	-1.7341	0.0857
HML	0.3251***	0.0536	6.0679	0.0000
R Square	0.8093			
F	152.7826***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 5 shows the portfolio returns for the 10% cut-off over the sample period January 2003 to December 2014. The portfolio earns a monthly alpha of 0.40%, which is significant at the 10% level and translates into an annual abnormal return of 4.8%. It is important to note that the return for this portfolio is higher than the previous portfolio where the cut-off is  $5\% \leq \text{CEO Ownership} \leq 10\%$ .

**Table 5** Long-Only Portfolio – CEO Ownership > 10% cut-off

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO ownership greater than 10%. The portfolio is constructed based on the lagged fraction of the firm's outstanding shares owned by the CEO. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.4015*	0.2217	1.8106	0.0732
Market-RF	1.0042***	0.0352	28.5396	0.0000
SMB	-0.0327	0.0545	-0.5994	0.5502
HML	0.4085***	0.0454	9.0013	0.0000
R Square	0.8913			
F	278.8639***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 6 reveals the portfolio returns for the first decile or top 10% of all firms based on CEO ownership over the sample period January 2003 to December 2014. The portfolio earns a monthly alpha of 0.49%, which is significant at the 10% level and translates into an annual abnormal return of 5.9%.

**Table 6** Long-Only Portfolio – CEO Ownership 1<sup>st</sup> Decile

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing the 1<sup>st</sup> decile of all firms based on CEO ownership. The portfolio is constructed based on the lagged fraction of the firm's outstanding shares owned by the CEO. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.4936*	0.2708	1.8231	0.0712
Market-RF	0.7219***	0.0607	11.9013	0.0000
SMB	-0.0561	0.0587	-0.9559	0.3414
HML	0.4256***	0.0560	7.5960	0.0000
R Square	0.6317			
F	58.8794***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 7 highlights the portfolio returns for the second decile based on CEO ownership over the sample period January 2003 to December 2014. The portfolio does not yield abnormal returns. This implies that the more substantial ownership cut-off (1<sup>st</sup> decile) is what drives abnormal returns.

**Table 7** Long-Only Portfolio – CEO Ownership 2<sup>nd</sup> Decile

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing the 2<sup>nd</sup> decile of all firms based on CEO ownership. The portfolio is constructed based on the lagged fraction of the firm's outstanding shares owned by the CEO. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.4101	0.3299	1.2432	0.2165
Market-RF	0.9879***	0.0649	15.2302	0.0000
SMB	-0.0343	0.0726	-0.4727	0.6374
HML	0.2945***	0.0644	4.5709	0.0000
R Square	0.6908			
F	78.1838***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

To investigate further whether corporate governance plays a role in generating abnormal returns and to test the second hypothesis, I analyze the long-only portfolios based on IOD ranking. The first portfolio includes all firms with a ranking of 3-5 while the second portfolio takes into account all firms with a ranking less than 3.

Table 8 illustrates the portfolio returns for an IOD ranking of 3-5 over the sample period January 2008 to December 2014. The portfolio earns a monthly alpha of 0.22%, which is significant at the 1% level and translates into an annual abnormal return of 2.6%.

**Table 8** Long-Only Portfolio – IOD ranking 3-5

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with IOD ranking of 3, 4, and 5. The portfolio is constructed based on the rankings disclosed in the Thai Institute of Director Report. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.2238***	0.0464	4.8204	0.0000
Market-RF	0.9626***	0.0084	114.4046	0.0000
SMB	0.0112	0.0096	1.1683	0.2477
HML	-0.0514***	0.0096	-5.3341	0.0000
R Square	0.9960			
F	4705.0988***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 9 unveils the portfolio returns for an IOD ranking less than 3 over the sample period January 2008 to December 2014. The portfolio earns a negative monthly alpha of 1.1%, which is significant at the 5% level and translates into a negative annual abnormal return of 13.4%. The results of these two portfolios in Table 8 and 9 confirm the second hypothesis where a high (low) IOD ranking results in positive (negative) abnormal returns. Moreover, investing in firms with a low IOD ranking would result in substantial underperformance.

**Table 9** Long-Only Portfolio – IOD ranking < 3

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with IOD ranking less than 3. The portfolio is constructed based on the rankings disclosed in the Thai Institute of Director Report. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	-1.1188**	0.5637	-1.9847	0.0259
Market-RF	0.7644***	0.0812	9.4128	0.0000
SMB	0.0324	0.0814	0.3980	0.6976
HML	0.2454***	0.0729	3.3680	0.0056
R Square	0.8865			
F	31.2568***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

The final test is to see whether significant CEO ownership improves returns for a firm with weak governance according to its Thai IOD ranking. This last portfolio contains all firms that have CEO ownership greater than 10% and an IOD ranking less than 3. Table 10 displays the portfolio returns over the sample period January 2008 to December 2014. The double sorted portfolio earns a negative monthly alpha of 0.27%, or a negative annual return of 3.2%. While this result is not significant, the result is economically meaningful in that alpha is less negative than the previous portfolio where the only criterion is to have an IOD ranking less than 3. The added element of CEO ownership turns negative abnormal returns essentially to zero.

**Table 10** Long-Only Portfolio – CEO Ownership > 10% & IOD ranking < 3

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO Ownership greater than 10% and IOD ranking less than 3. The portfolio is constructed based on the lagged fraction of the firm's outstanding shares owned by the CEO and the rankings disclosed in the Thai Institute of Director Report. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	-0.2745	0.7337	-0.3741	0.7097
Market-RF	0.9008***	0.1330	6.7733	0.0000
SMB	0.2337	0.1510	1.5472	0.1274
HML	0.2739*	0.1522	1.7996	0.0773
R Square	0.4582			
F	15.7833***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Similar to Lilienfeld-Toal and Ruenzi's study in the U.S. stock market, I find that a strategy of going long in firms with a high level of CEO ownership during the period January 2003 to December 2014 produce abnormal returns. More specifically, firms with CEO ownership greater than 10% produce higher annual abnormal returns than the portfolio with CEO ownership greater than or equal to 5% but less than or equal to 10% (4.8% vs. 3.7%). The stronger result suggests that the greater the CEO is invested in the company, the more likelihood he will add value to the company as opposed to building empires or tunneling resources from the firm. The market does not correctly price the incentive effects of managerial ownership, which results in abnormal returns. When looking at the top 10% all of firms according to CEO ownership, I also discover strong significant results. This further strengthens the argument that there is an alignment of interest when a CEO voluntarily holds a large portion of outstanding shares of the company.

A number of studies have confirmed the importance of good corporate governance on firm performance. The Thai IOD rankings are based on five OECD principles: (1) rights of shareholders, (2) equitable treatment of shareholder, (3) role

of stakeholders, (4) disclosure and transparency, and (5) responsibilities of the board. This makes it a good measure in distinguishing firms with strong governance from firms with poor governance. After running the long-only portfolios based on IOD ranking, I find that corporate governance does matter as the portfolio containing all firms with a ranking of 3-5 produce positive abnormal returns (2.6% p.a.) while the portfolio with a ranking of less than 3 produces large negative abnormal returns (-13.4% p.a.) over the period January 2008 to December 2014. This reaffirms the notion that public information regarding strong vs. weak governance firms is not always priced in right away, leading to abnormal returns.

My last finding is that adding the element of significant CEO ownership can help mitigate the negative effects of weak governance on returns. This is evident when I examine my long-only portfolio consisting of firms with greater than 10% ownership and an IOD ranking less than 3. The results show negative returns of 3.2% p.a. While the result is not statistically significant, it essentially equates to a return of 0. This is still a substantial improvement from the negative abnormal return of 13.4% p.a. of the benchmark portfolio for weak governance (all firms with IOD ranking less than 3). This suggests that the market does not correctly price the incentive effect of CEO ownership on a firm's returns. That is, firms where the CEO has a high level of discretion through his ownership rights, which is considered bad for minority stakeholders and an indicator of weak governance, can actually be good for the firm in terms adding value, improving performance, and in turn generating better returns.

### 3. Robustness Test

#### *Limits of Arbitrage*

While one of the possible explanations for abnormal returns is that the market is inefficient and unable to fully price the incentive effect of ownership, it may actually be that investors are well aware of the abnormal returns that can be gained but are prevented from taking profits due to severe limits of arbitrage. One of these limits of arbitrage is trading cost. Though the fraction of CEO ownership does not see much change over the years in the firms in my sample, I test an alternative buy and hold strategy regardless. Table 11 shows the results for a passive buy and hold strategy for the portfolio containing firms with CEO ownership greater than 10%. Monthly alpha is economically large at 0.88% and significant at the 10% level. Table 12 displays the results using the same strategy but for the portfolio containing the top 10% of all firms according to CEO ownership. Once again, monthly alpha is economically large at 0.99% and significant at the 1% level. Compared to the main results in the study, a buy and hold long-only strategy produces even higher abnormal returns than the main results that requires annual rebalancing. Since a simple low-cost strategy can earn substantial returns, it is highly unlikely that severe limits of arbitrage, at least in regards to trading costs, can be the reason for abnormal returns. This also provides further support for the positive effect of CEO ownership on stock returns.



**Table 11** Buy and Hold Portfolio – CEO Ownership > 10%

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO Ownership greater than 10%. I report buy and hold returns for a portfolio that invests in high managerial ownership firms once at the beginning of the sample period and holds these firms until the end of the sample period. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.8807*	0.4982	1.7679	0.0814
Market-RF	1.1762***	0.0957	12.2878	0.0000
SMB	-0.0151	0.0717	-0.2113	0.8333
HML	0.3726***	0.0730	5.1053	0.0000
R Square	0.6852			
F	50.7810***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

**Table 12** Buy and Hold Portfolio – CEO Ownership Top 10%

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing the top 10% of all firms based on CEO ownership. I report buy and hold returns for a portfolio that invests in high managerial ownership firms once at the beginning of the sample period and holds these firms until the end of the sample period. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.9940***	0.3113	3.1930	0.0019
Market-RF	0.6010***	0.0635	9.4697	0.0000
SMB	-0.0658	0.0607	-1.0851	0.2804
HML	0.3173***	0.0660	4.8061	0.0000
R Square	0.4697			
F	30.1194***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

### *Temporal Stability*

Due to some data limitations, there are constraints on how I can test for stability over time. Nevertheless, I check for temporal stability of the main results by splitting the sample years into two halves (early and late). Table 13 presents the results for buying into firms with CEO ownership greater than 10% in the early half (2005-2009). Monthly alpha is 0.50% and significant at the 10% level. Results for the late half (2010-2014) are shown in Table 14. Monthly alpha is 0.23% but this result is insignificant. Table 15 and 16 display the same early and late half results but for

buying firms in the top 10% according to CEO ownership. The early half delivers monthly alpha of 0.53%, which is significant at the 5% level. Meanwhile, the late half delivers monthly alpha of 0.13% but this result is also insignificant. Overall, I find that alphas, or abnormal return, are consistently positive across all time periods. The results tend to point to the early years as producing large, significant alphas. The results become insignificant in the late half. However, this could be attributed to the short sample period. When we split the entire sample coverage in half, only five years of data are left.

**Table 13** Early Half – CEO Ownership > 10%

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO Ownership greater than 10%. The sample is split into two equally long subperiods (early and late). Monthly alpha and factor loadings are presented for the early half (2005-2009).

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.5020*	0.2676	1.8759	0.0670
Market-RF	0.9194***	0.0547	16.7993	0.0000
SMB	-0.0892	0.0701	-1.2717	0.2099
HML	0.3597***	0.0589	6.1051	0.0000
R Square	0.8736			
F	105.9432***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

**Table 14** Late Half – CEO Ownership > 10%

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO Ownership greater than 10%. The sample is split into two equally long subperiods (early and late). Monthly alpha and factor loadings are presented for the late half (2010-2014).

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.22680	0.3633	0.6241	0.5356
Market-RF	1.1422***	0.0769	14.8497	0.0000
SMB	0.0346	0.0552	0.6264	0.5341
HML	0.5679***	0.0662	8.5805	0.0000
R Square	0.8316			
F	75.7344***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

**Table 15** Early Half – CEO Ownership Top 10%

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing the top 10% of all firms based on CEO ownership. The sample is split into two equally long subperiods (early and late). Monthly alpha and factor loadings are presented for the early half (2005-2009).

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.5336**	0.2611	2.0438	0.0467
Market-RF	0.3777***	0.0537	7.0318	0.0000
SMB	-0.0330	0.0571	-0.5769	0.5668
HML	0.2634***	0.0568	4.6363	0.0000
R Square	0.5343			
F	17.5926***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

**Table 16** Late Half – CEO Ownership Top 10%

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing the top 10% of all firms based on CEO ownership. The sample is split into two equally long subperiods (early and late). Monthly alpha and factor loadings are presented for the late half (2010-2014).

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.1319	0.3216	0.4100	0.6838
Market-RF	1.1427***	0.0686	16.6606	0.0000
SMB	0.0134	0.0434	0.3089	0.7589
HML	0.5516***	0.0524	10.5276	0.0000
R Square	0.8684			
F	96.7664***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

### *Long-Short Portfolios*

I examine long-short portfolios to determine if the underperformance of no ownership firms contributes to the abnormal returns seen in the main results. Table 17 contains the results of a portfolio going long in firms with CEO ownership greater than 10% and shorting firms with no ownership. Monthly alpha is economically large at 0.61% and significant at the 1% level. Table 18 contains the results of a portfolio going long in firms in the top 10% and shorting firms in the bottom 10% according to CEO ownership. Monthly alphas are even larger at 0.98% and significant at the 10%

level. The results from these two portfolios mirror the main results from the long-only portfolio in that alphas are positive. However, alphas are about 30-50 basis points higher than the long-only portfolios. This means that firms with low ownership underperform during the sample period and contribute to the higher alphas in the long-short portfolios.

**Table 17** Long-Short Portfolio – [CEO Ownership > 10% - 0% CEO Ownership]

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted long-short portfolio. The long side contains firms with CEO Ownership greater than 10%. The short side includes firms with zero CEO ownership. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.6097***	0.2154	2.8310	0.0057
Market-RF	-0.0110	0.0361	-0.3040	0.7618
SMB	-0.0185	0.0455	-0.4071	0.6849
HML	0.4739***	0.0514	9.2251	0.0000
R Square	0.5074			
F	32.6137***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

**Table 18** Long-Short Portfolio – [CEO Ownership Top 10% - CEO Ownership Bottom 10%]

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted long-short portfolio. The long side contains containing the top 10% of all firms based on CEO ownership. The short side includes the bottom 10% of all firms based on CEO ownership. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.9750*	0.5272	1.8495	0.0672
Market-RF	-0.3308***	0.0852	-3.8828	0.0002
SMB	0.0338	0.1156	0.2926	0.7704
HML	0.1629	0.1140	1.4289	0.1560
R Square	0.1655			
F	6.8737***			0.0003

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

### *Managerial Discretion*

Managerial discretion is a crucial aspect that influences how effective a CEO can carry out his duties to add value to the firm. The amount of leeway a manager has allows him to make the necessary investments, takeovers, mergers, and cost reductions to bring about greater value and thus justify higher stock prices. In order to determine if firms with high managerial discretion can produce abnormal returns, I define cases where the CEO is expected to matter most and exert the most influence on the company. Johnson, Magee, Nagarajan, and Newman (1985) discover that executives matter most in firms with strong past sales growth. Given such, I take the portfolio containing firms with CEO ownership greater than 10% and an IOD ranking of less than 3 and select only those firms with above-median value of past three-year sales growth. Results for this portfolio are shown in Table 19. The portfolio earns a monthly alpha of 0.34%. Alpha is not statistically significant, which signifies zero abnormal returns. This is still a stark contrast to the negative abnormal return of the portfolio containing all firms with IOD ranking less than 3. Nevertheless, past sales growth may not be the most suitable proxy for managerial discretion while the limitation in this portfolio, which may be the reason alpha is not significant, is that sorting out firms with below-median sales growth eliminates half the data.

**Table 19** Long-Only Portfolio – CEO Ownership > 10%, IOD ranking < 3, High Sales Growth

This table presents the estimation results of the Fama French Three-Factor model for the value-weighted portfolio containing firms with CEO Ownership greater than 10%, IOD ranking less than 3, and above-median sales growth. Monthly alpha and factor loadings are presented.

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha (%)	0.3376	0.3260	1.0356	0.3049
Market-RF	1.2131***	0.0662	18.3347	0.0000
SMB	0.1569**	0.0645	2.4304	0.0184
HML	0.4168***	0.0650	6.4142	0.0000
R Square	0.8655			
F	118.0196***			0.0000

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.



## CHAPTER V

### CONCLUSION

In emerging markets, corporate governance has been a growing concern. Many researchers have provided empirical evidence that good corporate governance measured by various proxies have led to better firm performance. Meanwhile, significant managerial ownership is often interpreted as a sign of weak governance as more voting rights and control are in the hands of a single individual. In this study, I examine the relationship between CEO ownership and stock market performance as CEOs generally have the most say in regards to the operation of the firm. I find that using a trading strategy that involves going long in firms with high CEO ownership generates large positive abnormal returns. Furthermore, I take public information from the Thai Institute of Directors Report to test a strategy of going long in firms that are considered to have strong governance (IOD 3-5) and discover that this strategy results in positive, albeit small, abnormal returns. The opposite holds true for the strategy of going long in firms that are considered to have weak governance (IOD less than 3) as this portfolio delivers negative abnormal returns. When I add the element of CEO ownership greater than 10% to these firms with weak governance, the returns are statistically insignificant but economically meaningful as alpha is less negative. This ultimately indicates zero abnormal returns, which in magnitude is higher than negative abnormal returns. I conduct several robustness tests to test the stability of the main results. I implement a passive buy and hold strategy and find that limits of arbitrage do not explain the abnormal returns. I check for temporal stability by comparing two equal subperiods and find positive alphas across all time periods.

Long-short portfolios provide insights on how the underperformance of low ownership firms may contribute to higher alphas. Finally, high managerial discretion is shown to help improve returns in magnitude for a low IOD ranked company with significant CEO ownership. It is likely that with the right incentives and enough discretion, CEOs make value-increasing decisions to produce abnormal returns as compensation for foregoing diversification.

Further research may be done as more data becomes available to test the extent of how much CEO ownership helps the stock performance of firms considered to have weak governance. Significant results may come with more data. At the very least, I show that there is change from negative abnormal returns to zero and that CEO ownership does play a role in asset pricing in an emerging market such as Thailand.



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## APPENDIX

### Appendix A. Variable Descriptions

The following lists the variables described in the summary statistics section of the paper:

*Asset growth* - The growth rate of the total assets of a firm over the past year from Datastream.

*Capital Expenditure* - Capital expenditure scaled by Total Assets, both taken from Datastream.

*CEO Ownership* – The fraction of outstanding shares owned by the CEO, or highest managing executive, in percent.

*CGS* - Cost of goods sold divided by sales, both taken from Datastream.

*Labor Productivity* - The natural logarithm of sales divided by the number of employees taken from Datastream.

*logBM* - The natural logarithm of the book-to-market ratio.

*logSize* - The natural logarithm of the firm's market capitalization in THB from Datastream.

*ROA* - Return on assets from Datastream.

*ROE* - Return on equity from Datastream.

*Sales growth* - The sales growth of a firm over the past three years from Datastream.

*SGA* - Selling, administrative, and general expenses divided by current assets, taken from Datastream.

*Yield* - The dividend yield of a firm calculated as the ratio of total dividends to total market capitalization from Datastream.

## REFERENCES



**APPENDIX**



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## VITA

Alex Manoonpol was born on March 8, 1990 in New York, United States of America. At the undergraduate level, he graduated from Boston College with a Bachelor's degree in Economics and a minor in Mathematics in May 2012. After completing the bachelor's degree, he decided to further his studies in the Master of Science in Finance Program at Chulalongkorn University as a full-time student in June 2013. He is also currently employed as an Investment Analyst at Templeton Asset Management Ltd. in their Bangkok office.



