EFFECTS OF RISK TAKING AND CORPORATE GOVERNANCE ON RELATIONSHIP BETWEEN CEO POWER AND COST OF EQUITY

DUANGNAPA SUKHAHUTA

DOCTOR OF PHILOSOPHY

IN BUSINESS ADMINISTRATION

GRADUATE SCHOOL CHIANG MAI UNIVERSITY JULY 2016

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A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION

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To My Lovely Dad, Mom, Sister and Brother "Arayaasanee" UNIVUS Additional of the second secon

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ACKNOWLEDGEMENTS

This dissertation will have never been achieved if I do not receive help along the way from several people. First of all, I would like to thank all my supervisors for their time spent reading my papers and meeting for the past several years. Many thanks go to my main supervisor, Associate Professor Dr. Ravi Lonkani, who has been paid attention and provided valuable and insightful advice to me. In addition, I would like to sincerely thank my Co-Supervisors, Assistant Professor Dr. Chaiwuth Tangsomchai for his recommendation and his cheerful support. My difficult day has been passed with his support. Thank you again. Special thanks also go another co-supervisor, Assistant Professor Dr. Jomjai Sampet, for their gorgeous guidance. In particular I am grateful to heads of Doctor of Philosophy Program during my studies including Associate Professor Dr. Siriwut Buranapin, Associate Professor Dr. Chirawan Chaisuwan, Dr. Naruemol Kimphakorn and Associate Professor Dr. Patchara Tantiprapha. I also wish to acknowledge and thank to Professor Dr. Patriya Tansuhaj for her personal support and encouragement.

In addition I would also like to express my gratitude to Maejo University, for offering me a scholarship for this study. The most importantly, I would like to thank my wonderful classmates and other Ph.D. candidate friends that share all knowledge and happiness live throughout many years in the doctoral program.

Lastly, I am very thankful to my husband for everything especially for his endless love and support. I would like to thank my family, and especially my sisters and brothers for their supports and encourages me all the time. I am deeply indebted to my parents for their unconditional love and support since I was born.

Duangnapa Sukhahuta

หัวข้อดุษฎีนิพนธ์	ผลกระทบจากความกล้ำเสี่ยงและธรรมาภิว	บาลของบริษัทต่อความสัมพันธ์	
	ระหว่าง อำนาจของประธานเจ้าหน้าที่บริหารและต้นทุนเงินทุนส่วนขอ		
	เจ้าของ		
ผู้เขียน	นางควงนภา สุขะหุต		
ปริญญา	ปรัชญาคุษฎีบัณฑิต (บริหารธุรกิจ)		
คณะกรรมการที่ปรึกษา	รองศาสตราจารย์ คร.รวี ลงกานี	อาจารย์ที่ปรึกษาหลัก	
	ผู้ช่วยศาสตราจารย์ คร.ชัยวุฒิ ตั้งสมชัย	อาจารย์ที่ปรึกษาร่วม	
	ผู้ช่วยศาสตราจารย์ คร.จอมใจ แซมเพชร	อาจารย์ที่ปรึกษาร่วม	

บทคัดย่อ

งานวิจัยนี้มีจุดมุ่งหมายเพื่อศึกษาความสัมพันธ์ทางตรงและทางอ้อมระหว่างอำนาจของประธาน เจ้าหน้าที่บริหารและต้นทุนเงินทุนส่วนของเจ้าของ โดยการศึกษาความสัมพันธ์ทางอ้อม งานวิจัยนี้ใช้ ความกล้าเสี่ยงของอำนาจของประธานเจ้าหน้าที่บริหาร เป็นตัวกลางระหว่างความสัมพันธ์ทางตรง นอกจากนี้งานวิจัยนี้ทำการการตรวจสอบผลกระทบจากธรรมาภิบาล (Corporate Governance) ของ บริษัทต่อความสัมพันธ์ที่เกิดขึ้นจากความสัมพันธ์ทางตรง โดยทฤษฎีตัวแทน (Agent Theory) และ วิธีการอำนาจของผู้บริหาร (The Managerial Power Approach) อธิบายว่าผู้บริหารใช้อำนาจที่มีอยู่ทำ ให้เกิดผลประโยชน์ส่วนตัวต่อตนเองมาก เป็นผลทำให้ต้นทุนตัวแทน (Agency Costs) มากขึ้น ดังนั้น งานวิจัยนี้มีสมมุติฐานว่าต้นทุนเงินทุนส่วนของเจ้าของที่สูงขึ้นมีความสัมพันธ์กับอำนาจของประธาน เจ้าหน้าที่บริหารที่ทำให้เกิดผลประโยชน์ส่วนตัว

นอกจากนี้หลักฐานเชิงประจักษ์จากงานวิจัยในอดีตสนับสนุนว่าการกำกับดูแลกิจการเป็นกลไกที่ สามารถลดต้นทุนตัวแทน ของบริษัทและสนับสนุนการประเมินมูลค่ากิจการ บริษัท ดังนั้นบริษัทที่มี ระดับธรรมาภิบาลที่ต่างกันจะมีผลกระทบต่อความสัมพันธ์ระหว่างอำนาจของประธานเจ้าหน้าที่ บริหารและต้นทุนเงินทุนส่วนของเจ้าของ สำหรับการทดสอบความสัมพันธ์ทางอ้อมระหว่าง ความสัมพันธ์ของอำนาจของประธานเจ้าหน้าที่บริหารและต้นทุนเงินทุนส่วนของเจ้าของ การศึกษา ครั้งนี้ใช้ความกล้าเสี่ยงของอำนาจของประธานเจ้าหน้าที่บริหาร เป็นตัวกลางระหว่างความสัมพันธ์ ของอำนาจของประธานเจ้าหน้าที่บริหารและต้นทุนเงินทุนส่วนของเจ้าของ การศึกษา วรรณกรรมที่เกี่ยวข้องกับการศึกษาครั้งนี้ พบว่าอำนาจของประธานเจ้าหน้าที่บริหารมีผลกระทบ โดยตรงต่อกวามกล้าเสี่ยง นอกจากนี้กวามเสี่ยงเป็นปัจจัยหนึ่งที่ทำให้ต้นทุนเงินทุนส่วนของเจ้าของมี ก่าแตกต่างกัน ดังนั้นงานวิจัยนี้จึงใช้กวามกล้าเสี่ยงเป็นตัวกลางในการทดสอบกวามสัมพันธ์ทางอ้อม

การทบทวน วรรณกรรม ที่เกี่ยวข้อง แสดงให้เห็นว่า การศึกษาครั้งนี้ เป็นงานวิจัยงานแรกที่จะ ดรวจสอบความสัมพันธ์ทางตรงระหว่างอำนาจของประธานเจ้าหน้าที่บริหารและต้นทุนเงินทุนส่วน ของเจ้าของ และผลกระทบของธรรมภิบาลต่อความสัมพันธ์โดยตรงนี้ และงานวิจัยนี้เป็นงานแรกที่ ทำงานตรวจสอบผลกระทบทางอ้อมระหว่างอำนาจของประธานเจ้าหน้าที่บริหารและต้นทุนเงินทุน ส่วนของเจ้าของโดยใช้ความกล้าเสี่ยงเป็นตัวกลางระหว่างความสัมพันธ์ทางตรง ผลการศึกษา นี้ ซึ่ให้เห็น ว่าอำนาจของประธานเจ้าหน้าที่บริหารมีผลโดยตรงต่อ ต้นทุนของเงินทุนส่วนของเจ้าของ และ บริษัทที่มีระดับธรรมภิบาลแตกต่างกันมีผลกระทบต่อความสัมพันธ์นี้ นอกจากนั้ยังพบว่ามี ความสัมพันธ์ทางอ้อมระหว่างอำนาจของประธานเจ้าหน้าที่บริหารมีผลโดยตรงต่อ ต้นทุนของเงินทุน ส่วน ของผู้ถือหุ้นสืบเนื่องมาจากความกล้าเสี่ยง ดังนั้นประโยชน์เชิงประจักษ์ที่ได้จากงานวิจัยนี้ ทำให้เห็นมุมมองที่กว้างขึ้นและแตกต่างจากงานวิจัยที่ผ่านมา ที่พบว่าปัจจัยทางการเงินที่มี ผลโดยตรงต่อต้นทุนเงินทุนส่วนของเจ้าของ สำหรับงานวิจัยนี้อำนาจของประธานเจ้าหน้าที่ บริหารก็มีผลโดยตรงต่อต้นทุนเงินทุนส่วนของเจ้าของ

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WG MAI

Dissertation Title	Effects of Risk Taking and Corporate Governance on	
	Relationship Between CEO Power and Cost of Equity	
Author	Mrs.Duangnapa Sukhahuta	
Degree	Doctor of Philosophy (Business Administration)	
Advisory Committee	Associate Professor Dr.Ravi Lonkani	Advisor
	Assistant Professor Dr.Chaiwuth Tangsomchai	Co-advisor
	Assistant Professor Dr.Jomjai Sampet	Co-advisor

ABSTRACT

The aim of this research is to investigate the direct and indirect relationship between CEO power and cost of equity, and to examine the effect of risk taking and corporate governance (CG) on this relationship. This study is based on the agency theory and the managerial power approach. Specifically, the managerial power approach posits that the most powerful CEOs tend to enjoy greater private benefits, such as luxtually office space. The agency theory and the managerial power approach imply that CEO power leads to a high agency cost. Therefore, in this dissertation, we hypothesizes that the higher the cost of equity, the greater CEO power. In addition, there are some empirical supports for corporate governance as a set of mechanisms that can reduce the agency cost and increase the firm valuation. Furthermore, the level of corporate governance quality is likely to have a moderating effect on the relationship between CEO power and cost of equity. In addition, this study tests the mediating effect of risk taking. Previous studies identify that CEO power has a direct effect on risk taking. Moreover, risk is a factor that has been used to determine the cost of equity. Thus, this work also includes an empirical investigate the indirect relationship between CEO power and cost of equity. Risk taking is treated as a mediator for testing the indirect relationship.

A review of relevant literature indicates that this study is among the first to examine empirically the direct relationship between CEO power and cost of equity in two ways: 1) to test the corporate governance effect (moderating effect) of the direct relationship between CEO power and cost of equity, and 2) to explore the risk taking effect (mediating effect) on the relationship of CEO power and cost of equity. Our empirical results show that CEO power indeed affects directly the cost of equity. Moreover, companies with greater CEO power experience a higher cost of equity. In addition, using corporate governance score, the level of corporate governance firms' is found to weaken the relationship between CEO power and cost of equity. Finally, we found empirical supports for partial mediating effect of risk taking on the relationship between CEO power and the cost of equity. Thus, the most significant contribution of our research is that this research give another perspective factors relate to cost of equity. Cost of equity is not only determined by financial factors but also by CEO power and the risk taking.



Key words: CEO power, cost of equity, corporate governance, risk taking

CONTENTS

Acknow	vledgements	d
Abstrac	t in Thai	e
Abstrac	t in English	g
List of 7	Tables	1
List of I	Figures	m
Stateme	ent of Originality in Thai	n
Stateme	ent of Originality in English	0
Chapter	1 Introduction	1
1.1	Research Rationale and Motivation	1
1.2	Research Questions	9
1.3	Objectives and Contribution of Research	9
1.4	Overview of Remaining Chapters	12
Chapter	2 Literature Review and Hypothesis Development	13
2.1	Power and CEO Power	13
2.1.1	Power by Chiang Mai University	13
2.1.2	CEO Power rights reserved	15
2.2	Risk	20
2.3	Corporate Governance (CG)	21
2.4	Cost of Equity Capital	24
2.5	Agency Theory	26
2.6	Approach/Inhibition Theory	28
2.7	CEO Power and Cost of Equity	28

2.8	CEO Power, Corporate Governance and Cost of Equity	30
2.9	CEO Power, Risk-taking, and Cost of Equity	34
2.10	Proposed Conceptual Model	39
Chapter	3 Research Methods	4(
2 1	Mangurament of Variables	11
5.1 2.1.1	Measurement of Variables	4
3.1.1 2.1.2	Measuring Cost of Equity	4
3.1.2	Measuring CEO Power	4.
3.1.2.1	Structural Power	4.
3.1.2.2	Expert Power	4:
3.1.2.3	Ownership Power	4
3.1.2.4	Prestige Power	4
3.1.2.5	CEO Power Index	4
3.1.3	Measuring Risk-taking	5
3.1.4	Measuring Corporate Governance	5
3.1.5	Measuring Cost of debt	5
3.2	Corporate Governance Effect	5
3.3	Risk Taking Effect	5
3.4	Regression Model	6
3.5	Data Collection and Sample	6
3.6	Analysis Method	6
Chapter	4 Results กรีบหาวิทยาลัยเชียงใหม	6
4.1	Descriptive Statistics by Chiang Mai University	6
4.2	Model 1: Main Effect of Regression Analysis	7
4.3	Model 2: Effect of Corporate Governance	7
4.4	Model 3: Role of Risk-taking as an Intervening Variable	7
4.5	Robustness Check	8
4.6	Additional Test: CEO Power and the Cost of Debt	8
Chapter	5 Discussion and Conclusion	8
		0
5.1	Summary and Discussion of Research Findings	8

5.2	Limitations of the Study	91
5.3	Future Research	91
References		92
Apper	ndix	109

Curriculum Vitae

111



LIST OF TABLES

Table 3.1	Definitions of Proxies that Measure CEO Power of	
	Four Dimensions and the CEO Power Index	51
Table 3.2	CG Scoring and Symbols	57
Table 3.3	Predicted Sign of the Control Variables of Each Mode	62
Table 4.1	CEO Power Variables	66
Table 4.2	CEO Power Index	68
Table 4.3	Descriptive Statistics	69
Table 4.4	Pearson Correlation Matrix of Variables	70
Table 4.5	Pooled Regression of CEO Power and the Cost of Equity	72
Table 4.6	Moderator Regression Analysis (MRA) using The CG score as	
	Corporate Governance (CG)	74
Table 4.7	Subgroup Analyses by CG score	76
Table 4.8	Moderator Regression Analysis (MRA) using Institutional Ownership	
	as Corporate Governance (CG)	77
Table 4.9	Correlation Matrix of Constructs	78
Table 4.10	Structural Model Results for the Mediation of	
	the Effect of CEO Power on Cost of Equity by Risk-taking	79
Table 4.11	Alternative Measurement of the Cost of Equity	83
Table 4.12	Descriptive Statistics of Variables	84
Table 4.13	Pooled Regression of CEO Power and the Cost of Debt	85

LIST OF FIGURES

Figure 1.1	A Contract Model	15
Figure 2.1	Moderator Model	32
Figure 2.2	Typology of Moderator Variable	33
Figure 2.3	Mediator Model	37
Figure 2.4	Alternative Intervening Models	38
Figure 2.5	Conceptual Framework of the Relationship between CEO Power and	
	Cost of Equity: the Effect of Risk taking and Corporate Governance	39
Figure 3.1	Diagram of Paths in the Mediator Model	60
Figure 4.1	CEO Power and the Cost of Equity: Low and High Corporate Governand	ce76



ข้อความแห่งการริเริ่ม

- 1) ศึกษาก่อนหน้านี้ ระบุ ว่ามีหลาย ปัจจัยเช่น ความสามารถในการก่อหนี้และการเปิดเผยข้อมูล มี ผลต่อ ต้นทุนเงินทุนส่วนของเจ้าของ แต่เป็นที่น่าสังเกต ว่าอำนาจของประธานเจ้าหน้าที่ บริหารอาจมีผลต่อ ต้นทุนเงินทุนส่วนของเจ้าของ การศึกษาครั้งนี้ เป็นการศึกษาแรก ที่จะ ตรวจสอบ ความสัมพันธ์ระหว่าง อำนาจของประธานเจ้าหน้าที่บริหารอาจมีผลต่อ ต้นทุน เงินทุนส่วนของเจ้าของและ การตรวจสอบ ผลกระทบของ ความเสี่ยง และ การกำกับดูแล กิจการ (CG) เกี่ยวกับความสัมพันธ์ นี้
- วิทยานิพนธ์ นี้เป็นลิขสิทธิ์ทางปัญญาของข้าพเจ้า ที่ข้าพเจ้าได้ดำเนินการเอง ภายใต้คำแนะนำ จากคณะกรรมการที่ปรึกษา



STATEMENT OF ORIGINALITY

- 1. Previous studies identify that many factors such as leverage and disclosure level determine the cost of equity. It is noteworthy that on one hand, CEOs' decision-making power may dominate the cost of equity. This study is the first to investigate the relationship between CEO power and the cost of equity and to examine the effect of risk taking and corporate governance (CG) on this relationship.
- 2. I declare that the intellectual content of this dissertation is the product of my original work which is performed under the guidance and advice of my faculty advisors.



CHAPTER 1

Introduction

1.1 Research Rationale and Motivation

Firms cannot operate without having sufficient funds. They must have funds for their operations, investments, and expansions of business units. They obtain funds through three primary sources; borrowing, issuing stock and retained earnings. External sources of funds are debt, preferred stocks, and common stocks. Internal sources of finance are funds found inside the business such as retained earnings. Retained earnings are the net income that firms have retained and not paid out. All external sources of funds are attached with costs relevant to their sources. Even though firms use the same type of capital, the cost of funds also varies from one firm to another and at different times.

The cost of a fund comprises of the cost of debt and the cost of equity. When lenders provide capital, they require interest to be paid in return from borrowing. The interest paid to them is known as "cost of debt". On the other hand, when shareholders provide capital, they receive dividends, capital gains, and residual claims for cash flow when firms are in liquidation state. Return on investment received by shareholders is the "cost of equity" from a firm's perspective.

Cost of equity is a key concept in financial decision making. It is used in various ways such as for determining whether to accept or reject a project, or it can be used as a key factor on capital budgeting analysis. The management objective is to maximize the value of the firm. Equivalently, the cost of equity raised is to be minimized. Previously, most Thai firms relied on borrowing money mainly from financial institutions such as banks. There is another choice for Thai companies to get funds through the stock market. In Thailand, two stock exchange markets are now established which are the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (mai). These markets offer alternative ways for medium and large firms to get funds. If companies are

listed in these stocks exchange markets, they can get funds directly from investors by selling shares such as preferred shares and ordinary shares.

There are many theories that explain capital structure such as the Modigliani-Miller theory (M&M) (1958), the static tradeoff theory and the pecking order theory. The Modigliani-Miller theory hypothesized that in a perfect capital market, the market value of a firm is irrelevant to a corporate finance decision. However, the static tradeoff theory and the pecking order theory suggest that, in a world of uncertainty, there are some factors that affect the cost of capital. The static tradeoff theory advises that firms prefer to use debt financing because of the tax benefit. The pecking order theory suggests that firms prefer to use internal finance more than external finance and there is an information asymmetry between firm's insider and investors. In summary, in a world of uncertainty, the cost of debt financing and equity financing are dependent on several factors. The capital asset pricing model (CAPM) uses systematic risk (Beta) determines the cost of equity (Sharpe, 1964 and Lintner, 1965). Akerlof (1970) suggests that information asymmetry is another factor determining the cost of equity. This information asymmetry is referred as the lemon problem.

Previous academic research suggests that the cost of equity will be high or low depending on several variables such as leverage and taxes (Dhaliwal et al., 2006), disclosure (Botosan, 1997; Richardson and Welker, 2001; Cheng et al., 2006; Eaton et al., 2007; Souissi and Khilf , 2012; Lopes and Alencar, 2010; Kim and Shi, 2011; Li and Yang, 2011; Dhaliwal et al., 2014) and information asymmetry (He et al., 2013; Reverte, 2009). Dhaliwal et al., (2006) examine the effect of leverage and corporate taxes on the cost of equity. They find that when leverage increases, the cost of equity is also increased. Additionally, they find that corporate tax benefits from debts can reduce the equity risk premium, thus the cost of equity is reduced.

Another factor that determines the cost of equity is disclosure level. There are two explanations for the effect of disclosure on the cost of equity (Botosan, 1997). First, the greater the disclosure level, the higher the market liquidity, thus, the cost of equity is reduced. Second, the greater the disclosure level, the lower the shareholders' estimation of risks, thus, the risk premium required by the investor is decreased. As a result, the cost of equity is reduced. Botosan (1997) constructs the disclosure index, based on the amount

of voluntary disclosure provided in the annual reports, to study the effect of voluntary disclosure on the cost of equity. Botosan (1997) finds that the greater disclosure level of companies which have few analysts following, the lower the cost of equity is. However, Botosan (1997) does not find the effect of the disclosure level of firms that have many analysts following on the cost of equity. It is because of the limitation of the disclosure index using only information provided in the annual reports (Botosan, 1997). Other studies support the link between disclosure and the cost of equity. For example, Cheng et al. (2006) find that the higher levels of financial transparency and strength of shareholder rights that the firm provide, the lower costs of equity they enjoy. Dhaliwal et al. (2014) also find that corporate social responsibility (CSR) disclosure reduces firms' cost of equity.

As already mentioned, many factors such as leverage and disclosure level determine the cost of equity. It is noteworthy that, these factors that dominate the cost of equity are also related to the CEOs' decision-making power. For example, CEOs make the decision on the choice of capital structure, thus, how much money to borrow from debtholders is related to the CEOs' decision power. Chintrakarn et al. (2014) find that CEO power affects capital structure decisions. Additionally, they find that when CEO power is high, CEOs prefer the sub-optimal leverage and avoid high debt. However, weak CEOs do not intend to avoid leverage (Chintrakarn et al., 2014). Muttakin et al. (2016) examine the relationship between board capital, CEO power and the level of corporate social responsibility (CSR) disclosures. Usually, the CSR disclosures of firms are voluntary in nature. They find a positive relationship between board capital and CSR disclosure levels. However, they find that CEO power is negatively associated with CSR disclosure level relate to CEOs' decision-making power. Thus, it implies that CEO power should relate to the cost of equity.

The role of CEOs is to operate the business on behalf of the shareholders, so CEOs have the power to manage both intangible resources and tangible resources of firms. Pfeffer (1992) concludes that CEO power is an important variable to study in a business context because a powerful CEO can influence the firm's operation and strategic management, thus influencing change throughout the organization. Finkelstein (1992)

suggests that prestige and expert experience are a source of CEO power. CEO power may be well recognized in business because of CEOs' prestige and expert experience. Intuitively, investors prefer to invest in companies that have an expert CEO and are experiencing good times, so they can expect a good return on the investment. Thus, investors are likely to lend funds to these companies. Conversely, if CEOs use their power to maximize their own wealth instead of shareholders' wealth, the agency cost will be amplified (Ashbaugh-Skaife et al., 2009). As a result, shareholders will require a higher risk premium for their investments. Reviewing relevant literature, it remains an open question whether CEO power influences firms' cost of equity. Thus, this study attempts to explore the direct relationship between CEO power and the cost of equity.

To understand the role of CEO power, it is necessary to know the meaning of CEO power in the context of firms' management. According to Banning (1996), CEO power is an important construct effect to an organization, because it can influence the firm's decision process and initiate strategic organizational change. Chassagnon (2012) views power as an efficient resource because it allocates scarce resources that are economically important. Based on the above rationale, the power of CEOs is an interesting topic in business research. When referring to CEO power, it is not only the CEO position that determines the power, but also CEOs' unique skills, integrity, and contacts. Finkelstein (1992) identifies four types of executive power: structural power, ownership power, expert power and prestige power. This study defines CEO power as the ability of a CEO to influence the person(s) and institutions among the contractual relationship despite their resistance, to allocate the organization resources, and to accomplish her or his own goals.

CEOs have more information than shareholders because they are in the position to manage the day-to day operation of the business and to choose a strategic direction. With this prominent position in the company, CEOs have the power to force other agents (i.e., the employees) to follow their lead. Based on the agency theory (Jensen and Meckling, 1976), CEOs are the agents of the shareholders (principals) and the duty of the agents is to maximize shareholders' wealth. Also, the separation of ownership and control has left owners relatively losing decision-making power because they delegate the power to CEOs. The decisions that CEOs make include the allocation of the firm's resources, operational decisions and strategic decisions. Since, shareholders cannot directly observe

the CEOs' actions, CEOs may use their power to extract formal pay and private benefits from the firm. These actions can potentially create moral hazard problems (Ashbaugh et al., 2004).

This study proposes that the level of CEO power can affect the cost of equity because CEOs' power maximizes CEOs' own interest. The private benefits taken by CEOs are the agency cost to the firm. When CEO power is effective and they exert their will, shareholders' risk-premium potentially increases and as a result the cost of equity will be higher. Therefore, this study examines the relationship between CEO power and the cost of equity. From our literature reviews, the link between the degree of CEO power and the cost of equity is rarely mentioned. Both CEO power and the cost of equity are important constructs to the firm. CEO power can dominate the company's direction. Therefore, CEO power is related to the company's objectives that maximize shareholder's wealth. The cost of equity is an interesting topic because it relates to the requirement of the shareholders' return.

While the agency theory suggests that there are conflicts of interest between managers and shareholders, scholars suggest that corporate governance is a mechanism used to mitigate agency cost by reducing information asymmetry (Chen et al., 2009; Ashbaugh et al., 2004; Reverte, 2009). Reverte (2009, p.134) says that "corporate governance represents a set of mechanisms that are intended to reduce agency risk that results from information asymmetries." Moreover, empirical studies support that corporate governance matters to the wealth of CEOs and shareholders (Gompers et al., 2003; Chen et al., 2009). An important function of corporate governance is to protect shareholders against expropriation by CEOs. That is "corporate governance is a mechanism that is used to reduce agency costs; firms with better corporate governance should, therefore, have higher valuation" (Chen et al., 2009, p.273). Gompers et al. (2003) develop a governance index and show that a governance score is positively related to abnormal returns and fewer agency costs. Scholars suggest that corporate governance is used to reduce the agency cost and find that the higher the level of corporate governance, the lower the cost of equity (Botosan, 1997; Ashbaugh et al., 2004; Reverte, 2009). Therefore, corporate governance could be considered as a moderator in a linear model between CEO power and the cost of equity. Therefore, this study examines the potential

moderating role of the corporate governance mechanism to the relationship between CEO power and the cost of equity.

Baron and Kenny (1986, p.1174) define a moderator as "a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable." Thus, according to Baron and Kenny (1986), corporate governance is acting as a moderator that affects the relation between CEO power and the cost of equity.

There are two types of corporate governance proxy used in this study that are the Thai Institute of Directors (Thai IOD)'s governance score reported in the Corporate Governance Report (CGR) and institutional ownership.

In Thailand after the Asian financial crisis erupted in 1997, corporate governance grew attention. The Thai IOD was established in 1999 with a mission to develop and support company directors in their efforts to implement good corporate governance. The Thai IOD also issues the Corporate Governance Report (CGR) every year to serve companies' stakeholders. In Thailand, corporate governance has been established in line with developed countries. Five governance dimensions suggested by the Organization for Economic Cooperation and Development (OECD) and the Thai IOD are (1) the rights of shareholders, (2) the equitable treatment of shareholders, (3) the role of stakeholders, (4) the disclosure and transparency, and (5) the board responsibilities. Based on these dimensions, the Thai IOD has evaluated corporate governance of Thai listed companies every year since 2001 and reported the corporate governance score through the Corporate Governance Report of Thai Listed Companies (CGR). Recently, Panitantum (2015) finds a negative relation between corporate governance score and the cost of equity. Thai companies which have a good level in the annual corporate governance show a lower cost of equity (Panitantum, 2015). In addition, board of director is a mechanism to help strengthen corporate governance because its important role is to provide oversight of management performance and to protect benefits of the firms. Panitantum (2015) finds a negative relation between board size and the cost of equity.

The CGR is a report that presents the overall survey results of corporate governance practices of listed companies on the Stock Exchange of Thailand and the Market for Alternative Investment (mai). This CGR will be beneficial to investors to evaluate corporate governance of the companies. Thus, this study will test the relationship between the interaction effect of CEO power and the level of CGR of companies and the cost of equity.

Another corporate governance factor used in this study is the ownership structure. An ownership structure is a corporate governance mechanism that is used to monitor the CEOs taking private benefits. CEOs' activities are potentially constrained by numerous factors and institutional ownership is one factor that can influence the corporations that they manage. This paper uses institutional ownership to represent ownership structure. The role of institutional investors has become a significant component in financial markets. They have the potential to influence CEOs' activities both directly through their ownership and indirectly by trading their shares. Institutional investors as the owners of the firm, have certain rights such as the right to elect the board of directors and voting for their dissatisfaction. The role of a board of directors is the responsibility to monitor corporate managers and their performance. Thus, if institutional investors are dissatisfied with the firm's performance or the boards' activities, they can vote for their dissatisfaction or sell their shares. When large institutional investors sell their shares, this activity can be a price pressure on firms' stock (Helwege et al., 2012). In addition, the role of large institutional investors is to provide a credible mechanism. When they sell their shares, it will transmit information to other investors in the financial markets (Gillan and Starks, 2003). Thus, the main reason why institutional ownership is explored in this study is that it is an external control mechanism. Monitoring by institutional investors is an important governance mechanism and CEO power finds it difficult to interfere with this external control mechanism. This study will analyze the effects of institutional ownership as an external corporate governance mechanism of the relationship between CEO power and the cost of equity.

Finally, this paper investigates the relationship between CEO power and risk taking. To determine the cost of equity, previous studies generally focus on the financial risks. For example, Fama and French (1993) focus on the three main risk factors; beta, size, and book-to-market. Gebhardt et al., (2001) suggest that its forecasted long-term growth rate and book-to-market ratio determine a firm's implied cost of equity. Lately, operation risk has been referred and it usually concentrates on the effects of corporate governance. Francis et al. (2004) suggest poor quality reports create information risks to investors. For most investors, risk means the uncertainty of future outcomes or the probability of an adverse outcome (Reilly and Norton, 2006). According to the Capital Asset Pricing Model (CAPM), the primary factor that causes a different cost of equity to companies is the risk premium. The risk premium is the expected market return above the nominal riskfree rate (Reilly and Norton, 2006).

When CEOs decide to operate firms with their preference on risk taking to expect high profit, firms are exposed to operation risk. Risk taking is inherent in any CEO power when they make decisions, and firm's strategic direction is fundamental to CEOs' risk taking. Thus, CEO power affects their risk taking preference. CEO power may decide either taking or avoiding the risk. Risk taking preference of CEOs can cause uncertainty in returns for the firms. "There is little reason why someone would put their money at risk with the expectation of earning at lower return than expected from a no-risk option" (Reilly and Norton, 2006, p.6). Thus, investors will require more risk premium if CEOs take the higher risk project. As a result, CEO risk taking can determine the cost of equity. Since CEO power can cause risk taking preferences (Lewellyn et al., 2012; Cheikh, 2014; Pathan, 2009) and risk taking determines the cost of equity, risk taking should be an intervening variable to the relationship between CEO power and cost of equity. It will be more interesting if this study can find out how the intervene variable can explain the relationship between CEO power and cost of equity. Thus, this study investigates the mediating effect of risk taking on the relationship between CEO power and the cost of equity. Copyright[©] by Chiang Mai University

Previous studies have shown that CEO power is associated with risk taking. Pathan (2009) examines the relationship between CEO power and risk taking in the United States. His result suggests that there is a negative link between CEO power and risk taking. The reason behind this result is that CEOs are self-interested, risk averse and possess goals that diverge from those of shareholders (Jensen and Meckling, 1976). Although earlier studies in this area presumed that the powerful CEOs are unwilling to take risky projects, the empirical results are mixed. Based on the social psychological approach/inhibition theory of power developed by Keltner et al. (2003), the relationship

between CEO power and risk taking may be reversed. This theory states that power influences the behavioral approach system, which leads the powerful CEO to be riskier, focusing on the potential reward aspects while ignoring potential threats. This theory suggests that the more power the CEO has, the higher risk taking inferred. Lewellyn et al. (2012) study the risk taking of the Subprime Lending Industry in the US. They find that CEO power positively relates to excessive risk taking. They employ the approach theory of power to explain their results. When CEOs have power, they will focus on the y behavio. potential reward aspects of risky behavior and do not consider the possible threats (Lewellyn et al., 2012).

Research Questions 1.2

While reviewing the link between CEO power and the cost of equity, this study proposes that CEO power may relate to the cost of equity. In the absence of an answer in existing literature, this study investigates the first research question. What is the relationship between CEO power and the cost of equity? Since the corporate governance mechanism is widely used in organizations to reduce the agency cost, this study analyses how it affects the relationship between CEO power and the cost of equity. Thus, this study offers another research question. Is the impact of CEO power on the cost of equity less pronounced for firms with a high level of corporate governance? Risk taking preference is another relevant issue because it depends on CEO power. As mentioned earlier, both financial and operational risk are the determinant of the cost of equity. If CEO risk taking preference is to take risky investment projects, firms suffer high risk. So, it is worth studying if CEO risk taking is an intervening effect of the link between CEO power and the cost of equity. Therefore, this study includes another research question. Does the risk taking mediate the relationship between CEO power and the cost of equity?

1.3 **Objectives and Contribution of Research**

Objectives

The objectives of this study are (1) to test the direct effect of the relationship between CEO power and the cost of equity, (2) to test if corporate governance can mitigate the agency cost of CEO power, thus lowering the cost of equity, and (3) to test the intervening effect by adding risk taking as a mediator to the relationship between CEO power and cost of equity. This study can identify whether risk taking is a partial or full mediator, or is not the mediator of that relationship.

Contribution

This study makes significant contributions to CEO power literature in the following ways:

First, this study contributes to the cost of capital research by identifying that CEO power is a determinant of the cost of equity. Prior studies suggest factors such as risk and information asymmetry determine the cost of equity. However, these factors are also related to the CEOs' decision-making power.

Second, this study contributes to corporate governance literature by emphasizing the effectiveness of this mechanism in lowering the agency cost and, as a result, the cost of equity is lower.

Third, this study contributes to the financial behavior literature by emphasizing that the CEO risk taking affects the relationship between CEO power and the cost of equity. This study further investigates the mediating effect of the relationship by examining the CEO risk taking. The results from this study are likely to improve our understanding of how CEO power affects to the cost of capital. The indirect effect provides an interesting result. It shows the negative relationship between CEO power and CEO risk taking. As a result, the direct relationship between CEO power and the cost of equity is less pronounced when CEO risk taking is added to the model. It implies that powerful CEOs hesitate to take risky projects and CEO power affects the cost of equity. Finally, to the best of our knowledge, this study is the first to examine the effect of risk taking and corporate governance on the relationship between CEO power and the cost of equity.

For managerial contributions, this research aims to fill the gap in the literature on corporate finance by testing the effect of CEO power in organizations. CEO power also relates to shareholders' wealth thus, it affects the cost of equity. Several managerial contributions are offered from this study.

First, this study provides empirical testing of CEO power constructs that give benefits to Thai's business culture by developing the CEO power index based on four dimensions. The relationship is complicated because Thai business culture is different from western countries. In addition, a CEO power index is seldom investigated in Thailand. This study shows an aggregate picture of CEO power that affects risk taking decisions and the cost of equity. If CEO power affects the cost of equity, this can imply that CEO background, such as education, experience, and prestige can impact the shareholders' confidence. As a result, the cost of equity will vary according to CEO power.

Second, the issue of how a dominant CEO affects the performance of an organization is open to debate. CEO power is the a crucial factor on financial management since it affects the cost of equity. As a result, it can affect project acception or rejection and it also affects firm value (Han et al., 2016).

Third, focusing on corporate governance, it shows when corporate governance affects the agency cost and cost of equity. This result benefits regulators, such as SEC (Securities and Exchange Commission) and the Thai IOD, to adjust a suitable corporate governance mechanism for Thai firms.

Fourth, focusing on risk taking as a mediator, it helps to understand that CEO risk taking impacts the companies' cost of equity. In Thai context, powerful CEOs tend to avoid risk and the result is converse to the behavioral decision theory. The behavioral decision theory predicts that overconfident CEOs tend to take more risk (Gao and Sudarsanam, 2005; Nosic and Weber, 2010). This theory implies that the more power the CEOs have, the more confidence they receive.

This study tests the direct effect of CEO power and the cost of equity with the moderating effect of corporate governance by using multiple regression analysis. To test the moderating effect, this study examines the interaction effect between CEO power and corporate governance on the cost of equity. Also, this study expands Lewellyn et al. (2012) work by examining the relationship between CEO power and risk taking for public companies listed on the Thailand stock exchange. However, in this study, the risk taking is used as the mediator of the relationship between CEO power and the cost of equity. To

test the mediating effect, this study uses Structural Equation Modeling (SEM). Amos software is used to build and confirm the model and show the relationships among the variables.

The CEO power index will be constructed based on Finkelstein (1992)'s CEO power dimension. The cost of equity is not directly observable; however, by using the CAPM, investors can compensate for the time value of money and risk. In this model, a risk measure (beta) is considered to pay the return that an investor needs. Thus, this study will employ the capital asset pricing model (CAPM) to estimate the cost of equity. To make the test robust, the ex-ante cost of equity capital will be calculated to confirm the results.

1.4 Overview of Remaining Chapters

The remainder of the paper is organized as follows. First, this study reviews the literature on CEO power, the dimensions of CEO power, risk taking, corporate governance, the cost of equity and the theories used in our study. This study will review both the direct and indirect relationship between CEO power and the cost of equity. For the indirect relationship, this study will evaluate the relationship between CEO power and risk taking and risk taking and the cost of equity. This study investigates the moderating effect by showing the impact of corporate governance on the relationship between CEO power and the cost of equity. Finally, this study describes the research design. The CEO power index and the cost of equity estimation procedure will be presented. Data collection and statistical analysis are followed by the results and conclusion of the report.

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CHAPTER 2

Literature Review and Hypothesis Development

2.1 Power and CEO power

2.1.1 Power

Power plays a crucial role in many areas such as in politics and business. "It is a primary dimension of inequality in society and an important determinant of life chances" (Cook et al., 2006). Power is a relative concept that can only be understood in a particular context and cannot stand alone by itself. It is held by someone (person(s)) or something (organizations). It exists when someone or something interact with intentional action (Chassagnon, 2012). Following Adams et al. (2005), power is a relational construct, and the exercise of power is related to others. It can be viewed as a dyadic or social relationship.

According to Dahl (1957, p.202), the standard definition of power in the dyadic relationship is "A has power over B to the extent that he can get B to do something that B would not otherwise do." Thus, power means a person's ability to force another person to change his or her behavior. Social power is power among people or organizations. It is the relationships between more than two persons or organizations such as between a person to people, person to a group and people to people. Lo and Ramayah (2011) state that when people have a different level of potential power, the social power exists to accomplish the goals of the organization. One of the most significant academic studies involving social power is Emerson's (1962) study. Emerson (1962) early research analyzes power based on the power-dependence relationship. He expresses power in the relational term which a person(s) is depended on another person(s). He also uses a general formula to represent a particular definition of power. It is stated as "Pab=Dba; the power of A over B is equal to, and based upon, the dependence of B upon A" (Emerson, 1962, p.32). Thus, in his formulation, the power is based on the relationship of persons. In 1972, Emerson expanded his study of power to an exchange relation network.

Several researchers provide definitions of power. In its broadest terms, power is present when it gets others to do a thing in its favor. Also, power may be defined as the force that can change another actor's behavior. For example, Dahl (1957) defines power as a person's ability to force another person to do something that the individual wants. Moreover, power can be related to someone's ability. Salancik and Pfeffer (1974) define power as the ability of a person to bring about desired outcomes. Chassagnon (2012, p.6) states that "power is the capacity of an actor A to produce intentional and predictable effects on another actor B. Therefore, power is not an attribute of the actor and has no existence in itself." Tjosvold and Sun (2006) define power as the capacity to get others to do what they want even though they do not agree. According to Rabe (1962, p.31), "power is a personal thing derived from the individual's own special skills, integrity, and contacts". Ragins and Sundstrom (1989), as cited in Lo and Ramayah (2011, p.100), state that "power is basically a matter of perception and perceptions can influence interpersonal expectations and relationships." Indeed, power exists among the connection between people, and it affects decision making in the organization. Tjosvold and Sun (2006) proposes that the critical work of the CEO is to cope with resources. They defines power as "the control of valued resources: A has power in relation to B when A has resources that can affect the extent that B accomplishes goals" (Tjosvold and Sun, 2006, p.218). Therefore, power is the person's ability derived from his knowledge, resources, AI UNIVE connections, and position.

What is the impact of power in an organization? Power always implies intentional action in the business area, and it is understood as a managerial discretion (Hambrick and Finkelstein, 1987). Pfeffer (1992) states that "Power to influence policies or institutions stems from the control of decisions with positive or negative effects." Bach and Smith (2007) define power as the capacity of an individual to exert influence to change the behavior of a person or group in some intended way. Abernethy and Vagnoni (2004, p.211) define power as "the ability of an individual to influence organization decisions and activities in ways that are not sanctioned by the formal authority of the system." Lambert et al. (1993, p.441) define power as "the ability of managers to influence or exert their will or desires on the remuneration decisions made by the board of directors, or perhaps the compensation committee of the board." Thus, power is the person's ability that can affect other behavior and organization decisions.

2.1.2 CEO Power

The chief executive officer (CEO) power has been studied in various contexts. For example, researchers identify the effects of power on choices and performance of companies (e.g., Finkelstein, 1992; Haleblian and Finkelstein, 1993; Bach and Smith, 2007). What is CEO power within a firm? To answer this question, we need to refer to the fiduciary duty of the CEO. In a modern corporation, Jensen and Meckling (1976, p.311) define the firm as "one form of legal fiction which serves as a nexus for contracting relationships". This "nexus of contract" is the most dominant concept in corporate finance. They define a contract between ownership and control as the agency relationship. Under this agency relationship, it is a contract which one or more persons (the principals) engage another person (the agent) to perform all activities in a firm on their behalf (Jensen and Meckling, 1976). The principals (shareholders) of a firm elect a board of directors. The role of the board is to hire a CEO to manage the company and to provide information about the CEO's ability to the shareholders. The role of the agents (CEOs) is to operate the business and its capital resources such as employees and physical resources, so as to maximize shareholders' wealth. By his or her position, CEO is mostly under contract to other stakeholders of the firms.



Figure 1.1 a Contract Model

With this decision-making authority, the CEOs have the power to coordinate all activities of inputs and carry out the contract agreement with other stakeholders. Adams et al. (2005) also suggest that the CEO is very powerful in a firm because the CEO is on

the top-level of the organizational structure. He refers that "top executives not only have absolute power of firms' operational decisions, but also have substantial power to influence firms' strategic decisions." So the decision-making power of CEOs is very significant along with the firms' operations (Adams et al., 2005). Although the literature suggests that the CEO is the key person who has strong leadership of the firm, it also reminds us that the CEO is also under an employment contract. Thus, he or she can either serve the shareholders to maximize the shareholder's wealth or serve his or her wealth. Finkelstein and D'Aveni (1994) suggest that CEO power can be either positive or have adverse effects on the firms performance. On the positive effect, CEO power is important in the negotiation process and leads to more effective management in uncertainty environments. On the negative side, the CEOs might create an entrenchment effect to serve their own wealth.

This study defines CEO power as the ability of a CEO to influence the person(s) and institutions on the contract, despite their resistance, to allocate the organization resources, and to accomplish their desired outcomes.

Dimension of CEO Power

Several researchers propose different kinds of CEO power. For example, Hunt and Nevin (1974), as cited in Lo and Ramayah (2011), posit two separate types of power called coercive and non-coercive power. Brown et al. (1983) categorize power into economic and noneconomic power. Also, several scholarships have divided CEO power into many dimensions. For example, Krishnan and Sivakumar (2004) propose two dimensions of power: personal power and structural power. Finkelstein and D'Aveni (1994) suggest that CEO power consists of two types: positive power and negative power. In a broad area, Brockmann et al. (2004) and Pfeffer (1992) provide two kinds of CEO power which are formal power and informal power. The formal power refers to their position in a firm. For example, CEOs are can also be the Chairman of the Board of Directors. The informal power comes from the CEOs' prestige, their social status and their connection with other partners.

One of the most dominant studies in the field of management research divided CEO power into multi-dimensions is Finkelstein's study (1992). He defines CEO power as

"the ability to manage internal and external sources of uncertainty" (Finkelstein, 1992, p.508). While the internal source of uncertainty is coping with the internal structure function such as the board of directors and other executives, the external source of uncertainty deals with the firm's environments. Also, he identifies that executive power is categorized into four dimensions to cope with uncertainty, namely, structural power, expert power, ownership power and prestige power (Finkelstein, 1992). These four validated dimensions of power have been used to examine CEO power in various academic research (e.g., Wu et al., 2011; Diga and Kelleher, 2009; Chen et al., 2011; Daily and Johnson, 1997; Lewellyn et al., 2012). 2/24:

(1) **Structural power**

Structural power is related to the hierarchical structure of an organization (Finkelstein, 1992). It is the most common type of CEO power received from the position in a firm (e.g., Finkelstein, 1992; Wu et al., 2011). CEO power stems from the formal positions within an organization so it can be captured by the formal titles and relative compensation (Finkelstein, 1992). The greater CEOs' structural power, the greater control the CEO has over other members (Chen et al., 2011). The CEOs are in the top positions of organizational structures. Thus, due to the nature of the CEOs' job, they have the structural power to exert influence over their colleague or other subordinates. Also, CEOs have the authority to control the resources and to cope with uncertain environments (Wu et al., 2011). Moreover, when CEOs occupy the top position in an organization, they are easy to recognize (Brass and Burkhardt, 1993; Krackhardt, 1990). Thus, with the structural position, the CEOs benefit with the social element as well (Daily and Johnson, by Chiang Mai University 1997).

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(2) Expert power

Finkelstein (1992, p.513) says that "In the context of strategic decision making, expertise may be defined as the ability to deal with environmental dependencies" and he proposes that an executive who can cope successfully with uncertainties of the firm's industrial environment has expert power. CEOs who oversee the organization have to be involved with a variety of functional areas, so they have contacts both within and outside the firm. Thus, CEOs can gain more experience across a broad range of fields to cope

with environmental uncertainties that the companies experience. This learning experience provides expert power to CEOs (Finkelstein, 1992). Many researchers (e.g., Hambrick, 1981; Wu et al., 2011) support Finkelstein's (1992) idea that expert power is one source of CEO power and it can be determined by the ability of a CEO to maneuver through a complex environment. Expert power is related to functional expertise. Thus, the CEOs who have experience in a particular area can be recognized as an appropriate functional expert and having expert power (Finkelstein, 1992). When expert power entails having knowledge and skills, having experience in a particular area, and understanding the proper functional operation, it is advantageous to the CEOs in the decision-making process (Lewellyn et al., 2012). In addition, some researchers (e.g., Daily and Johnson, 1997; Finkelstein, 1992) propose that with expert power, CEOs can put forth control over the director and other stakeholders. When CEOs develop experience over time through the communication networks within and outside the organizations, they gain a firm-specific knowledge (e.g., Golden and Zajac, 2001; Simsek, 2007). Greve and Mitsuhashi (2007), as cited in Lewellyn et al. (2012), advise that the longer the tenure the CEO is in, the greater the informal power is received from social capital and knowledge.

(3) Ownership power

CEOs have ownership power when they own equities in the company that they work. This ownership power is created from many ways. For example, CEOs buy equities, their family holds equities, or they are founders of the firms, or related to the founders (Finkelstein, 1992). The higher level of equities the CEOs own, the greater the ownership power (Chen et al., 2011). When CEOs hold an ownership position, they become an owner and manager at the same time. The ownership is a significant factor in the agency relationship (e.g., Finkelstein, 1992; Wu et al., 2011). According to this relationship, CEO ownership represents both management (agent) and shareholders (principal) (e.g., Daily and Johnson, 1997; Wu et al., 2011). This CEO ownership power can affect the organization in many ways. Managerial shareholdings can interfere with the board decisions (e.g., Finkelstein 1992; Lambert et al., 1993), selecting directors (Wu et al., 2011), deciding firms' directions (Wu et al., 2011) and the remuneration level (Lambert et al., 1993).

Several researchers (e.g. Fredrickson et al., 1988; Pfeffer, 1981; Wu et al., 2011; Lewellyn et al., 2012) remark that ownership power can prevent the CEOs from involuntary dismissal. Also, Zald (1969), as cited in Daily and Johnson (1997), concludes that a CEO with an ownership position is more powerful than the CEO without ownership of equities in the firm. Moreover, Allen (1981), as quoted in Daily and Johnson (1997), concludes that if CEOs have ownership in the business they operate, they have greater ability to guide the company's direction. However, Lewellyn et al. (2012) suggest that CEOs who hold over 5 percent of the firm stock will be more powerful. This dominant CEO can become entrenched and influence the election of members of the board of directors.

(4) **Prestige power**

Merriam-Webster's Collegiate Dictionary 1994, as cited in Lewellyn et al. (2012, p.294), gives the meaning of prestige as "commanding position in people's minds". Giddens (1972), as quoted in Daily and Johnson (1997), states that CEOs are a member of the managerial elite because they have a top position in an organization. With this membership of the administrative elite, CEOs have prestige power seen by both within and outside stakeholders (Daily and Johnson, 1997). In addition, D'Aveni (1990), as cited in Bach and Smith (2007), concludes that the CEO prestige power can signal legitimacy to external stakeholders and a prestigious education network also benefits CEOs when operating the firm to face uncertain environments (e.g., Daily and Johnson, 1997; Finkelstein, 1992). Granovetter (1985), as quoted in Bach and Smith (2007), mentions that the education network gives some information and tacit knowledge. Thus, CEOs' education background benefits themselves. This CEO prestige power also matters to the firm's bankruptcy. D'Aveni (1990), as cited in Wu et al. (2011), finds that after prestigious top managers had left firms, the creditors withdrew their support leaving the firm bankrupt. Nevertheless, Brockmann et al. (2004) suggest that CEO prestige power can fail the company because CEOs can use this power to protect them when they have inappropriate performance.

2.2 Risk

In general terms, Bowman (1980, p.4) gives the meaning of risk as that "Risk is the concept that captures the uncertainty, or more particularly the probability distribution, associated with the outcome of resource commitments." He also states that risk can be regarded in two ways that are the ex ante and the ex post. Risk is perceived as the resource commitment called an ex ante, while risk is observed over time from the results of the given action to the resource commitment called an ex post (Bowman, 1980). The result of taking the risk can be gain or lost, and its variance in returns occurs both cross-sectional and longitudinal. Palmer and Wiseman (1999, p. 1038) define managerial risk as "management's proactive strategic choices involving the allocation of resources. Strategic decisions involve uncertainty because they promote change in organization."

When CEOs are making risky investment decisions, it is possible that the project will fail and the firm will suffer poor performance because of their judgments. Alternatively, the project may succeed and results in a good return to the firm. It is hard to justify CEO risk taking directly. This is because CEO risk taking is an unobservable construct. Thus, scholars usually observe this abstract construct from outcomes such as company risks. More recently, empirical studies (e.g., Coles et al., 2006; Chakraborty et al., 2007; Acharya et al., 2011; John et al., 2008) consider that managerial risk taking is closely related to the overall risk of the firm because this risk is influenced by managerial risk taking.

Scholars try to capture managerial risk taking by using many proxies. For example, Kempf et al. (2009) suggest that both compensation and employment risk are an incentive for managerial risk taking. They capture the risk taking decision of a mutual fund manager by using the outcome of their decision that is firm portfolio holdings data of equity mutual funds. Their results show that both compensation and employment risk are related to the risk taking decision of the mutual fund managers. When the managers suffer poor midyear performance, they decrease risk taking strategies because they are afraid of job loss. In contrast, when employment risk is low, the compensation incentives motivate the managers to take more risk. Similar to Kempf et al. (2009), Chakraborty et al. (2007) find that managers take into account termination risk when making a risky investment. They suggest that the investment failure of the firm leads to higher termination risk to managers
which is a higher probability of them being fired. Thus, managers prefer to reduce risk taking when firm performance is poor. They capture managerial risk taking by using firm's risk which is calculated by using annualized standard deviation of daily stock returns over the past fiscal year. In addition, there are other factors that determine managerial risk taking such as sensitivity of CEO wealth to stock volatility (vega) and the sensitivity of CEO wealth to stock price (delta). For example, Coles et al. (2006) study the relationship between managerial incentives and risk taking. They find that a higher sensitivity of CEO wealth to stock volatility (vega) exposes managers to take a more risky project such as investment in R&D. However, they find that risky policy choice lead to lower delta. They capture riskier investment policy by using R&D expenditures. Moreover, they find a positive relationship between vega and firm's risk (using stock return volatility). The same positive results are seen between delta and firm risk.

In summary, CEO risk taking cannot be observed directly. CEOs are the leaders of the firms who make decision to take risky projects and firm's risk is the outcome of CEO risk taking preference. Thus, this study captures the CEO risk taking by using firm risk. Based on previous literatures, this study defines CEO risk taking as the decision making of the CEO of firms' operational decisions and firms' strategic decisions that can cause uncertain outcomes to the firms. Following some empirical studies (e.g., Cheikh, 2014; Chen and Zheng, 2014; John et al., 2008), this study use the volatility of return as a proxy for managerial risk taking.

2.3 Corporate governance (CG)

Corporate governance has been discussed in academic areas since the 1930's (Lima and Sanvicente, 2013). There are a lot of conceptual frameworks for corporate governance developed worldwide. For example, Standard & Poor (2002), as cited in Tran (2014), identifies four governance dimensions that are financial information quality and transparency, ownership structure, board structure and shareholder rights. The Organization of Economic Cooperation and Development (OECD) suggests five major principles of corporate governance which are the rights of shareholders, the equitable treatment of shareholders, the role of stakeholders in corporate governance, disclosure and transparency, and the responsibilities of the board. Also, the globalization of financial

markets acts as a key assist in the implementation of codes of CG (Khanna and Palepu, 2004; Brown et al., 2011).

However, the issue of corporate governance received more attention in Asia, after Asia's financial crisis of 1997 and the global financial crisis of 2007–2008. Poor corporate governance and high concentrated ownership structures of companies in Asia lead to unfavorable market performances (Tam and Tan, 2007). Due to the large number of firms' failure during the financial crisis, governance reforms have drawn public attention. Many parties such as the press, shareholders and regulators want better corporate governance. Their requirements are included in terms of board monitoring such as the higher percentage of independent directors and more frequent director meetings (Cai et al., 2009). Because of the regulators' attention, some mandatory recommendations have been launched. As a result, the "codes of best practice" for public firms has been developed.

In Thailand, The Stock Exchange of Thailand (SET) consolidates respected guidelines from the OECD and adapts them to the local environment. In 2006, SET revised its 15 corporate governance principles to reflect the best practices of OECD and the World Bank. These principles are expected to be fully implemented by listing firms since 2008.

The role of corporate governance is an important impact factor to business. Before assessing that role, this study will describe the term "corporate governance". The concept of corporate governance has been defined in different ways. For example, Shleifer and Vishny (1997, p.737) state that "corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment." Zingales (1998), as cited in Gillan and Starks (2003, p.5), defines corporate governance as "the complex set of constraints that shape the ex post bargaining over the quasi-rents generated by the firm". Gillan and Starks (1998, p.4) define corporate governance as "the system of laws, rules, and factors that control operations at a company". Sir Adrian Cadbury, head of the Committee on the Financial Aspects of Corporate Governance in the United Kingdom defines the meaning of corporate governance as "the system by which companies are directed and controlled" (as quoted in Spitzeck and Hansen, 2010, p.379; Claessens and Yurtoglu, 2013, p.4).

The objective of corporate governance is to reduce the conflict of interest problem as explained in the agency theory that managers do not take action to maximize shareholders' wealth (Moussa et al., 2013). Corporate governance represents a set of mechanisms (e.g., Kang and Shivdasani, 1995; John and Senbet, 1998; Cremers and Nair 2005; Reverte, 2009; Junarsin, 2011; Collins and Huang, 2011; Mahdavi et al., 2012; Lima and Sanvicente, 2013; Claessens and Yurtoglu, 2013). The design of these mechanisms is to serve many objectives. For example, it is to improve the principal's control over the agent (Wiseman and Gomez-Mejia. 1998), to ensure that managers act in the interest of shareholders (Kang and Shivdasani, 1995), and to reduce agency costs (Mazzotta and Veltri, 2014). Also, several researchers support that corporate governance is designed to reduce agency risk (e.g., Ashbaugh et al., 2004; Reverte, 2009) and minimize agency conflicts (Jiraporn et al., 2012). Various types of corporate governance mechanisms are used for firms such as executive compensation (e.g., Junarsin, 2011; Cai et al., 2009), hostile takeovers (Dumitrescu, 2010), effectiveness of boards (Cai et al., 2009) public disclosure requirements (Cannella, 1995), shareholder rights (Ashbaugh-Skaife et al., 2006), ownership structures (e.g., Ashbaugh-Skaife et al., 2006; Dumitrescu, 2010), and legal protection of investors (e.g., La Porta et al., 2000; Durnev and Kim, 2005; Doidge et al., 2007).

An extensive literature studies the link between the firms' performance and corporate governance such as audit committees, independent directors, and takeover defenses, and minority shareholder protections, legal protection of investors, (e.g., Core et al., 2006; Gompers et al., 2003; Brown and Caylor, 2009). Brown and Caylor (2006) report the positive relationship between governance quality and firm's profit.

In general, the governance mechanisms can be classified into internal and external governance mechanisms (e.g., Kang and Shivdasani, 1995; Brown et al., 2011; Florackis and Ozkan, 2009). "Internal characteristics include the structure of the board of directors and its committees, internal control systems, managerial incentives and the firm's ownership structure; external characteristics include the influence of block holders, financial analysts, auditors, regulators and competition in the market for corporate control" (Brown et al., 2011, p.98).

This study will examine the role of corporate governance mechanisms in dealing with the agency problem caused from CEO power and dealing with the cost of equity supplied by shareholders. The corporate governance mechanism is intended to reduce agency cost. Thus, it should also have significant effects on the cost of equity. Although, CEO power can hinder the boards, internal control system, and internal corporate governance, it is difficult for CEOs to implicate external corporate governance. Consistent with agency theory, the external monitoring system can limit manager's discretion in pursuing their own wealth. A high concentration of institutional investors increases external monitoring. Therefore, this study investigates corporate governance mechanisms that relate to institutions ownership as an external corporate governance mechanism. In additon the corporate governance index, reported in the Corporate Governance Report (CGR) is also used in this study.

2.4 Cost of Equity

Cost of equity is the required rate of return when an investor invests in equity. Thus, the cost of equity to a company and the return to shareholders can be considered as the same thing but seen from a different angle. It can be viewed as a coin which has two sides. One side is the return that the investors want while another side of the coin is the cost that the firm has to pay back to their investors. The cost of equity can be varied depending on the risk premium that the shareholders require.

To determine which factors affect the cost of equity, this paper starts with reviewing financial theories that relate to the capital structure. The Modigliani-Miller theory (M&M) (1958) hypothesize that under certain assumptions such as no taxes, no bankruptcy costs and no transaction cost; the market value of a firm is irrelevant to corporate finance decisions. According to M&M, when the company's capital structure changes, the weighted average cost of capital (WACC) remains constant. Based on the capital-structure irrelevance proposition, the capital structure does not influence a firm's stock price. However, in a world of uncertainty, it is a difference between financing with debt or equity. Two theories support that methods of financing affect the capital structure; the static tradeoff theory and the pecking order theory. The tradeoff theory assumes that there is tax benefit from interest payments (Myers, 1984).The interest paid on debt is tax deductible. In addition, the static tradeoff theory argues that a firm increases leverage

until the target debt ratio is reached (Myers, 1984). The pecking order theory suggests that firms prefer internal financing more than external financing. Retain earning is considered to be the first resort, then the debt financing is considered. The last resort to consider is equity financing. This theory also persists that there is an asymmetry of information between lenders and borrowers. In summary, in a world of uncertainty, many factors determine the capital structure and also the cost of capital.

Some fundamental determinants of the cost of equity have been identified by previous studies such as risk and information asymmetry. The capital asset pricing model (CAPM) holds that, in an informationally efficient market, systematic risk (Beta) determines the cost of equity (Sharpe, 1964 and Lintner, 1965). "Risk refers to the likelihood that we receive a return on investment that is different from the return we expect to make" (Damodaran, 2012). Risk is composed of either good or bad outcome. The good outcome is when the return is greater than the expected return of investors. On the opposite side, bad outcome is when the return is less than the expected return. A risk premium is an extra expected return (above the nominal risk-free rate) required by investors and it is a motivation to place their funds at risk. This risk premium determines the expected return. Thus, the risk premium drives the return. In the other word, the risk premium determines the cost of equity.

Information asymmetry is another factor determining the cost of equity. Akerlof (1970), suggest that there is the existence of a market imperfection due to information asymmetry and the Lemons problem is introduced in research papers. He gives an example of used cars. The lemons problem caused from the information asymmetry between the seller and buyers of a product. The seller wants to sell the car. This car might be a "lemon". Because of information asymmetry between buyers and sellers, the buyer will demand a deep discount on the car (Akerlof, 1970). Easley et al. (2002) find that investors demand a higher rate of return because of the information asymmetry factor.

In addition, Fama and French (1992) suggest that book-to-market equity and firm size can also explain the variation of the cost of equity. They consider book-to-market equity and size as proxies for risk. In addition, the multifactor model suggests that the risk premium is a reflection of multiple risk sources such as business-cycle risk, interest or inflation risk, and energy price risk (Bodie, 2009).

Empirical studies suggest that there are many factors affect the cost of equity such as leverage and taxes (Dhaliwal et al., 2006), disclosure (Botosan, 1997; Richardson and Welker, 2001; Cheng et al., 2006; Eaton et al., 2007; Souissi and Khilf, 2012; Lopes and Alencar, 2010; Kim and Shi, 2011; Li and Yang, 2011; Dhaliwal et al., 2014), and information asymmetry (He et al., 2013; Reverte, 2009). The effect of the disclosure level on the cost of equity can be explained by two aspects (Botosan, 1997). First, greater disclosure level causes the market to allow more liquidity, thus the cost of equity is reduced. Second, the greater disclosure level, the lower the information risk is for shareholders. As a result, investors require a lower premium when their estimation of risks decreases.

In addition, the amount of corporates' debt can determine the cost of equity. Dhaliwal et al. (2006) examine the effect of leverage and corporate taxes on a firm's cost of equity. They find that equity risk premiums increase with leverage, as a result, the cost of equity is increased. They further explore that a corporate tax benefit from debts can reduce the cost of equity.

2.5 Agency Theory

One of the well-known financial theories that has been extensively applied in corporate finance is the agency theory. This theory is a main topic in financial research, and it has been used to explain the agency problem that is the core of conflicts appearing in an organization. Berle and Means (1932), as cited in many studies (e.g., Wang, 2010; Maher and Andersson, 2000; Gillan and Starks, 2003), formerly raise the agency problem. They explain that this problem occurs because of the conflicts of interest between management and stockholders. Jensen and Meckling (1976) define the agency relationship as a contract between two parties where one is a principal (shareholder) and the other is an agent (manager) who represents the principal in transactions with a third party. Agency relationships occur when the principals hire the agents to perform some services on the principal's behalf. Principals commonly delegate decision-making authority to the agents.

The main agency problem is the conflict of interest between principals and agents. This has been distinguished in past literature with two types. First, it is the conflict between large and small shareholders. These large shareholders might generate minority expropriation issues (Shleifer and Vishny, 1986). Second, it is the conflict between managers and shareholders which are caused by the incomplete contractual relationship between the principal and the agent (Jensen and Meckling, 1976). Thus, managers have many chances to pursue their private benefits at the expense of shareholder interests (Jensen and Meckling, 1976). This agency problem leads to agency costs.

Jensen and Meckling (1976) suggest that there were at least three forms of agency costs, which are monitoring cost, bonding cost and residual loss. "The principal can limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities of the agent" (Jensen and Meckling, 1976, p.308). The monitoring cost is used to ensure the management activities. "In some situations it will pay the agent to expend resources (bonding costs) to guarantee that he will not take certain actions which would harm the principal or to ensure that the principal will be compensated if he does take such actions " (Jensen and Meckling, 1976, p.308). Thus, this bonding cost is a restrictive covenant between principal and agent. Even paying both monitoring cost and bonding cost, the divergence between their interests can remain. It is impossible to generate the zero cost to ensure that the agent will maximize shareholders' wealth. This difference is referred as the residual loss (Jensen and Meckling, 1976).

Following the financial literature, the agency cost that causes a loss of shareholders' wealth by managers can be separated in many aspects. The primary perspective is when the desires or goals of the shareholders and managers are different. If private benefits are taken by managers, it is difficult and expensive for the shareholders to verify the managers' actions. Malmendier and Tate (2005, p. 2661) suggest that "under the agency view, managers overinvest to reap private benefits such as "perks", large empires, and entrenchment." In addition, Bebchuk et al. (2002, p.763) suggest that the agency problem suffered in most public companies is because of executives' decisions that maximize their wealth such as "the erection of lavish office buildings to house corporate staff or other excessive perquisite consumption". Also, another important perspective when executives decide to maximize their wealth rather than shareholders' wealth include "the failure to reorganize and reduce the scope of operations when downsizing is called for; and the

refusal to fire an incompetent subordinate because he is a close friend" (Bebchuk et al., 2002, p.763).

The interests of agents and principals differ because CEOs, as agents, are selfinterested and may not want to take the risky project. It is not always the case that CEOs will be risk-averse, some of them are risk taking. Therefore, many scholars (e.g., Keltner et al., 2003; Anderson and Galinsky, 2006; Lewellyn et al., 2012) try to explain the agents' risk preference with alternatives such as the approach/inhibition theory.

2.6 Approach/Inhibition Theory

The approach/inhibition theory posits that power triggers either the behavioral approach system or the behavioral inhibition system (e.g., Sutton and Davidson, 1997; Keltner et al., 2003; Anderson and Galinsky, 2006). In the context of the approach/inhibition theory, people with power are those who have more resources and fewer constraints (Keltner et al., 2003). The behavioral approach system focus on the behavior associated with rewards, such as food, achievement, sex, safety, and social attachment (Anderson and Galinsky, 2006).

According to the behavioral approach system, Anderson and Berdahl (2002) suggest that when people have power they will focus on the potential reward aspects of risky behavior and do not consider the potential threats. Also, Magee et al. (2007) refer that powerful individuals neglect the threats because they do not notice them within their environment. Anderson and Galinsky (2006) study the relationship between power and risk taking using five experimental studies and find positive relationship between them. Their findings conclude that powerful people focus more on the potential payoffs with risk taking and are less likely to take notice of the possible dangers (Anderson and Galinsky, 2006).

2.7 CEO power and the Cost of Equity

As already mentioned, the agency theory explains that CEOs act as agents who are delegated power from the shareholders to make critical decisions about financing, investment, and product-market. The agency theory also implies that there is the agency problem because CEOs maximize their wealth instead of shareholders' wealth. When the conflict of interest exists between CEOs and external shareholders, it leads to agency costs. CEOs are on the top of the executive level, thus they are able to dominate other executives. As a result, CEOs can use their power to act in a manner that benefits themselves causing deteriorated shareholders' wealth. Bahloul (2013, p.278) states that "If the powers of the CEO increase, he could restrict the dissemination of information to other managers and board members by increasing the agency costs of the firms". He also states that powerful CEOs can dominate decision making of other members, as a result, they will think of their self-interests not the firms' interest (Bahloul, 2013).

Although, CEO power can have positive or adverse effects on the organization, Haleblian and Finkelstien (1993) stated that power usually presents negative effects. They mentioned that when people have more power they exert their will and take advantage of others. It is the same as the managerial power approach and the agency theory which suggest that powerful CEOs are more likely to take private benefits. The managerial power approach introduced in previous studies mostly pays attention to managerial power problems (e.g., Lambert et al., 1993; Bebchuk et al., 2002). Prior research gives evidence that high CEO power aggravates agency cost causing an adverse impact on a firms' performance. The managerial power approach suggests that CEOs have the power to influence their compensation, and extract rents (Bebchuk et al., 2002). Laan (2010) reports the same idea that CEOs can dominate the parameters of the compensation contract. The managerial power approach also suggests that when CEOs have power over boards, boards cannot operate at arm's length in devising executive compensation arrangements (Bebchuk et al., 2002). Albuquerque et al. (2013) insist that CEOs use their power to extract higher pay or private benefits and they have different preferences over each type of compensation. Bebchuk et al. (2002) suggest that CEOs entrenchment using inefficient pay arrangements hurt shareholder value. Bebchuk et al. (2009) suggest that when CEOs have greater power, they are more likely to act in self-interest. Stronger CEO power is associated with higher agency costs such as expanding the firm beyond its optimal size through unnecessary acquisitions (Bebchuk et al., 2009). Bebchuk et al. (2011) also find the inverted effect between high CEO power and firm value, measured by Tobin's q, and with poorer accounting profitability. In addition, previous studies find that companies underperform with weak shareholder rights or when entrenched CEOs exit (e.g., Gompers et al., 2003; Davies et al., 2005; Core et al., 2006).

Following the agency theory, shareholders (principals) delegate the decisionmaking power to CEOs (agents). These decisions include the way to find and allocate the capital funds to achieve the goal of maximizing shareholders' wealth. The conflict of interest cannot be aligned if CEOs try to maximize their own self-interest. This paper aims to estimate directly the relationship between CEO power and the cost of equity. In doing so, this study is based on the assumption of agency theory and of the managerial power approach. According to the agency theory, CEOs have a conflict of interest with shareholders. The managerial power approach posits that most powerful CEOs can enjoy higher private benefit. The agency theory and the managerial power approach imply that CEO power leads to higher agency cost. When the agency cost is high, shareholders require higher risk premiums. As a result, the cost of equity will increase. Also, if CEOs have the resolute power to make decisions, they can impact the firms' outcomes as well as the cost of capital. Based on the preceding discussion, this study hypothesizes that the stronger CEO power, the higher the cost of equity.

H1. CEO power is positively related to the cost of equity.

2.8 CEO power, Corporate Governance and the Cost of Equity

A large body of empirical evidence supports that corporate governance is a set of mechanisms that can reduce the agency cost and increase the firm's value. For example, La Porta et al. (2002) find that in countries with better protection of minority shareholders, the company value is higher. Gompers et al. (2003) also conclude that the better corporate governance, the higher the firm's value. Also, corporate governance can mitigate the agency risk borne by investors. Ashbaugh-Skaife et al. (2009) suggest that if CEOs have self-interested behavior, the shareholders are exposed to agency risks. When CEOs pursue their interests such as shirking, overcompensation, and empire-building, these activities are at the expense of shareholders (Ashbaugh-Skaife et al., 2009). Liu and Jiraporn (2010, p.745) say that "the self-interest hypothesis contends that strong CEO power may give CEOs greater leeway for perquisite consumption or overcompensation." Their findings support this hypothesis and conclude that powerful CEOs suffer from the higher cost of debt because of having lower credit ratings (Liu and Jiraporn, 2010). Core et al. (1999) support the idea that powerful CEOs who are entrenched earn higher compensation. As a result, shareholders' wealth is transferred to powerful CEOs. When

shareholders notice these consequences of powerful CEO actions, they will expect some premium to cover these agency risks. As a result, the higher the agency cost, the greater the shareholder requirement for return. The cost of equity is the expected return to investors. Thus, the cost of equity will be enlarged when the agency cost is extended. Indeed, firms need a mechanism to reduce the agency cost caused by CEOs.

Previous studies document that corporate governance lessens the cost of equity. Tran (2014) finds that proper corporate governance structure can mitigate the cost of equity of German firms. This study shows that the cost of equity is negative to block ownerships, the quality of financial transparency and the bonus level of board members. Many empirical studies (e.g., Bhattacharya and Daouk 2002; Francis et al., 2004; Cheng et al., 2006; Hail and Leuz 2006; Chu et al., 2014) conclude that strong investor protections are effective in decreasing the cost of equity. Bhattacharya and Daouk (2002) find significant negative results between the relationship of insider trading enforcement and the cost of equity. Also, substantial legal protection that reduces the expropriation of minority shareholders also indirectly decreases the cost of equity (e.g., La Porta et al., 2002; Dyck and Zingales, 2004; Chu et al., 2014).

As already mentioned, previous literatures have been concerned with the direct relationship between corporate governance and the cost of equity. In addition, within an agency theory framework, corporate governance has an impact in mitigating agency costs (Ashbaugh, et al., 2004). Ramly (2012) states that "Corporate governance can enhance managerial monitoring and minimize abuse of power; thus, benefiting shareholders. Quality corporate governance mitigates problems due to conflict of interest." This implies that the firms with better corporate governance. In summary, corporate governance relates to the relationship between CEO power and the cost of equity because it impacts the agency cost caused by CEO power. Because high or low quality corporate governance can affect the agency cost in different ways, corporate governance could be considered as a moderator in a linear model between CEO power and the cost of equity. How does the moderator work out? First, the definition of the moderator should be introduced.

Baron and Kenny (1986, p. 1174) define a moderator as a "variable that affects the direction and/or strength of the relation between an independent or predictor variable

and a dependent or criterion variable. A moderator-interaction effect also would be said to occur if a relation is substantially reduced instead of being reversed." Within a correlation framework, a moderator effect can change the direction of the relationship between an independent variable and a dependent variable from positive to negative or vice versa. Within analysis of variance (ANOVA) terms, an interaction between the independent variable and the moderator is a moderator effect to the model. They also suggest a moderator model as following:



Figure 2.1 Moderator Model

This diagram shows three causal paths that feed into the outcome variable which are "the impact of the noise intensity as a predictor (Path a), the impact of controllability as a moderator (Path b), and the interaction or product of these two (Path c)" (Baron and Kenny, 1986, p. 1174). If the interaction (Path c) is significant, then the moderator effect is supported. A myriad of academic research believed that a variable is a moderator variable if it gives a significant result when it interacts with a predictor. However, Sharma et al. (1981) suggest that even though the interaction term is not a significant exit, that variable still can be classified as a moderator variable. They define a moderator variable as a variable that either modifies the form and/or the strength of a relation between two constructs. They identify four types of moderator variables (see Figure 2.2).



Source: Sharma et al. (1981), p 292

Figure 2.2 Typology of Moderator Variable

Sharma et al. (1981) classify the moderator variable into three types; Pure moderator, Quasi moderator, and Homologizer moderator. Follow this typology; if a variable is related to criterion and/or predictor and does not interact with a predictor, it is not a moderator (see Quadrant 1 in Figure 2.2). If a variable is not related to the criterion and predictor but it interacts with the predictor, it is classified as a pure moderator. If a variable is related to the criterion and predictor and also interacts with the predictor, it is classified as a quasi moderator. Finally, a homologizer is a variable that is not related to criterion and predictor and predictor and predictor. Sharma et al. (1981) explain that the homologizer moderator is a variable that affects the strength of the relationship through "partitioning the total sample into homogeneous subgroups with respect to the error variance". It means this variable operates through the error term and increases the amount of explained variance. The error term may be caused from measurement scale.

Based on the above discussion, corporate governance is a mechanism that effects the relationship between CEO power and the cost of equity. Thus, following Baron and Kenny (1986), corporate governance acts as a moderator because it can affect the direction or mitigate the relationship between CEO power (independent variable) and the cost of equity (dependent variable). The impact of CEO power on the cost of equity may be less pronounced for firms with a high level of corporate governance. Therefore, this study hypothesizes that corporate governance moderates the relationship between CEO power and the cost of equity as follows:

H2: CG moderates the relationship between CEO power and the cost of equity.

In Thailand, the corporate governance score is reported in the Corporate Governance Report (CGR). This score is developed by the Thai Institute of Directors (Thai IOD) and it corresponds with OECD principles. Corporate governance is classified into five categories: the rights of shareholders, the equitable treatment of shareholders, the role of stakeholders, disclosure and transparency, and board responsibilities. The CGR is announced every year, so it will benefit shareholders when evaluating or making a decision to invest in a listed firm. The higer the CG score, the better the rights of shareholders, the role of stakeholders, disclosure and transparency, the role of stakeholders, disclosure and transparency the test is a listed firm. The higer the CG score, the better the rights of shareholders, the equitable treatment of shareholders, the role of stakeholders, disclosure and transparency, and board responsibilities. Thus, it leads to the sub hypothsis for this study.

H2a: The CG score moderates the relationship between CEO power and the cost of equity.

In addition, CEO power relates to many of the activities of firms such as voluntary disclosure of company information, thus the internal corporate governance mechanism may be weak. Thus, this study tests the external corporate governance mechanism that can reduce the managerial agency cost. Institutional ownership is relevant to this study because it acts as a monitoring device. In addition, with a large equity stake in the invested firms, institutional investors they can inform financial market by selling their shares. Thus, the higher the institutional ownership, the better the firms are monitored. Thus, it leads to the sub hypothsis for this study.

H2b: Institutional ownership moderates the relationship between CEO power and the cost of equity.

2.9 CEO Power, Risk taking, and the Cost of Equity

The role of CEOs on risk taking has received increasing attention in literature. Especially, the relationship between CEOs' compensation and risk taking (e.g., Chen et al., 2006; Coles et al., 2006; Chakraborty et al., 2007; Hagendorff and Vallascas, 2011; Gormley et al., 2013; Raviv and Sisli-Ciamarra, 2013). Recently, many studies focus not only on the compensation paid but also other CEO's attributes relating to risk taking, such as tenure (Chen and Zheng, 2014), CEO gender (Faccio et al., 2015), CEO reputation (Liu et al., 2012), CEO's job security (Cziraki and Xu, 2014), and social status (Shemesh, 2014). This study will shift attention to the effects of CEO power on risk taking, since possessing power triggers the decision making, and these managerial investment decisions will affect the firm's performance and cost of capital.

There are several academic research studies of the relationship between CEO power and risk taking, however, the results are mixed (e.g., Lewellyn et al., 2012; Cheikh, 2014; Pathan, 2009; Victoravich et al., 2011). Lewellyn et al. (2012) and Cheikh (2014) find that greater CEO power causes a greater risk taking preference. However, Pathan (2009) and Victoravich et al. (2011) find the opposite result. They suggest that if CEO power is great CEOs do not prefer risky projects. Nevertheless, their results confirm that CEO power does affect risk taking preference. Their results imply that the firm's risk is the effect of CEO power. A primary reason used to explain this is that the powerful CEOs have decision-making power to allocate and operate the organization resources. The approach/Inhibition theory is a theory that Lewellyn et al. (2012) used to explain the direct effect on CEO risk taking behavior, so this study applies this theory to forecast the result.

The approach/inhibition theory suggests that possessing power increases the propensity to risk. Keltner et al. (2003) suggest that the approach/inhibition behavioral systems will be activated or deactivated caused by power. An elevated power can activate the behavioral approach system. When having power, CEOs' behavioral approach system is more active, so they will focus more on the reward. They will choose to engage in a risky project because they concentrate on the potential payoffs of that project (Keltner et al., 2003). CEOs will be less aware of the adverse outcomes inherent in that risk because their behavioral approach system is active. Anderson and Galinsky (2006) perform five studies and find that greater power increases people optimism about risks. As a result, powerful people engage in risky behavior. The reason behind this is because the power might make people more optimistic of chances to win and less aware of the inherent risks. They conclude that "power would induce a perceived reduction in the probability of

experiencing the downside of risk" (Anderson and Galinsky, 2006, p.514). Another reason that supports the same direction as the approach/ inhibition theory is that CEOs are confident about their ability and information.

Chen and Zheng (2014) suggest that CEOs have better information about their ability than others, so they are more likely to take value-enhancing risky projects. The succession of taking a value-enhancing risky project can also be used to signal the CEOs' ability. The less risky project is also a sign of weakness. Thus, powerful CEOs are more likely to take on a risky project (Chen and Zheng, 2014). Also, Malmendier and Tate (2009) suggest that a board of directors is reluctant to expel a superstar, so; powerful CEOs face lower termination risk. In addition, they find that these superstar CEOs have an inflated reputation outside of the firm meaning they can extract more compensation. Furthermore, Aggarwal and Samwick (2003) show that as managers become greatly entrenched, they tend to expand into new industries and increase idiosyncratic exposure. In a model with asymmetric information on ability, Zwiebel (1995) argues that as managers become less likely to be mistaken for bad managers, they will be less concerned with relative performance, and will thus be more willing to undertake new actions.

In summary, theories exist (e.g., approach theory) to support the relationship between CEO power and risk taking. The earlier studies pronounce that decisions taken on risky projects of powerful CEOs depend on their attitude about risk, and the empirical results are mixed (Chen and Zheng, 2014). Shemesh (2014) suggests that CEOs are in the top position in firms and have the reputation from that position. Also, CEOs do not only have wealth from salaries but also the social status from outside the firms. In addition, when they have social status, they have expectations both inside and outside of the firm. So, they have to act competatively. Shemesh (2014, p.6) also states that "CEOs value being in 'first place' as an end in itself, and so act as if they were in a winner-take-all tournament." Together, this study expects CEO power to dominate risk taking and supposes to see the positive relationship between CEO power and risk taking.

Also, risk is a factor to verify the cost of equity because investors require a risk premium to compensate for their risky investment (Reilly and Norton, 2006). Usually, risk, growth, and size are the most commonly cited determinants for the cost of equity (Fama and French, 1993). CEO risk taking behavior will affect the uncertainty of returns to the firm, so the cost of equity is varied according to their risk taking.

Baron and Kenny (1986) suggest that if there is an important entity or process, supported by theory, which can intervene between input and output, that entity or process can be classified as a mediator. This mediating variable is able to influence the dependent variable of interest, which has been presented as a path diagram to clarify the meaning of mediation as shown below.

Mediator

Outcome

Variable

Independent Variable

Source: Baron and Kenny (1986)

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Figure 2.3 Mediator Model

If a variable acts as mediator, there are at least three conditions of mediation: (1) the independent variable must significantly predict the mediator (i.e., Path a); (2) the mediator must significantly predict the outcome variable (i.e., Path b); and (3) when Paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant. The strongest mediating effect occurs when Path c is zero. However, it is possible that the relationship between the independent and dependent variables is still significant. "Because most areas of psychology, including social, treat phenomena that have multiple causes, a more realistic goal may be to seek mediators that significantly decrease Path c rather than eliminating the relation between the independent and dependent and dependent variables altogether" (Baron and Kenny, 1986, p.1176).

Mathieu and Taylor (2006) state that there are three different types of intervening effects namely, indirect effects, full mediation, and partial mediation. They suggest the alternative intervening models as following



Figure 2.4 Alternative Intervening Models

"Indirect effects are a special form of intervening effect whereby X and Y are not related directly (i.e., are uncorrelated), but they are indirectly related through significant relationships with a linking mechanism. In contrast, mediation refers to instances where the significant total relationship that exists between an antecedent and a criterion, is accounted for in part (partial mediation) or completely (full mediation) by a mediator variable" (Mathieu and Taylor, 2006, p.1039).

Indirect effects: when both the $X \rightarrow M$ (β_{mx}) and $M \rightarrow Y$ (β_{ym}) paths are significant and this occurs when the statistics show that the combined effect ($\beta_{mx} \times \beta_{ym}$) is significant.

Full mediation: when $M \rightarrow Y(\beta_{ym})$ has been included in the model the direct effect of $X \rightarrow Y(\beta_{yx})$ is no longer significant.

In contrast, Partial mediation: when both $M \rightarrow Y(\beta_{yx})$ and $X \rightarrow Y(\beta_{yx})$ are significant when considered simultaneously. However, one condition that has to be met is the significant $X \rightarrow M$ relationship for both the full and partial mediation models (James et al., 2006).

Thus, according to Mathieu and Taylor (2006), risk taking may be an indirect effect of the relationship between CEO power and the cost of equity or it can be either full or partial mediation between this relationships. Consequently, this study includes risk taking as a mediator of the relationship between CEO power and the cost of equity. Thus, this study hypothesizes:

H3: Risk taking mediates the relationship between CEO power and the cost of equity



2.10 Proposed conceptual model

Figure 2.5 Conceptual Framework of the Relationship between CEO Power and Cost of Equity: the Effect of Risk taking and Corporate Governance

Objectives

- 1) To test the direct effect of the relationship between CEO power and the cost of equity
- 2) To test the corporate governance effect (Moderator effect)
- 3) To test the risk taking effect (Mediator effect)

Hypotheses

Hypothesis 1: CEO power is positively related to the cost of equity

- Hypothesis 2: Corporate governance moderates the relationship between CEO power and the cost of equity
- Hypothesis 3: Risk taking mediates the relationship between CEO power and the cost of equity

CHAPTER 3

Research Method

3.1 Measurement of Variables

In this section, an overview of the measurements of the primary variables as well as the control variables and regression model will be discussed first. After that, the data collection and analysis method used to achieve various research objectives will be detailed.

3.1.1 Measuring Cost of Equity

Although the cost of equity is crucial for making financial decisions such as the choice of capital structure and capital budgeting analysis, the cost of equity cannot be observed directly. Scholars have proposed various models to measure the firms' cost of equity. One of the conventional models that has been used to estimate this cost is the Capital Asset Pricing Model (CAPM). This model was developed by Sharpe (1964) and Lintner (1965). Graham and Harvey (2001) find that this model is widely used by U.S. firms to estimate the cost of equity. Graham and Harvey (2001), as quoted in Boyle (2005, p.181), reports that "CAPM is by far the most popular method of estimating the cost of equity capital: 73.5% of respondents always or almost always use the CAPM." CAPM has commonly been used not only by financial practitioners in the business world (Warnes and Warnes, 2014) but also in academic research (e.g., Shah and Butt, 2009; Panitantum, 2015). The equation uses to calculate expected returns following CAPM is:

$$E(R_i) = R_f + \beta_i (R_m - R_f) \tag{1}$$

Where

 β_i = the Beta of the asset i.

It measures the sensitivity of the firm return to the benchmark market return. In financial academic research, the calculation of the cost of equity model has evolved from the ex-post to the ex-ante implied cost of equity. The ex-post accounting based cost of equity model involves historical returns such as CAPM and the Gordon model. Recently, much of the literature (e.g. Chen et., 2009; El Ghoul et al., 2011; Cao et al., 2015; Chu et al., 2014) calculate the cost of equity using the ex-ante implied cost of equity.

The ex-ante cost of equity has been calculated by various models. The concept based on the underlying valuation is separated into two types that are residual income valuation and abnormal earnings growth valuation (Hail and Leuz, 2006). There are four models, used in academic research to derive an ex-ante cost of equity (e.g. Chen et., 2009; Guedhami and Mishra, 2009; El Ghoul et al., 2011; Cao et al., 2015; Chu et al., 2014). Two of these models derived from Claus and Thomas (2001) and Gebhardt et al., (2001) are based on the residual income valuation. Another two models based on abnormal earnings growth valuation are developed by Ohlson and Juettner-Nauroth (2005) and Easton (2004). "The basic idea of all four models is to substitute price and analyst forecasts into a valuation equation and to back out the cost of capital as the internal rate of return that equates current stock price with the expected future sequence of residual incomes or abnormal earnings" (Hail and Leuz, 2006, p.491).

In addition, a modified PEG ratio model of Easton (2004) and is based on Ohlson and Juettner-Nauroth (2005) is also used in academic studies (El Ghoul et al., 2011). To calculate the abnormal earnings growth, this model uses 1-year-ahead and 2- year-ahead earnings forecasts plus 1-year-ahead expected dividend per share (Hail and Leuz, 2006). The model assumes that "growth in abnormal earnings persists in perpetuity after the initial period" (Hail and Leuz, 2006, p. 526). Thus, after two years of the explicit forecasting, the earnings growth is at a constant rate.

Modified PEG Ratio Model of Easton (2004)

$$P_t = \frac{FEPS_{t+2} + R_{PEG} * DPS_{t+1} - FEPS_{t+1}}{R_{PEG}^2}$$

Where

 $R_{PEG} = Cost of equity.$

- P_t = Market price of a firm's stock at date t.
- $FEPS_{t+\tau}$ = Expected future earnings per share for period (t+ τ_{-1} , t+ τ) using either explicit analyst forecasts or future earnings derived from growth forecasts g, g_{st}, and g_{lt}, respectively.
- $DPS_{t+\tau}$ = Expected future net dividends per share for period (t+ τ_{-1} , t+ τ), derived from the dividend pay-out ratio times the earnings per share forecast $FEPS_{t+\tau}$
- R_{PEG} = Implied cost of capital estimates calculated as the internal rate of return solving the above valuation equations, respectively.

Following previous studies mentioned before, this study uses the capital asset pricing model (CAPM) approach to estimate the cost of equity. The CAPM approach is also used to examine the association between the cost of equity and CEO power empirically. Prior research proposes several methods to determine the cost of equity. However, it is not conclusive to which method is the best one (Collins and Huang, 2011). This study chooses the CAPM to tackle the cost of equity because the CAPM is accepted in practical and recent academic research still uses it. In addition, an ex-ante cost of equity will be used in this research as a robustness check on the results. To robust the results, the modified PEG ratio model of Easton (2004) will be used to as alternative method for calcuating the cost of equity.

3.1.2 Measuring CEO Power

Top executives' power plays a crucial role in strategic decision making (Finkelstein, 1992), thus many academic researchers try to measure the power of top executives. Although the executive power is not directly observable, and power cannot be measured precisely or quantifiably, it can be observed by the qualitative procedure (Chassagnon, 2012). Many experts propose several ways to measure CEO power in both quantitative and qualitative methods (Chassagnon, 2012). Several researchers create many proxies to measure CEO power (Finkelstein, 1992; Ashbaugh-Skaife et al., 2006; Bebchuk et al., 2011; Lewellyn et al., 2012). For example, Ashbaugh-Skaife et al. (2006) propose that the greater the number of board committees the CEOs serve, the less power the CEOs have because they were more influenced by the committees. As such, they use

the number of board committees as a measurement of CEO power. Bebchuk et al. (2011) propose that the CEO's pay slice (CPS) can be used as a proxy to capture the power of CEOs. They refer that CEO's pay slice is a useful proxy because it connects to corporate outcomes such as the firm's value, profitability, and stock market reactions. The CPS is defined as "the CEO's total compensation as a fraction of the combined total compensation of the top five executives" (Bebchuk et al., 2011). "Total compensation includes salary, bonus, other annual pay, long-term incentive payouts, the total value of restricted stock granted that year, the Black-Scholes value of stock options granted that year, and all other total compensation" (Chintrakarn et al., 2014, p.565).

In addition, many studies often use other proxies to measure CEO power such as the proportion of outside directors (Main et al., 1995), CEO duality (Kim et al., 2009), CEO tenure (Chen and Zheng, 2014), and CEO ownership (Huang et al., 2009). However, an individual variable or a dimension may not be appropriate to capture the entire CEO power. Finkelstein (1992) offers four dimensions to measure CEO power that are labeled as structural, ownership, prestige and expert power. This study has already stated that CEO power has enormous effects on the corporate outcomes. Thus, it is better to measure CEO power in many dimensions. For this reason, this study employs four dimensions of CEO power based on Finkelstein's (1992) study because it can get through the effects of each aspect of CEO power by using many constructs.

3.1.2.1 Structural Power

CEO structural power stems from their formal position. Thus, it has legitimate authority over subordinates (Finkelstein, 1992). It is related to the hierarchical structure of an organization (Finkelstein, 1992; Wu et al., 2011). Finkelstein (1992) uses three variables that are the percentage of higher titles, compensation, and a number of titles. Finkelstein (1992) proposes the scale to measure the structural power of the executives in an organization, and he attempts to measure the distribution of formal positions of executives. Thus, it is not exactly in line with the structural power of CEOs. Many researchers have applied the concept of structural power in several aspects and use many scales to measure CEO power. For example, Wu et al. (2011) use two dummy variables to measure structural power: dual and insider director. Lewellyn et al. (2012) refer that

the most common proxies of CEO structural power used in empirical research are the proportion of board independence and a dual leadership structure.

In many studies, compensation is used as a proxy for CEO structural power. Daily and Johnson (1997) use three dummy variables to capture CEO structural power: namely, CEO duality, interdependent directors, and CEO's total cash compensation. Bebchuk et al. (2011) use the CEO's pay slice (CPS) as a proxy to capture the power of CEOs. Usually, compensation is paid to the scales following the hierarchical level in an organization and its information relates to the power (Finkelstein, 1992). Thus, CEO structural power can be indicated from the compensation. Bebchuk et al. (2011), Nanda et al. (2013) and Ting (2013) use the CEO's pay slice (CPS) as a proxy to capture the structural power.

In Thailand, the annual report does not disclose the compensation paid to CEOs. Instead, it reveals the compensation paid to the executive team. Therefore, compensation is excluded from this study because the data cannot be collected. Based on the assumption about structural power, CEOs receive structural power from a hierarchy of their organization and from the ability to influence the decisions made by the board and the president. Following Daily and Johnson (1997) and Lewellyn et al. (2012), this study uses duality and board independence to measure CEO structural power.

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Duality

If CEOs are also the chairman of the board of directors, they will be involved in the procedure of awarding compensation for themselves. It is questionable that they will perform that duty without satisfying their own interest (Pérez and Fontela, 2006). Also, as the chairman of the board of directors, CEOs are also involved in the appointment of directors. If CEOs are also the chairman of the board of directors, CEOs will have the greatest power. Many prior studies (e.g., Daily and Johnson, 1997; Wu et al., 2011; Lewellyn et al., 2012; Nanda et al., 2013; Bach and Smith, 2007; Ting, 2013) use duality to measure CEO structural power. Consistent with experts, this study uses a dummy variable by taking the value of one if the CEO serves both as the CEO and the board chair, and zero otherwise.

Board Independence

When the monitoring mechanism is strong, the level of CEO power will be reduced (Lewellyn et al., 2012). The board structure is considered as an internal control mechanism (Harjoto and Jo, 2009). CEO can sometimes interfere the board of directors especially if the CEO is also the chairman of the board of directors. Thus, the role of the board to monitor may be not efficient. However, part of the board of directors is composed of independent boards. A number of scholars (Fredrickson et al., 1988; Westphal and Zajac, 1995), Lewellyn et al., 2012) summarize that "A number of studies have shown that boards with a majority of independent outside directors are more effective in overseeing management and mitigating the power of CEOs". In other words, the more the independent directors, the lower the CEO power. This study uses board independence to capture CEO structural power by calculating the ratio of independent directors to total directors. Opposing with other dummy variables to measure CEO power, this dummy variable will be used by taking the value of one if the ratio of independent directors is below the sample median and zero otherwise.

3.1.2.2 Expert Power

This study defines the CEO expert power as ability, knowledge and experience of coping with uncertainties of the firm's environment successfully. Several pieces of academic research try to capture the expert power by using proxy variables. For example, Finkelstein (1992) proposes three variables to measure the executive's expert power that are critical expertise power, functional areas and positions in the firm. Wu et al. (2011) use two dummy variables to capture the expert power: certificate and tenure. Bach and Smith (2007) use industry experience to classify the functional expert power of CEO. They suggest that it is the time that CEO have spent in the industry, as the expert power.

Many variables are suited to measure CEO expert power, such as industry tenure and functional areas, suggested by experts; however, it is hard to access the data for Thai firms. However, the data of some good proxies capture CEO expert power, such as CEO tenure and certificate are still available in the annual report. Consistent with Wu et al. (2011), this study uses two proxies to measure CEO expert power: CEO tenure and certificate.

CEO Tenure

Two points are referred to in academic research concerning CEO tenure. First, many scholars supported that CEO tenure increases the CEO's influence over the board and thus increases CEO power (e.g., Hermalin and Weisbach, 1988; Lewellyn et al., 2012). Thus, the longer the CEOs stay in the business, the higher the CEO ability to exert influence over the board. Thus, CEO power is increased. Second, Chaganti et al. (2005), as quoted in Ting (2013), stated that the longer CEOs stay in the position, they more they become familiar with the business environment and their knowledge will be increased. This study uses tenure to capture CEO expert power by calculating the total number of years that the CEO has served the position (Lewellyn et al., 2012; Pérez and Fontela, 2006). A dummy variable will be used by taking the value of one if the ratio of tenure is above the sample median and zero otherwise.

Certificate

Wu et al. (2011, p.84) state that "CEOs with professional certificates usually have more knowledge and information about firm affairs than directors, and they may limit the directors' access to such information. Thus, these advantages provide CEOs with more power to influence the decision-making process". Thus, gaining more certificates, CEOs will have more knowledge and ability to cope with a complicated environment, in this case, the CEO expert power will be increased. This study measures CEO's certification by taking the value of one if the CEO has at least one professional certificate and zero otherwise.

3.1.2.3 Ownership Power

According to the agent-principal relationship, CEO ownership is an important indicator of power because it affects both management and shareholder (Wu et al., 2011). To measure executive's ownership, Finkelstein (1992) proposes three indicators that are executive shares, family shares, and founder or relative. Following Finkelstein (1992), Daily and Johnson (1997) use two measures of ownership power of the CEO in their study that are CEOs' shareholdings and CEO's founder status. Many studies (e.g., Adams et al., 2005; Morse et al., 2011; Nanda et al., 2013) conclude that CEOs are likely to be more powerful when they are founders of the firm. Wu et al. (2011) suggest that the institutional

investors with shareholdings are a useful mechanism because they can monitor CEO power by putting constraints on top executive decision-making. Thus, they use two proxies for the CEO ownership power: institutional investors' shareholding and CEO ownership. Similar to Wu et al. (2011), Lewellyn et al. (2012) give credit to top outsider ownership as the ability to reduce CEO power. So Lewellyn et al. (2012) use two proxies for the CEO ownership power: top outsider ownership and CEO ownership.

As already mentioned, CEO power can sometimes directly effect the board of directors by controlling them in the direction of their own agenda; especially, when CEOs stay for long tenure or hold the title of the chairman of the board of directors. Differently from the board of directors, top outside ownership or an institutional investor is considered as external monitoring that can reduce the agency problem caused from CEO power (Gillan and Starks, 2003). CEO power cannot directly control them. Institutional ownership is used as a proxy of corporate governance. Institutional ownership is classified as an external corporate governance mechanism. Thus, it should not be used as a proxy for CEO power. Also, institutional ownership strongly affects CEO power when it acts as a corporate governance mechanism to monitor the CEOs' job. Therefore, this study will not use the institutional ownership as a proxy to measure CEO power. Consistent with experts, this study will use two variables to measure the ownership power which are CEO Ownership and founder.

CEO Ownership

The higher the CEO stock ownership is, the greater ability the CEO can mitigate influencing by the board and to make own decisions (Nanda et al., 2013). Thus, the more CEOs own stock, the greater significance the CEO power is. Consistently with experts (Bach and Smith, 2007; Daily and Johnson, 1997; Laan, 2010; Pérez and Fontela, 2006), this study uses CEO stock ownership to capture CEO ownership power by calculating the percent of total shares owned by the CEO to total shares outstanding. A dummy variable will be used by taking the value of one if the ratio CEO stock ownership is above the sample median and zero otherwise.

Founder

If CEOs are also the company's founder, they will be more influential in the decision-making (Adams, et al., 2005; Finkelstein, 1992). Thus, if CEOs are also the founder, CEOs will have higher ownership power. Many prior studies (e.g., Daily and Johnson, 1997; Adams et al., 2005; Cheikh, 2014; Nanda et al., 2013; Liu and Jiraporn, 2010) use the founder position as a proxy to measure CEO ownership power. Following Adams et al. (2005) and Cheikh (2014), this study estimates founder by taking a value of one if the CEO is one of the company's founders and zero otherwise.

3.1.2.4 Prestige Power

There are several sources used to capture prestige power. Finkelstein (1992) emphasizes that prestige power is derived from the role of outside directorships and education. Daily and Johnson (1997) capture the prestige power by using several proxies such as service on corporate boards, nonprofit boards and holding degrees from elite educational institutions. Bach and Smith (2007) capture a level of CEO prestige power using board memberships and an elite education. Wu et al. (2011) use two variables that are education and outside service to measure the level of CEO prestige power. This study uses education and outside service of CEOs who serve as directors of other firms to capture the prestige power.

Education

The level of the CEOs' prestige can be derived from their educational background (D'Aveni, 1990). Finkelstein (1992) refers to a list of elite college and universities when he measure prestige power. Daily and Johnson (1997) measure prestige power by checking whether the CEO attended a prestigious undergraduate or graduate institution or did not. The list of elite colleges is not available in the database used in this study and Thai people like to study abroad for undergraduate or graduate degree. Therefore, it is hard to justify which university is elite. Following Wu et al. (2011), this study measures education by considering if the CEO has a master's degree or above, the variable is valued one and zero otherwise.

Outside Service

CEOs who have a service with other organizations as a director are referred to as being in demand and having a reputation (Lewellyn et al., 2012). This service brings CEOs prestige power because other organizations realize their ability. In addition, other firms have connections, this merits prestige. Consistent with Daily and Johnson (1997) and Lewellyn et al. (2012), this study captures the outside service as directors of other firms by taking the value one if CEO serves on the other firms' boards of directors and กมยนุติ ปล zero otherwise.

3.1.2.5 CEO Power Index

Similarly to scholars, this study constructs a CEO power index based on Finkelstein (1992) who divided CEO power into four dimensions, namely, structural, ownership, prestige and expert power. Based on these four dimensions of power, several academic research constructs form the CEO power index (e.g., Liu and Jiraporn, 2010; Wu et al., 2011; Ting, 2013; Cheikh, 2014; Nanda et al., 2013). However, their methods used to construct the CEO power index are different. Several methods are used to create the CEO power index. For example, Nanda et al. (2013) use seven variables to measure CEO power that are duality, triality, insider director, CEO pay slice (cps), tenure, CEO ownership and founder of the firm. They measure each variable by taking the value of one if each indicator variable is above the sample median and zero otherwise. The CEO power index is constructed by summing up each indicator variable. Thus, the CEO power index ranges from 0 to 7 (Nanda et al., 2013).

Following Bebchuk (2009), Liu and Jiraporn (2010) use CEO pay slice (cps) as a proxy for CEO power. However, they robust their tests by using a CEO power index that is constructed from five variables: duality, triality, CEO only an insider, the CEO is the only person signing the letter to shareholders in the annual report and founder of the firm. They measure each indicator variable by taking a value of one if each indicator valuable meets the condition and zero otherwise. The CEO power score is calculated by adding one when each of the criteria is met. Thus, the CEO power index ranges from 0 to 5 (Liu and Jiraporn, 2010).

Ting (2013) uses five variables to capture CEO power that are duality, CEO only an insider, CEO ownership, tenure and number of director positions the CEO holds in other firms. Each indicator variable is equal to one if its value is equal to or higher than its median value. After that, the CEO power index is constructed by adding each score of all five variables ranging from 0 to 5. They classify CEO power into two types: high and low. If the CEO power index is equal to or greater than 3, CEO power is classified as high power. If the CEO power index is less than 3, CEO power is classified as low power.

Adams et al. (2005) capture CEO power by using three proxies; triality, CEO only insider, and founder of the firm. Each indicator variable takes the value of one if each of the criteria is met and zero otherwise. They get CEO power score by adding one for each indicator variable if it meets the criteria. They divide CEO power into two types; low and high. If the average of their aggregate power index is in the fifth quintile, CEO power is classified as high power. If the average of their aggregate power.

Wu et al. (2011) measure CEO power using eight variables that are duality, insider director, certificate, industry tenure, CEO ownership, institutional investors' shareholding, education level and outside service. These variables are collected with two different scales; nominal scale and ratio scale. In their study, some variables are nominal scales and categorized as either "Yes" or "No" such as duality, insider director, certificate, CEO education level, and outside service. So, they use dummy variables for these indicated variables. Each of these indicated variables is scored by taking the value of one if the criteria is met and zero otherwise. Other variables use ratio scales, such as industry tenure and institutional shares, so they are scored by taking the value one if an indicator variable is above the sample median and zero otherwise. Finally, all eight variables used to capture CEO power are represented in dummy variables. Two methods are used in their study to construct the CEO power index. First, they use a principal components methodology. Second, the average value of the eight dummy variables is used to conduct the CEO power index.

In conclusion, this study employs CEO power measurement based on four dimensions of Finkelstein (1992). For the structural power, this study uses two proxy variables that are duality and board independence. For expert power, this study uses two

proxies to measure the CEO expert power: CEO tenure and certificate. For ownership power, this study uses only one variable to measure CEO ownership power that is CEO ownership. Due to the collection data problem of CEO founder, this variable is omitted in this study. For prestige power, this study uses education and outside service to capture the prestige power. Consistently with Wu et al. (2011), Adams et al. (2005) and Jiraporn (2010), this study chooses to construct the CEO power index by summing score of each variable that meets the criteria. Then the scores will be the average value of the seven dummy variables. The review of the four dimensions of CEO power, proxies of each dimension and CEO power index are presented in Table 3.1.

Table 3.1 Definitions of Proxies that Measure CEO Power of Four Dimensions and the CEO Power Index

Dimension	Variables	Measurement	Reference
Structural Power	Duality	Takes value of one if CEO is also serving as Chairman of the Board of Directors and zero otherwise	Daily and Johnson, 1997; Wu et al., 2011; Morse et al., 2011; Lewellyn et al., 2012; Nanda et al., 2013; Bach and Smith, 2007; Ting 2013; Liu and Jiraporn, 2010
ລີປສີ Copy A I I	Board independence	The ratio of independent directors to total directors. Takes the value one if it is above the sample median and zero otherwise	Daily and Johnson, 1997; Lewellyn et al., 2012
Expert Power	CEO tenure	Takes the value one if CEO tenure is above the sample median and zero otherwise	Nanda et al., 2013; Ting, 2013; Wu et al., 2011
	Certificate	Takes value of one if CEO has at least a professional certificate and zero otherwise	Wu et al., 2011

Table 3.1 Definitions of Proxies that Measure CEO Power of FourDimensions and the CEO Power Index (Continued)

Dimension	Variables	Measurement	Reference
Ownership	CEO	The percent of total shares	Bach and Smith,
Power	ownership	owned by the CEO. Takes	2007; Daily and
		the value one if it is above	Johnson, 1997;
		the sample median and zero	Laan, 2010; Pérez
		otherwise	and Fontela, 2006
Prestige	Education	Takes value of one if CEO	Wu et al., 2011
Power	level	has a master's degree or	
		above and zero otherwise	
	Outside	Takes value of one if CEO	Daily and Johnson,
/	service	services on other	1997; Lewellyn et
110	SIL	organizations' boards of	al., 2012
	~ / ~	directors and zero otherwise	
CEO power	06	CEO power score is given by	Liu and Jiraporn,
index	縁し	summing score of each	2010; Adams et al.,
20	25-1	variable that meets the	2005; Ting, 2013;
	\sim	criteria. Thus, the CEO	Wu et al., 2011
	1 1	power index ranges from 0 to	6/
	12	7 MARIA	2//

3.1.3 Measuring Risk Taking

According to Palmer and Wiseman (1999), managerial risk taking is described as the uncertain and unpredictable outcomes that may generate significant losses causing from decision making. As risk is uncertainty, it is hard to measure it. Thus, many studies try to measure it from the outcomes such as returns and prior academic researcher measured risk taking by the volatility of returns. Bloom and Milkovich (1998) define firm's risk as the volatility in an organization's performance. They measure firm's risk in two ways: 1) variation in the firm's income stream and 2) variation in the firm's stock market return. The firm's risk has been measured by several proxies such as R&D expenditure, leverage, volatility of stock returns. Bowman (1980) uses variance in returns to measure risk taking. An et al. (2014) measure risk taking by using variance in a firm's return on assets (ROA). Many academic research measures risk taking by the volatility of returns which is calculated as the standard deviation of daily stock returns recorded over the fiscal year (Chen and Zheng, 2014; Cheikh, 2014; and Low, 2009). Hayes and Qiu (2012) capture firm's risk from annualized standard deviation of stock returns measured over the previous three years. John et al. (2008) consider that riskier firms have more volatile returns to capital, so they measure risk taking by using three proxies that are the market-adjusted volatility of firm-level earnings, a country average of the volatility of firm earnings and an imputed country risk score, based on industry risk characteristics.

In addition, Miller and Bromiley (1990) suggest that a different measurement of firm's risk is used in academic research because of various stakeholders' aspect to risk. They suggest that risk can be measured from income stream risk, stock returns risk, and strategic risk. The income stream risk, stock returns risk, and strategic risk. The income stream risk, stock returns risk, and strategic risk capture risk from the perspective of managements, shareholders, and external stakeholders respectively (Miller and Bromiley, 1990). Profits are easier for managers and stakeholders to understand. Thus, the income stream risk is usually measured by the profits. Also, return on asset (ROA) is also commonly used when measuring the income stream risk (Bromiley, 1991). Based on the CAPM model, investors can diversify their risk. Thus the unsystematic risk is eliminated, and thus, the stock returns can be captured when measuring risk (Ross et al., 2005). Lastly, the strategic risk relates to the choice of a firm's technology. Thus, R&D intensity and capital intensity are used to indicate that risk (Miller and Bromiley, 1990).

In summary, risk taking is an unobservable construct and it is difficult to measure it directly. To measure risk taking, it must rely on observable actions such as outcomes from business experiences. Firm's risk is overall risk and it is an important outcome of CEO investment decisions. Therefore, firm's risk is used to measure risk taking by many previous scholars (e.g., Coles et al., 2006; Chakraborty et al., 2007; Acharya et al., 2011; John et al., 2008). Following these previous scholars, this study is designed to capture risk taking through its outcomes and uses firm's risk to capture CEO risk taking. Miller and Bromiley (1990) classify firm's risk into three major categories: stock returns risk, income stream risk, and strategic risk. As mentioned, previous empirical research has provided various measures to assess firm risk. Some studies measure firm's risk from return uncertainty which reflects historical fluctuations or variability of return, so they suggest that firm's risk is captured by calculating the standard deviation of ROA (An et al., 2014; Faccio et al., 2015; Miller and Bromiley, 1990) and the standard deviation of ROE (Miller and Bromiley, 1990). Following previous research, this study uses volatility of returns to measure firm's risk and the standard deviation of ROA and the standard deviation of ROE are used as proxies for instability of returns.

3.1.4 Measuring Corporate Governance

As mentioned earlier, corporate governance, acting as a mechanism can reduce the agency cost created by CEO power. Shareholders will require fewer risk premiums when firms have good corporate governance mechanisms. As a result, the cost of equity should be lower for those firms. Two corporate governance devices are chosen for this study framework: 1) institutions ownership as an external corporate governance mechanism and 2) the corporate governance score from the Thai IOD, which is reported in the Corporate Governance Report (CGR) every year.

Institutions Ownership

Institutional investors as equity owners are considered an important external corporate governance mechanism (Gillan and Starks, 2003). With a large equity stake in the invested firms, the important role of institutional investors acts as a monitoring device. When the role of institutional investors, acting as shareholder monitoring is effective, they have the incentive to collect information and monitor the management (Shleifer and Vishny 1997). Shleifer and Vishny (1986) suggest that these investors are able to reduce agency cost problems and the extent of information asymmetry between managers and shareholders. Consequently, the reduction of agency cost leads to a decrease in the cost of equity (Shleifer and Vishny, 1986). In addition, as the owners of the firm, institutional investors have certain rights such as voting rights and the right to elect the board of directors. However, when the firms' performance is poorer, rather than take the monitoring action, the institutional investors may have incentives to sell their stock instead (Coffee, 1991). Al-Najjar (2010) suggests another role of institutional investors, which is signaling good performance when trading the shares.

The institutional investors have the potential to influence management activities in two ways (Mahdavi et al., 2012). First, because of their ownership, the institutional investors have rights to vote at annual general meetings. Thus, they directly affect CEOs' decision making. Second, institutional investors invest money on behalf of other investors. Therefore, they buy and sell large amounts of shares. As a result, their trading affects stock prices. Institutional investors include banks, insurance companies, pension fund associations, investment companies, and others (Mahdavi et al., 2012).

Tong and Ning (2004) suggest that institutional investors are not the same as individual investors because they can access different information resources. Thus, when comparing these two types of investors, institutional investors are more active in monitoring the firm's management performance than individual investors (Tong and Ning, 2004).

Prior studies suggest that the type of institutional investor acts as a mechanism to reduce agency cost. Ferreira and Matos (2008) divide the institutional ownership into two groups 1) domestic institutional ownership and 2) foreign institutional ownership. Gillan and Starks (2003) suggest that foreign institutional investors play a central role in promoting change in many corporate governance systems. In addition, two dominant monitoring hypotheses of institutional investors are proposed in academic studies these are active monitoring hypothesis and passive monitoring hypothesis. According to scholars (e.g., Chen et al., 2007; Ferreira and Matos, 2008; Almazan et al., 2005), institutions can be classified according to the potential for business ties to a corporation as active (independent) versus passive (grey) institutions. Follow Almazan et al. (2005), active institutional investors are bank trust departments and insurance companies.

Ferreira and Matos (2008) study the relationships between types of institutional investors and firm valuation. They find that only the ownership by foreign and independent institutions has a significantly positive effect on the firm's valuation, but not the ownership by domestic and grey institutions.

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Many pieces of evidence support that institutional investors are active in their monitoring role. Hartzell and Starks (2003) show that institutional ownership is negatively associated with the level of executive compensation and positively related to pay-for-performance sensitivity. Parrino et al. (2003) show that institutional selling is

related to forced CEO turnover and that these CEOs are more likely to be replaced by an outsider. In conclusion, the monitoring role of the institutional investor acts as a mechanism that can reduce the agency risk.

Consistent with those scholars, this study tests the mechanism of institution ownership to reduce the agency cost. Following previous studies (e.g., Hartzell and Starks, 2003; Kim and Lu, 2011; Almazan et al., 2005), this study uses the sum of the top five institutional investors'share ownership to measure institutional ownership.

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Corporate Governance Score

Does the corporate governance score affect the costs of equity? The corporate governance score, developed by the Thai Institute of Directors (Thai IOD), is reported in the Corporate Governance Report (CGR). The Thai IOD was founded in 1999 two years after the 1997 Asian financial crisis. It is a non-profit, membership organization and it is supported by the Securities and Exchange Commission, the Stock Exchange of Thailand, the Bank of Thailand, and the Foundation for Capital Market Development Fund, as well as international organizations such as the World Bank. The objective of the Thai IOD is to support director professional knowledge and skills, and to develop the good corporate governance of public firms in Thailand. Thus, it helped establish professional standards of directors and provides best practice guidelines for companies' directors. The Thai IOD started to survey Thai's listed firms' corporate governance in 1991. Each firm is compared at each level by the number of symbols earned from the National Corporate Governance Committee.

The Thai IOD scoring criteria is strongly influenced by the Organization for Economic Cooperation and Development (OECD) Principles of Good Corporate Governance and by the Stock Exchange of Thailand. Thai corporate governance corresponds with OECD principles and classifies corporate governance into five categories: the rights of shareholders, the equitable treatment of shareholders, the role of stakeholders, disclosure and transparency, and board responsibilities. The CGR is announced every year to the public by the Thai IOD, so it will be useful for firms' stakeholders including shareholders.
There are 148 criteria in the following five categories; rights of shareholders has 24 items, equitable treatment of shareholders has 16 items, roles of stakeholders has 18 items, disclosure and transparency has 36 items, and board responsibilities has 54 items.

In 2015, the CGR included 235 criteria in the following five categories; Rights of Shareholders, Equitable Treatment of Shareholders, Role of Stakeholders, Disclosure and Transparency and Board Responsibilities. The information source of the CGR comes from company's annual report, annual information filing (Form 56-1), notice and minutes of companies' shareholders meetings, company websites, and information on the SET/SEC database and other publicly available information. The CGR shows the score of the corporate governance assessment of listed companies. The survey result of the corporate governance score of Thai listed companies is presented in symbols and is reported in the Corporate Governance Report (CGR). In this CGR publication, firms are classified into six groups according to their corporate governance score, and only the well-performing firms are classified into the three highest score groups and announced to the public. The scoring and the symbols are as follows:

	AL AREA	
Score	Range Number of Logo	Description
	AT INTITLE	
90-100	Leither Andread Leither Andrea	Excellent
80-89		Very Good
70-79		Good
60-69		Satisfactory
50-59	S èsterne	Pass
Below 50	No logo given	N/A

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Table 3.2CG scoring and Symbols

Source: Corporate Governance Report of Thai Listed Companies (2010)

The symbol of each public firm is opened to the public each year. Thus, it is facilitating investors to incorporate this CG assessment into their investment decision.

Hodgson et al. (2011) study the Thai IOD corporate governance index of Thai listed companies from 2001to 2006. They find a positive relationship between the Thai IOD corporate governance index and the firm's performance using ROA, ROE, CFO, FCF, and sales per employee. The result is the same when using the market to book value, stock returns, and Tobin's Q to capture the firm's value. They conclude that "the Thai IOD corporate governance index is financially meaningful and is positively correlated with firm performance in Thailand." Thus, the stakeholders benefit from this information, especially creditors and investors.

The information on the corporate governance index will release useful information to investors. As the owners of funds that flow to the firm, investors will have this information to support them when making the decision to invest money into each company listed in the stock market. This study gauges the strength of corporate governance by using the corporate governance score that is reported by the Thai IOD. The companies are divided into two groups: high and low. If the firms get the excellent, very good or a good level, it is classified as a high corporate governance score. If the firms get the satisfactory, pass or no recognition level, it is classified as a low corporate governance score.

3.1.5 Measuring Cost of Debt

The cost of debt cannot be observed directly. Scholars measure the firms' cost of debt as the interest expense for the year divided by the average of the total short-term and long-term debt (Pittman and Fortin, 2004; Hashim and Amrah, 2016). This study tackles the cost of debt from the Bloomberg database which measure the firms' cost of debt as following:

Cost of Debt = [[(SD/TD) * (CS * AF)] + [(LD/TD) * (CL * AF)]] * [1-TR]

Where:

SD = Short to	erm debt
---------------	----------

TD = Total debt

CS = Pre-tax cost of short term debt

- AF = Debt adjustment factor (The debt adjustment factor represents the average yield above government bonds for a given rating class. The lower the rating, the higher the adjustment factor. The debt adjustment factor (AF) is only used when a company does not have a fair market curve (FMC))
- LD = Long term debt
- CL = Pre-tax cost of long term debt
- TR = Effective tax rate

3.2 Corporate Governance Effect

In academic research, there are two methods to identify if a variable is a moderator. First, it is the interaction analysis. Baron and Kenney (1986) suggest that a moderator is a variable that effects the zero-order correlation between an independent and dependent variable. In other words, the moderator variable is able to change the direction of correlation of these variables. Baron and Kenney (1986) suggest a moderator model by testing the interaction of an independent variable and another variable in regression analysis. If the interaction of these two variables is significant to the dependent variable, then the variable that interacts with the independent variable is a moderator variable. Seconds, is subgroup analysis. Sharma et al. (1981) suggest splitting the sample into subgroups (the same homologize group) and repeating the regression analysis. Thus, this study will test the corporate governance effect as the moderator effect to the relationship between CEO power and cost of equity.

3.3 Risk Taking Effect

Following the Mediator Model seen in figure 2.3 on page 34, Barron and Kenny (1986) suggested that a mediator is an intervening variable between independent and dependent variables and it will act as a mediator only when we control Paths a and b, a previously significant relation between the independent and dependent variables is no longer significant. Later, the mediator effects can be split into two types. According to Mathieu and Taylor (2006), the intervening effects can be either indirect effect or mediator, and the mediator can be classified as either a full or partial mediator. They suggest the diagram tree to test the intervening effect as shown in Figure 3.2. Thus, to classify the mediator effect, we can follow the Mathieu and Taylor (2006) diagram.

In addition, this study tests the mediator effects based on Baron and Kenny's (1986) model. They recommended using regression of three equations which can be summarized as following.



Figure 3.1 Diagram of Paths in the Mediator Model

As mentioned earlier in chapter 2, to test the mediator effect, Barron and Kenny (1986) suggested that there are at least three conditions of mediation to be met. First, (1) the independent variable must significantly predict the mediator (i.e., Path (a)); (2) the mediator must significantly predict the outcome variable (i.e., Path (b)); and (3) when Paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant. Therefore, according to Barron and Kenny (1986) conceptual and statistical recommendations, this study used four steps to test the mediation effect. First, the risk is regressed on CEO power to establish that Path (a) is significant. Second, the cost of equity is regressed on CEO power to establish that Path (b) is significant. Finally, the cost of equity is regressed on both CEO power and risk to establish Path (c'). To test this complicated model, the structural equation model will be employed in this study.

3.4 Regression Model

Main regression model

This study constructs the following models to examine the hypothesis. The models used in our regression analyzes are as follows:

$$COE_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$$
(1)

$$COE_{it} = \alpha_0 + \alpha_1 CPower_{it} + \alpha_2 CG_{it} + \alpha_3 AGE_{it} + \alpha_4 SUR_{it} + \alpha_5 ROA_{it} + \alpha_6 MBV_{it} + \alpha_7 SIZE_{it} + \alpha_8 LEV_{it} + \alpha_9 INDDummy_{it} + \alpha_{10} YearDummy_{it} + \varepsilon_{it}$$

$$(2)$$

$$COE_{it} = \gamma_0 + \gamma_1 CPower_{it} + \gamma_2 CG_{it} + \gamma_3 CEOsPower_{it} * CG_{it} + \gamma_4 AGE_{it} + \gamma_5 SUR_{it} + \gamma_6 ROA_{it} + \gamma_7 MBV_{it} + \gamma_8 SIZE_{it} + \gamma_9 LEV_{it} + \gamma_{10} INDDummy_{it} + \gamma_{11} YearDummy_{it} + \varepsilon_{it}$$
(3)

$$RISK_{it} = \delta_{0} + \delta_{1}CPower_{it} + \delta_{2}AGE_{it} + \delta_{3}SUR_{it} + \delta_{4}ROA_{it} + \delta_{5}MBV_{it} + \delta_{6}SIZE_{it} + \delta_{7}LEV_{it} + \delta_{8}INDDummy_{it} + \delta_{9}YearDummy_{it} + \varepsilon_{it}$$
(4)

$$COE_{it} = \beta_0 + \beta_1 Risk_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$$
(5)

Where

The subscripts i and t denote firm and time, respectively

COE _{it}	=	Cost of equity
CPower _{it}	=	CEO power
CG _{it}	ຄ	Corporate governance score/ Institutional ownership
CPower _{it}	* CC	G _{it} = CEO power * Governance score
AGE _{it}	-	CEO age
SUR _{it}	A	CEO surname is measured as the number of board members that have the
		same surname with CEO's.
ROA _{it}	=	Return on assets = operating income to total assets
MBV _{it}	=	Market-to-Book is calculated as the market value of equity to the book
		value of equity.
SIZE _{it}	=	Firm size (LogMV) is measured as the natural logarithm of the market
		value
LEV _{it}	=	Total debt / total asset

61

RISK_{it} Risk taking = the volatility of returns =

The control variables included in this study are primarily based on prior literature. The control variables are firm size, book-to-market, leverage, and return on assets. The detail of each control variables is presented in Table 3.3.

Variables	Predicted sign	Calculation	Equation Model
ROA	1/2	Return on assets defined as operating income to total assets	1,2,3,4,5
MBV	Be	The market value of equity to the book value of equity	1,2,3,4,5
SIZE		Firm size is measured as the natural log of market value of equity	1,2,3,4,5
LEV	ŧ	Leverage ratio defined as the ratio of total debt to total assets	1,2,3,4,5
Control varia	bles	MAI UNIVERSIT	

 Table 3.3
 Predicted Sign of the Control Variables of Each Model

Control variables

Return on assets (-)

Return on assets (ROA) is measured by the ratio of the operating income to total assets. The ROA ratio is used as a proxy for firm performance (Adams, et al., 2005; Ramly, 2012). Prior empirical studies suggest that profitable firms tend to have a lower cost of equity (Francis et al., 2005; Ramly, 2012; Cao et al., 2015). Consistent with previous research, this study anticipates the negative relationship between return on assets and the cost of equity.

Market-to-book ratio (-)

Market-to-book (MB) ratio is measured by the ratio of the market value of equity to the book value of equity. Firms with high investment opportunities are expected to have long-term growth and higher prices, thus lower the cost of equity (Fama and French, 1992; Gebhardt et al., 2001; Guedhami and Mishra, 2009; Chu et al., 2014; Ramly, 2012). Prior studies use market-to-book as a proxy for expecting investment opportunities and find a negative relationship between market-to-book and the cost of equity (Hail and Leuz, 2006; Guedhami and Mishra, 2009). Consistent with prior studies, this study expects the higher market-to-book will have a lower cost of equity.

Firm size (-)

Firm size is measured as the natural log of the market value of equity at the end of fiscal year. Prior research suggests that a large firm size enjoys a low cost of equity (e.g., Huang, 2006; Fama and French 1992; Ashbaugh et al., 2004; Cheng et al., 2006; Hail and Leuz, 2006). There are several reasons that support the relationship. For example, larger firms are more stable than smaller companies, thus, they enjoy a lower cost of equity (Ashbaugh et al., 2004; Cheng et al., 2006; Hail and Leuz, 2006). In addition, larger firms appear to have a lower risk, thus a lower cost of equity (Regalli and Soana, 2012). Consistent with prior empirical research, this study expects the negative sign between the firm size and the cost of equity.

Leverage (+)

Leverage (LEV) is measured by the ratio of the total debt to total assets. According to previous studies, the higher leverage ratio is associated with, the higher cost of equity (e.g., Fama and French, 1992; Cheng et al., 2006; Ramly, 2012). The reasons behind this are that the higher the leverage, the greater the agency cost. Hence, the cost of equity is higher (e.g., Fama and French, 1992; Cheng et al., 2006; Ramly, 2012). Also, the credit risk will be increased when the leverage is higher, thus, the cost of equity will be increased (Huang et al., 2006).

CEO Age (-)

AGE is used as a control for the level of risk aversion of CEOs. Older CEOs may not want to undertake risky projects because they are approaching to retirement (Cohen et al., 2004). Thus, risk taking is lower when CEOs are getting old. The low risk is expected to have the low return.

Industry Dummy

Industry differences (INDDummy) are a dominant factor in the variation of the cost of equity (Gebhardt et al., 2001; Chen et al., 2009; Ramly, 2012). Industry dummy is used to control of perfect multicollinearity. Eight Industry differences are used for Thailand listed firms namely Agro & Food Industry, Consumer Products, Financials, Industrials, Property & Construction, Resources, Services and Technology.

Year Dummy

Year Dummy (YearDummy) is a dummy variable equal to one if the year is 2010, 2011, 2012, 2013 or 2014, otherwise it is equal to zero.

3.5 Data Collection and Sample

Sample

This study uses the data of the listed companies on the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (mai). The data covers the period of 2011 to 2014 and is taken from financial statements and annual reports provided by the Stock Exchange Commission (SEC) and the SET. From both the SET and the mai market, we collect the data from both markets since 2011 to 2014. The missing variable in each field is excluded. Finally, we use 1,033 firm-years for this research.

Source of data and UKION Source of data and UKION

The research uses data from four separate sources that are the annual reports, Bloomberg database, DATA STREAM database, and SET Market Analysis and Reporting Tool (SETSMART) on-line service. CEO power is hand-collected data, and it obtaines from the company website, company annual reports and notes to the financial statement. The Thai IOD corporate governance index is collected from Thai IOD websites. The financial data to calculate firms' risk and the cost of equity such as stock price, return on asset, and earning per share ratio of listed companies arecollected from the Bloomberg database, DATA STREAM database, and SETSMART on-line service.

3.6 Analysis Method

Multiple regression analysis is used to test our hypothesis. The primary objective of this study is to examine the relationship between CEO power and the cost of equity. This study first establishes that there is a significant relationship between CEO power and the cost of equity. First, this study runs a regression for the main effect, that is, to establish whether there is a relationship between CEO power and the cost of equity as expected. Initially, this study tests the direct relationship without any control variables, and then control variables are included one at a time. We also include corporate governance in the full model to see if corporate governance changes the relationship between CEO power and the cost of equity. For mediator effect, the regression analysis is not appropriate since the intermediate variable will act both as an impact of some constructs and as a cause of other constructs.

To test the mediation effect, four conditions have to be met. (1) CEO power must significantly relate to the cost of equity; (2) CEO power must significantly relate to risk taking (the mediator); (3) risk taking (the mediator) must significantly relate to the cost of equity; and (4) the relationship of between CEO power and the cost of equity is diminished when risk taking is in the model.

For the indirect effect test, this study considers an intermediate variable that is risk taking which helps to explain how CEO power influences the cost of equity. With the mediation analysis, this study can gain more information and understand the mechanism action of risk taking. This study employs Structural Equation Modeling (SEM) to test whether risk taking acts as a mediator. SEM is a very powerful technique to examine the mediating effect and it is appropriate to use when having many constructs. This study uses AMOS to perform structural equation modeling. This software shows hypothesized relationships among many variables and it can test the direct and indirect effect of those relationships. The model is represented by path diagrams with each diagram consisting nodes. Each node represents the variables and arrows between them show the relationship among them. With these path diagrams, this study can decompose the association of the relationship between CEO power and the cost of equity into the indirect path to test the mediated effect of risk taking.

CHAPTER 4

Results

4.1 Descriptive Statistics of CEO Power Variable

Table 4.1	CEO Powe	er Variables
	0101000	

	Mean	Median	Minimum	Maximum	Std.	N
	Wiedh	Weenan	winningin	Waximum	Deviation	1
CDu	1	0	0	1	0.356	1033
PCBI	0.377	0.364	0	0.875	0.112	1033
CTNUR	3319	2740	17	12024	2592	1033
CCER	1.01	1	0	3	0.751	1033
COWN	6.095	0.45	0	61.52	10.907	1033
CEd		3	0	4	0.696	1033
COutS		0	0		0.476	1033

The sample size is 1033 firms. Sample period is during the year 2010 to 2014. CDu (Duality) is measured as taking the value of one if the CEO is also serving as the chairman of the board of directors and zero otherwise. PCBI (Board independence) is measured as the ratio of independent directors to total directors. CTNUR (CEO tenure) is measured as total days serving as CEOs. CCER (CEO certificate) is the number of professional certificates obtaining by CEOs attend the skill courses for management from the IOD (Thai Institution of directors). COWN (CEO ownership) is measured as the percent of total shares owned by the CEO. It takes the the value one if it is above the sample median and zero otherwise. CEd (CEO education level) is measured as taking value of 0,1,2,3 and 4 if the CEO has a degree of primary school, secondary school, bachelor, master and doctor respectively. COutS (CEO outside service) is the number of listed firms that the CEO serves on other organizations' boards of directors and zero otherwise

Table 4.1 shows the mean, median, minimum, maximum and standard deviation of the variables used to construct the CEO power index. The mean average and median of board independence (PCBI) are 0.377 and 0.364 respectively: this implies that Thai listed firms have outside directors at about 30%. In addition, the mean and median of CEO tenure are 3319 days and 2740 days respectively. The longest CEO tenure is 12,024 days or 32.88 years. CEO certificate (CCER) represents the number of professional certificates that CEOs gain when they attend the skill courses for management from the IOD (Thai Institution of directors) such as the Strategic Executive, Risk Management Plan, Anti-Corruption in Practice. The education level of CEOs ranges from primary school to

doctoral degree. The median of CEO education level is 3. This shows that the average CEOs level is at the bachelor's degree level. The median of CEO outside service is 0 respectively. This figure shows that very few CEOs serve other listed firms as a board of director.

CEO Power Index

To construct a CEO power index, this study uses four dimensions based on Finkelstien (1992). The four dimensions are structural power, expert power, ownership power and prestige power and each dimension uses two proxy variables as mentioned before. To measure the ownership power, CEO ownership and founder are normally used; however, the founder is excluded from this study due to the limitation of data available. This study collected this data from news and companies' websites and less than 50 firms voluntarily give this information to the public. There would be a lot of missing data for this variable if it is used to measure CEO power index. Thus, this variable is excluded in this study. In summary, the seven proxies used to construct a CEO power index are duality, board independence, CEO tenure, certificate, CEO ownership, education level and outside service. Each indicator variable takes the value of one if each of the criteria is met and zero otherwise. CEO power index is constructed on the same approach of Wu (2011), Adams et al. (2005), and Liu and Jiraporn (2010) to construct the CEO power index. The CEO power score is calculated by summing score of each variable that meets the criteria.

Table 4.2 shows the results of each proxy that is used to get the CEO power index. Following previous researchers (Adams et al. 2005; Lewellyn et al. 2012; Nanda et al. 2013 and Ting, 2013), each indicator variable is a dummy variable which takes the value of one if each of the criteria is met and zero otherwise. However, CBI (Board independence) is measured as taking the value one if it is below the sample median and zero otherwise. According to Harjoto and Jo (2009), the board structure is considered as an internal control mechanism and when this mechanism is strong, it can lessen the level of CEO power. The CEO power score is calculated by summing score of each variable that meets the criteria, thus, the CEO power index ranges from 0 to 7. The mean average of CEO power index is 3. CEO power index calculated from this part will be referred as "CEO power" for all other parts of the analysis.

Table 4.2CEO Power Index

				1	Di	mension	n of Pow	/er						
	Structu	ıral pow	ver	ab	Expert	power		Va	Ownersh	ip power	Pres	tige po	ower	
Variable	CDu		CBI	N.	CTNU	R	CCER	°4	COWN		CEd		COut	S
Value	0	1	0	1 /	0	1 (P)	0	1	0	1	0	1	0	1
Frequency	879	154	572	461	523	510	259	774	642	391	434	599	674	359
Percent	85.09	14.91	55.37	44.63	50.63	49.37	25.07	74.9	62.15	37.9	42	58	65.3	34.8
			1324		1	CEO pov	ver inde	X	1225					
Value	0	1	2	3	4	500	6	7	Total					
Frequency	19	91	226	284	247	137	23	6	1033					
Percent	1.8	8.8	21.9	27.5	23.9	13.3	2.2	.6	100.0					

89

The sample size is 1033 firms. Sample period is during the year 2010 to 2014. CDu (Duality) is measured as taking the value of one if CEO is also serving as chairman of the board of directors and zero otherwise. CBI (Board independence) is measured as taking the value one if it is below the sample median and zero otherwise. CTNUR (CEO tenure) is measured as taking the value one if CEO tenure) is measured as taking the value one if CEO tenure is above the sample median and zero otherwise. CCER (CEO certificate) is measured as taking the value of one if CEO has at least a professional certificate and zero otherwise. COWN (CEO ownership) is measured as taking the value of one if CEO has a master's degree or above and zero otherwise. COutS (CEO outside service) is measured as taking the value of one if CEO serves on other organizations' boards of directors and zero otherwise

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	Mean	Median	Minimum	Maximum	Std. Deviation	Ν
COE	11.966	11.556	3.705	23.288	3.217	1033
CPower	3.144	3.000	0.000	7.000	1.334	1033
AGE	56.692	57.000	31.000	94.000	8.739	1033
SUR	0.809	0.000	0.000	6.000	1.339	1033
ROA	10.726	9.880	-31.410	62.740	8.288	1033
MBV	2.214	1.580	0.210	20.500	2.101	1033
SIZE	22.549	22.420	18.303	27.578	1.688	1033
LEV	0.414	0.426	0.009	0.893	0.192	1033
StdROA	4.470	3.690	0.049	24.465	3.407	1033
StdROE	7.577	5.772	0.279	38.670	5.985	1033
CG	0.827	1.000	0.000	1.000	0.379	1033
INSTown	31.507	29.508	0.000	96.780	25.880	1033

Table 4.3Descriptive Statistics of Variables

Variable definitions: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. AGE (CEO age) is measured age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset. Risk taking is captured by firm's risk which is calculated as the annual standard deviation of return on assets (StdROA) and return on equity (StdROE) over a period of five years. CGs (CG score) equals one if the firm has CGs more than 3 and zero otherwise. INSTown (institutions ownership) is percentage of top five institutional investors' share ownership.

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The descriptive statistics for the variables used in our regression model are presented in Table 4.3. The cost of equity (COE) shows that the mean (median) is 11.966 (11.556) with a minimum of 3.705 and a maximum of 23.288. The median value for CEO power in our sample is 3. The youngest CEO is 31 years old and the oldest CEO is 94 years old. The CEO age mean (median) is 56.692 (57). This implies that Thai listed firms tend to hire senior CEOs. Corporate governance (CG) is a moderator in this study and this included two types of CG (CG score and institutions ownership). The CG score is divided into two levels which are 0 and 1. If the firm has a 0 CG score it means that this firm has poor corporate governance. If the score is 1, it means it is a good governance firm. The institutions ownership is measured as a percentage of the top five institutional investors' share ownership and it shows that the mean (median) is 31.507 (29.508).

Table 4.4 Pearson Correlation Matrix of Variables

	COE	CPower	AGE	SUR	ROA	MBV	SIZE	LEV	StdROA	StdROE	CG	INST Own
COE	1		10	6			10					
CPower	$.065^{*}$	1	112	1	0900		400					
AGE	072*	.157**	1	<	国際に	>	12					
SUR	0.059	.230**	.151**	1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-	1 >	116				
ROA	-0.039	0.035	$.066^{*}$	0.017	1.1.1.	1	~ / ~					
MBV	$.076^{*}$	-0.006	0.035	0.049	.520**	1	d	25				
SIZE	.299**	0.009	0.038	0.042	.233**	.440**	1 9	37				
LEV	.383**	-0.045	089**	-0.036	205**	$.180^{**}$.281**	1				
StdROA	.145**	110**	0.056	-0.001	.074*	.085**	-0.038	099**	1			
StdROE	.305**	066*	0.002	0.045	-0.017	.143**	0.007	.268**	.709**	1		
CG	.120**	0.059	062*	-0.017	.114**	0.054	.170**	0.023	077*	078*	1	
INSTOwn	155**	231**	087**	221**	-0.021	0.022	.156**	-0.022	-0.037	105**	0.033	1
Ν	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033

*, ** indicate significance at the 5%, and 1% levels respectively for a two-tailed test

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Variable definitions: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. AGE (CEO age) is measured age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset. Risk taking is captured by firm's risk which is calculated as the annual standard deviation of return on assets (StdROA) and return on equity (StdROE) over a period of five years. CGs (CG score) equals one if the firm has CGs more than 3 and zero otherwise. INSTown (institutions ownership) is percentage of institutional investors' share ownership. reserve

Table 4.4 presents the Pearson correlation matrix between variables. This study performs the Pearson correlation test to gain an insight into the relationship between variables. The results of this correlation also act as a preliminary indication of the multicollinearity problem. The result shows that CEO power is significantly positively correlated with the cost of equity (COE) and CEO age (AGE). In contrast, it shows significantly negatively correlation with risk taking (StdROA and StdROE). In addition, the cost of equity is significantly correlated with almost every variable except ROA. The correlation coefficients of variables that have positive correlation with the cost of equity are leverage, size, StdROE, StdROA, growth (MBV) and CEO power (.383, .299, .305, 145, .076, and .065) respectively. It is noteworthy that, there is a significant positive correlation between COE and CEO power confirming that higher (lower) CEO power face a higher (lower) cost of equity. Return on assets shows negatively with the cost of equity and leverage. It implies that the lower cost of equity and lower leverage. firms enjoy the higher return on assets. In contrast, return on assets shows significantly positively correlations with CEO age, growth, size, firm's risk (stdROA) and the corporate governance score. It confirms that the firms with the higher degree of CEO power, the older CEO, growth, big size and good governance enjoy the higher return on assets. The correlation coefficients between growth and size shows significantly positively correlations at 0.440. A significantly positive correlation (0.156) between size and institutions ownership indicates larger firms tend to be held by institution ownership. In this study, there are two types of corporate governance used to reduce agency cost, corporate governance score and institutions ownership. The corporate governance score is also significantly positively correlated with the cost of equity, CEO power, and return on asset, growth, and size. However, it shows significant negative correlation with firm's risk (StdROA and StdROE). The strongly significant negatively association between the corporate governance score and firm risk, suggests that good corporate governance firms tend to have less risk than poor corporate governance firms. It implies that good corporate governance firms do not like to take risk. There is a significant negative correlation between institutions ownership and the cost of equity, CEO power, CEO age, CEO surname and firm's risk (StdROE). These results indicate that firms held by high institutions have low CEO power. Also, these firms are less likely to take risk and have

low cost of equity. Overall, the correlation coefficients from table 4.4 are not that high to cause the multi-collinearity problem

4.2	Model	1: Main	Effect of	Regression	Analysis
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Variables	Coefficients	t	VIF
Intercept		2.24	
CPower	0.055*	2.108	1.102
AGE	-0.044	-1.674	1.106
SUR	0.033	1.231	1.142
ROA	0.002	0.065	1.752
MBV	-0.045	-1.295	1.96
SIZE	0.191**	6.221	1.536
LEV	0.206**	6.605	1.578
Industry Dummies	Yes		71-11
Year Dummies	Yes	2	30%
R^2	d'	0.374	38
Adjust R ²	T	0.364	
Durbin-Watson		1.892	131
Ν		1033	191

Table 4.5 Pooled Regression of CEO Power and the Cost of Equity

*, ** indicate significance at the 5%, and 1% levels respectively for a two-tailed test. Coefficients for year and industry dummy variables not reported.

Notes: The table shows the pooled results derived from the estimation of the following model: $COE_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$ where: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. AGE (CEO age) is measured age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's.. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset. CGs (CG score) equals one if the firm has CGs more than 3 and zero otherwise. INSTown (institutions ownership) is percentage of top five institutional investors' share ownership. N denotes the sample size.

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Regression Analysis

This study performs a multiple regression analysis to test the hypothesis. The main objective of this analysis is to test the relationship between CEO power and the cost of capital. This study hypothesizes that that there is a significant relationship between CEO power and the cost of equity. Therefore, first, we run a regression analysis for the main effect, that is, to establish whether there is a relationship between CEO power and the cost of equity as expected. The result of multiple regression analysis is presented in Table 4.5. From this table, the regression result shows that CEO power is significantly positive with the cost of equity at a 1% level. It implies that an increment of CEO power associates with an increment of the cost of capital. The coefficient of CEO power is 0.055 and it is significant at a 5% level. This result, therefore, provides statistical support for Hypothesis 1. In this regression model, the control variables described in the earlier section are included.

The control variables in our regression model are CEO age, CEO surname, return on assets, growth, size, and leverage. CEO power, size and leverage are positively with the cost of equity and their coefficients are 0.55, 0.191 and 0.206 respectively. The coefficients of CEO age, CEO surname, ROA and growth are not significant to the cost of equity. The results of leverage were consistent with our expectation. However, size gave positive results which were different from what we expected. The results confirmed that firms with the higher amount of debt in their capital structure have the higher cost of equity as indicated by a strong significantly positively between the cost of equity and leverage. The empirical research has found that size is negatively related to the cost of equity (Botosan, 1997; Easton, 2004). However, we found a positive relationship between size and the cost of equity. Jensen and Meckling (1976) contends that an agency cost of a firm is affected by the amount of discretion in managerial decision-making. The agency problems can cause a higher cost of equity. Therefore, this may be a possible reason for a greater potential for CEO power to take private benefits, especially for big firms because they may be more difficult to monitor. Thus, large companies may not get a good return. This study also includes industry dummies to allow for possible industry variation in the cost of equity. In addition, this study collects data from 2011-2014, thus, year dummies are also included in our regressions to account for possible variation over time.

R square and Adjusted R square are 0.374 and 0.364 respectively. The Durbin-Watson coefficient value closes to 2.0 run tests confirm that an autocorrelation problem doesn't exist. Durbin-Watson from our study is 1.892, so there is no autocorrelation of first-order. The Variance Inflation Factor (VIF) is used to confirm that a multicollinearity problem doesn't exist and its value should be less than 10. The results of VIF from Table 4.5 show lower than 10; thus, there is not a serious multicollinearity.

4.3 Model 2: Effect of Corporate Governance

According to Baron and Kenny (1986), a moderator is a variable that affects either the strength or direction of a relationship between an independent variable and a dependent variable. In academic studies, two different approaches are used to identify the type of moderator variables: (1) Moderator Regression Analysis (MRA) is used to test the interaction effect in a regression model and (2) Subgroup analysis is used to test the difference of regression coefficients across sub-groups (Sharma et al. 1981). This study tests both approaches to detect the moderating effect (see Table 4.6, 4.7, and 4.8). According to Sharmar (1981), if the interact between CEO power and CG score is significant, this moderator interaction variable can be classified as either a quasi or a pure moderator variable. If the interaction of CEO power and the CG score is insignificant, then subgroup analysis can be used to classify the suspected moderator variable as either a homologizer variable or not a moderator variable. Two types of corporate governance variables are tested in this study; CG score and INSTown. Table 4.6 and 4.7 show the results of testing the CG score as a moderator variable and table 4.8 shows the results of testing the INSTown as a moderator variable.

	Model 1		Model 2	
Independent Variable	Beta	t-value	Beta	t-value
CPower	0.055*	2.108	.154**	2.996
CG	รับหา		.203**	3.613
CPower * CG			175*	-2.394
R ² Copyrigi	π [™] by	0.374	g Mai	0.384
Adjust R ²	righ	0.364	res	0.373
Durbin-Watson	0	1.892		1.902
Ν		1033		1033

 Table 4.6 Moderator Regression Analysis (MRA) using the CG score as Corporate

 Governance (CG)

*and ** indicate significance at the 5%, and 1% levels respectively for a two-tailed test.

Notes: The table shows the pooled results derived from the estimation of the two following models:

1) $COE_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$

3) $COE_{it} = \gamma_0 + \gamma_1 CPower_{it} + \gamma_2 CG_{it} + \gamma_3 CEOsPower_{it} * CG_{it} + \gamma_4 AGE_{it} + \gamma_5 SUR_{it} + \gamma_6 ROA_{it} + \gamma_7 MBV_{it} + \gamma_8 SIZE_{it} + \gamma_9 LEV_{it} + \gamma_{10} INDDummy_{it} + \gamma_{11} YearDummy_{it} + \varepsilon_{it}$

Where: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. Risk taking is captured by firm's risk which is calculated as the annual standard deviation of return on assets (StdROA) and return on equity (StdROE) over a period of five years. AGE (CEO age) is measured age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset. CGs (CG score) equals one if the firm has CGs more than 3 and zero otherwise. INSTown (institutions ownership) is percentage of institutional investors' share ownership. N denotes the sample size.

Table 4.6 provides the results for the regressions of model 1 and 2. Table 4.6 shows that the coefficient on the interaction between CEO power and the CG score is negatively significant to the cost of equity (β =-0.175, p<0.05). This suggests that the CG score moderates the relationship between CEO power and the cost of equity. The result shows that the positive effect of CEO power on the cost of equity is weakened when the CG score acts as a moderator between that relationship. The direct relationship between CEO power and the cost of equity is positive, but the interaction between CEO power and the CG score is important and it affects this relationship with greater influence. The CG score reflects the weakened agency cost caused from CEO power, thus a lower risk premium requirement from shareholders. As a result, the cost of equity is deceased. This supports Hypothesis 2a.

According to Sharma et al. (1981), there is a significant interaction found, thus, CG score is either a quasi or pure moderator variable. Table 4.4 shows that the CG score is significantly correlated to CEO power and the cost of equity. If the two conditions are met which are 1) the interaction between the intervene variable and the predictor variable is significant to the criterion variable and 2) the intervene variable does correlate to the criterion variable, the intervene variable is classified as a quasi-moderator variable (Sharma et al. 1981). Thus, CG is a quasi-moderator.

To understand the moderator effect better, a subgroup analysis is employed to examine the effects of CEO power on cost of equity across low vs high levels of CG score. Figure 4.1 shows that the slope of low CG firms indicate a steeper line than the high CG firms. Thus, it is interesting to find out how each group effects the relationship between CEO power and the cost of equity.



Figure 4.1 CEO Power and the Cost of Equity: Low and High Corporate Governance

Hypothesis 2 suggests that corporate governance will moderate the relationships between CEO power and the cost of equity, with the relationships being weaker in firms that have higher CG score. The relationship between CEO power and the cost of equity will be manifest when testing subgroup analysis. The results of parameter estimates that pertain to our hypothesis testing are reported in Table 4.7.

4.7 Subgroup Analy	ses by CG s	score	າລັຍ	ມເຮົ	ยงใ	หม
Moderator: CG score	Low Group	Chian	g Ma	High C	Group	sity
Alir	Beta	t-value	VIF	Beta	t-value	VIF
CEO power Index	0.133*	2.104	1.289	0.017	0.585	1.098
Number of samples	179			854		
\mathbb{R}^2	0.502			0.371		
Adjust R ²	0.449			0.358		

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*, ** indicate significance at the 0.05 and 0.01 levels respectively for a two-tailed test.

Following a sub group analysis, firms were classified into Low/High CG score groups based on the CG score. The results of two sub-groups were reported in table 4.7. This table shows that the relationship between CEO power Index and cost of equity is positively significant with the low CG score group but it has an insignificant effect for the high CG score group.

	Model 1		Model 2	
Independent Variable	Beta	t-value	Beta	t-value
CPower	0.055*	2.108	0.055	1.333
INSTown		10101	-0.089*	-1.374
CPower * INSTown	918	1EI HB	-0.044	-0.676
\mathbb{R}^2	0	0.374	0	0.388
Adjust R ²		0.364	13	0.377
Durbin-Watson		1.892	~ \	1.908
N	1	1033	\sim	1033

Table 4.8	Moderator	Regression	Analysis	(MRA)	using	Institutional	ownership as
Corporate	e Governand	ce (CG)					

*and ** indicate significance at the 5%, and 1% levels respectively for a two-tailed test.

Notes: The table shows the pooled results derived from the estimation of the two following models:

1) $COE_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$

2) $COE_{it} = \gamma_0 + \gamma_1 CPower_{it} + \gamma_2 CG_{it} + \gamma_3 CEOsPower_{it} * CG_{it} + \gamma_4 AGE_{it} + \gamma_5 SUR_{it} + \gamma_6 ROA_{it} + \gamma_7 MBV_{it} + \gamma_8 SIZE_{it} + \gamma_9 LEV_{it} + \gamma_{10} INDDummy_{it} + \gamma_{11} YearDummy_{it} + \varepsilon_{it}$

Where: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. Risk (risk taking) is a measure of volatility of stock returns calculated as the natural log of mean of the annual standard deviation of daily stock returns over a period of five years. AGE (CEO age) is measure age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset. CGs (CG score) equals one if the firm has CGs more than 3 and zero otherwise. INSTown (institutions ownership) is percentage of institutional investors' share ownership. N denotes the sample size.

Table 4.8 (p.77) provides the results for the regressions of model 1 and 2, and it shows that the coefficient on the interaction of CEO power and INSTown is statistically insignificant. Thus, INSTown is either a homologizer moderator variable or not a moderator variable.

Next, we determined whether INSTown is related to the criterion variable. The correlation analysis was presented in Table 4.4 and it showed that INSTown is significantly correlated to CEO power and the cost of equity. According to Sharma et al. (1981), if the two conditions are met which are 1) the interaction between intervene variable and predictor variable is insignificant to the criterion variable and 2) the intervene

variable correlates to the criterion variable, the intervene variable is not classified as a moderator. Thus, INSTown is not a moderator.

In addition, the results for model 2, seen in table 4.8 show that the coefficient of the relationship between institution ownership and the cost of equity is negatively significant at a 5% level (-0.089). This negative direct relationship between INSTown and the cost of equity implies that the higher the institutional ownership, the lower the cost of equity.

4.4 Model 3: Role of Risk taking as an Intervening Variable

	COE	CDowor	Staboa	StaDO
005		Crowel	SlukOA	SluKOL
COE	19/	10	a contraction	1
CPower	$.065^{*}$	1	1 Da	
StdROA	.145**	110**	PA	
StdROE	.305**	066*	.709**	1
Ν	1033	1033	1033	1033

Table 4.9 Correlation Matrix of Constructs

*, ** indicate significance at the 0.05, and 0.01 levels respectively for a two-tailed test.

Variable definitions: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. Risk taking is captured by firm's risk which is calculated as the annual standard deviation of return on assets (StdROA) and return on equity (StdROE) over a period of five years.

Table 4.9 presents the Pearson correlation matrix between the dependent, mediator and independent variables. This study performs the Pearson correlation test to gain an insight into the relationship between these variables. The results show that all variables are correlated. The correlation coefficients of variables that have high correlation with the cost of equity are CEO power, risk taking (StdROA) and risk taking (StdROE) (0.065, 0.145 and 0.305) respectively. It is noteworthy that both proxies of risk taking are significant positive with the cost of equity but it shows a strong significant negative correlation with CEO power. Therefore, risk taking may be an intervening variable of the relationship between the cost of equity and CEO power. Thus, the mediator effect will be tested in the next section.

Table 4.10 Structural Model Results for the Mediation of the Effect of CEO Power on The cost of Equity by Risk taking

Model	(1) Risktaking (Std ROA)		(2) Risk taking (Std ROE)		Result
	Standardize d parameter estimate	Р	Standardized parameter estimate	Р	
Model without mediator					
CPower 📥 COE(c)	0.101*	0.013	0.092*	0.01	H1: Supported
Model with mediator	91819	ยนดิ			
CPower \implies Risk taking (a)	-0.11**	0.009	-0.066**	0.008	
Risk taking \implies COE (b)	0.215**	0.007	0.258**	0.007	
CPower \implies COE (c')	0.077*	0.013	0.075*	0.01	H3: Partial Supported
Indirect effect (a x b)	-0.024**	0.008	-0.017**	0.014	
R ² = .252 , RMR = . 334 , GFI= .997, RMSEA	$R^2 = .260$, RM AGFI= 0.916, C	R = 0.334, CFI = 0.976 .087	GFI= 0.993, 5, RMSEA =		

Notes: The table shows the pooled results derived from the estimation of the following model: 1) $RISK_{it} = \delta_0 + \delta_1 CPower_{it} + \delta_2 AGE_{it} + +\delta_3 SUR_{it} + \delta_4 ROA_{it} + \delta_5 MBV_{it} + \delta_6 SIZE_{it} + \delta_7 LEV_{it} + \delta_8 INDDummy_{it} + \delta_9 YearDummy_{it} + \varepsilon_{it}$ 2) $COE_{it} = \beta_0 + \beta_1 Risk_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \varepsilon_{it}$ 3) $COE_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$

Where: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. Risk taking is captured by firm's risk which is calculated as the annual standard deviation of return on assets (StdROA) and return on equity (StdROE) over a period of five years. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset.

Table 4.10 shows the results from two models which use different risk taking proxies to robust the results. This section tests the indirect effect of the relationship between CEO power and the cost of equity. The moderator variable in this study is risk taking. It can be observed from the outcomes such as firm's risk (Coles et al. 2006; Chakraborty et al. 2007). This study uses two types of variables to capture risk taking (StdROA and StdROE) to robust the results. This alternative measure of risk taking was suggested from prior research (Miller and Bromiley,1990). The results are reported in table 4.10 which contains the analysis necessary to examine the role of risk taking as an intervening variable.

Baron and Kenny (1986) developed a four-step model to test for the mediation effect. This study follows Baron and Kenney's model to test for the mediating role of risk taking in CEO power and the cost of equity. The study goes though the following four steps. First, the cost of equity was regressed on CEO power. Second, risk taking was regressed on CEO power. Third, the cost of equity was regressed on risk taking. Finally, a regression analysis has indicated the effect between CEO power and the cost of equity and the effect of risk taking as a mediating variable to the cost of equity. The control variables were placed in each step of the model.

According to four steps outlined earlier of Baron and Kenny's (1986) procedure, this study first established that CEO power was related to the cost of equity, by regressing the cost of equity on CEO power (Step 1 to test path (c) in Figure 1). The cost of equity shows a significant positive relationship with CEO power for both models ((1) $\beta = 0.101$, P = 0.013, (2) $\beta = 0.092$, P = 0.01), path (c) was significant and requirement for mediation in Step 1 was met for both models.

Next, to establish that CEO power is related to the intervening variable, risk taking, we do the regression of risk taking on CEO power (Step 2 to test path (a) as shown in Figure 1). CEO power was also significantly associated with risk taking for both models $((1) \beta = -0.11, P = 0.009, (2) \beta = -0.066, P = 0.008)$, and thus, the condition for Step 2 was met for both models (Path (a) was significant). The result indicates that there is a negative relationship between CEO power and risk taking. For Step 3 to test path (b) in Figure 1, risk taking was significantly positively associated with the cost of equity controlling for CEO power ((1) $\beta = 0.215$, P = 0.007, (2) $\beta = 0.258$, P = 0.007). Path (b) was significant and condition for Step 3 was met for both models. To test whether the intervening variable, risk taking, was related to the outcome, the cost of equity, we regressed the cost of equity simultaneously on both CEO power and risk taking. This step is to test that the mediator (risk taking) has an effect on the dependent variable (the cost of equity). Step 4 to test path (c') (Figure 1) shows the effect of the independent variable (CEO power) on the dependent variable (the cost of equity), controlling the effects of the mediator. Table 4.10 presents the mediator effect and it shows that the effects of the cost of equity are "partially" mediated by the risk taking. The result shows that the influence of CEO power on the cost of equity remains significant in the presence of the mediator.

Path (c') was still significant for both models ((1) $\beta = 0.077$, P = 0.013, (2) $\beta = 0.075$, P = 0.01), although it is much smaller than path c ((1) $\beta = 0.101$, P = 0.013, (2) $\beta = 0.092$, P = 0.01). According to Barron and Kennney (1986), the results suggest that the relationship between CEO power and the cost of equity was partially mediated by risk taking. Model (1) test results R² =.25, comparative fit index (CFI) = 0.997, root mean square error of approximation (RMSEA) = 0.044 indicate a good fit of the model. Model (2) test results R² =.260; comparative fit index (CFI) = 0.976; root mean square error of approximation (RMSEA) = 0.087 indicate a good fit of the model.

In conclusion, the total effect, the relationship between CEO power and the cost of equity in the absence of the mediators was significant. The direct effect, the relationship between CEO power and the cost of equity was still significant. The indirect effects through risk taking were statistically significant and indicated a partial mediating effect of risk taking.

4.5 Robustness check

As an additional robustness check, this study uses two types of the cost of equity which is the ex-post and the ex-ante implied cost of equity to check the robustness of the effect of CEO power and the cost of equity. The first examines the cost of equity derived using the Capital Asset Pricing Model (CAPM) and the second uses forecasting earnings approaches. The CAPM has been widly used and it is the ex-post accounting based cost of equity model which involves historical returns. However, the ex-ante implied cost of equity is introduced to recently academic studies. This is because the drawback of historical data may not acculately reflect the cost of equity. The ex-ante implied cost is calcualed by substituting price and analyst forecasts into a valuation equation. Thus, the cost of capital is as the internal rate of return. Therefore, the ex-ante implied cost requires the use of the forcasting data. As mentioned earlier, there are four well known models that are used to calculate the ex-ante implied cost. However, the forcasing data is quite limited for Thai firms. From 720 listed Thai firm, the forecasting 5 years of book value per share of year 2010 to 2014 from the Bloomberg database shows less than 50 firmvears. Thus, this study uses a modified PEG ratio model of Easton (2004) to estimate the cost of equity. This model requires the dividend per share and forcasting earning per share of 3 years which is more than the available data from Bloomberg database. Substituting the cost of equity into regression equation (1), we get the results as following:

Table 4.11 shows the robustness of the two alternative measurement methods for the cost of equity. This robustness confirms the reliability of the cost of equity estimate which is the dependent variable in our model. These findings are also robust to controls for determinants of the cost of equity (CEO age, CEO surname, ROA, MBV, SIZE and LEV). Repeating the regression test shows that CEO power is significantly positively associated with both alternative proxies for the cost of equity. Both measurement methods of the cost of equity shows roughly the same pattern of positive coefficient estimate, so it is implied that the higher CEO power increases the cost of equity.



	Tu da u a u da u t								
	Variable	(Constant)	CPower	SUR	AGE	ROA	MBV	SIZE	LEV
COE (CAPM)	Beta		0.204**	0.006	0.023	0.062	-0.224**	0.153**	0.323**
	t-value	1.533	4.543	0.134	0.505	1.043	-3.624	3.168	6.102
	VIF	19.1	1.172	1.178	1.188	2.082	2.211	1.354	1.623
	\mathbb{R}^2	0.431			11	-1			
	Adjust R ²	0.402	3	2 A					
	Durbin- Watson	1.822	à	- m		彩			
	Ν	348))/				
COE (ESTON)	Beta		0.102*	-0.044	0.021	-0.265**	-0.043	-0.29**	-0.081
	t-value	7.707	2.056	-0.892	0.417	-4.02	-0.639	-5.443	-1.384
	VIF		1.172	1.178	1.188	2.082	2.211	1.354	1.623
	\mathbb{R}^2	0.31	No.		os'				
	Adjust R ²	0.274	TAL 1	VINT	En				
	Durbin-	1000		JIVI					
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Table 4.11 Alternative Measurement of the Cost of Equity

Notes: The table shows the pooled results derived from the estimation of the following model: $COE_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \varepsilon_{it}$ where: COE is the measures of cost of equity. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. AGE (CEO age) is measure age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset.

4.6 Additional Test: CEO Power and the Cost of Debt

The cost of equity is one part of a company's capital structure, which also includes the cost of debt. The firms' debt financing is also an important information for investors because it shows an idea of the riskiness of the firms. Usually, a risky firm has a higher cost of debt. Thus, this study tests how the CEO power affects the cost of debt. This study constructs the following models to examine the relationship between CEO power and the cost of debt. The models used in our regression analyzes are as follows:

 $[\]begin{aligned} COD_{it} = & \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \\ & \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it} \end{aligned}$

			111			
	Mean	Median	Minimum	Maximum	Std. Deviation	N
COD	3.263	3.220	0.110	5.420	0.740	810
CPower	3.059	3.000	0.000	7.000	1.318	810
AGE	56.494	56.000	33.000	93.000	8.751	810
SUR	0.816	0.000	0.000	6.000	1.340	810
ROA	10.422	9.635	-25.950	62.420	7.591	810
MBV	2.284	1.645	0.210	20.500	2.133	810
SIZE	22.752	22.637	18.303	27.578	1.693	810
LEV	0.454	0.464	0.059	0.893	0.174	810
	CODVIT	ent	by Chia	ing Mai	Unive	ISITV

Table 4.12	Descriptive Statistics of Variables	.0

Variable definitions: COD is the measures of cost of debt. CPower (CEO power) is CEO power index that measure of adding one of each indicator variable of CEO power in Table 4.2. AGE (CEO age) is measured age of each CEO. SUR (CEO surname) is the measure the number of board members that have the same surname with CEO's. ROA is calculated as income before extraordinary items scaled by total assets of the firm. MBV is the market value of equity to the book value of equity. SIZE is the natural log of the market value of firm. LEV is a measure of firm leverage calculated as a ratio of total debt to total asset.

Notes: The table shows the pooled results derived from the estimation of the following models:

 $COD_{it} = \beta_0 + \beta_1 CPower_{it} + \beta_2 AGE_{it} + \beta_3 SUR_{it} + \beta_4 ROA_{it} + \beta_5 MBV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 INDDummy_{it} + \beta_9 YearDummy_{it} + \varepsilon_{it}$

The descriptive statistics for the variables used to test the relationship between CEO power and the cost of debt are presented in Table 4.12. The cost of debt (COD) shows

that the mean (median) is 3.263 (3.220) with a minimum of 0.110 and a maximum of 5.420. The median value for CEO power in our sample is 3.

Variables	Coefficients	t	VIF
Intercept		4.735	
CPower	-0.075*	-2.26	1.131
AGE	-0.071*	-2.143	1.124
SUR	0.034	1.008	1.138
ROA	-0.161**	-3.843	1.792
MBV	-0.006	-0.139	2.027
SIZE	0.227**	6.061	1.435
LEV	-0.083*	-2.224	1.429
Industry Dummies	Culture	Yes	1-1
Year Dummies	1 = m	Yes	1982
\mathbb{R}^2	THE ST	0.227	902
Adjust R ²	NV y	0.21	141
Durbin-Watson	V A	1.931	181
Ν	14-14	810	N

Table 4.13 Pooled Regression of CEO Power and the Cost of Debt

*, ** indicate significance at the 5%, and 1% levels respectively for a two-tailed test. Coefficients for year and industry dummy variables not reported.

The control variables in our regression model are CEO age, CEO surname, return on assets, growth, size, and leverage. CEO power, CEO age, return on assets and leverage are negatively with the cost of debt and their coefficients are - 0.075, - 0.07, - 0.161 and - 0.083 respectively. The coefficients of CEO surname and growth are not significant to the cost of debt. Size gave a positive result. The multiple regression analysis confirmed that firms with the higher CEO power have the lower cost of debt as indicated by a strong significantly negative relationship between the cost of debt and CEO power.

CHAPTER 5

Discussion and Conclusion

In this section, we begin with a discussion of the results of our study. We then identify limitations of our study, propose suggestions for future research, and offer a few concluding comments. The results of the analysis described in this research present an interesting picture of the importance of how CEO power effects on the cost of equity.

5.1 Summary and Discussion of Research Findings

While early studies demonstrate some determinants of the cost of equity such as return, leverage and information asymmetry, few have mentioned CEO power as a determinant of the cost of equity. In this paper, we have presented the results of an empirical study of both the direct and indirect effect impact of CEO power on the cost of equity. This study focused on four dimensions of CEO power and constructed a CEO power index. Based on Finkelstein, 1992, CEO power is the ability to cope with the uncertainty of companies and he suggested four dimensions of power; namely, structural power, expert power, ownership power and prestige power. Table 4.2 (p.68) shows the dimension of each proxy that is used to construct the CEO power index.

In addition, this study estimates the cost of equity using the Capital Asset Pricing Model (CAPM). It is a model developed by Sharpe (1964) and Lintner (1965). It measures the sensitivity of the firm return to the benchmark market return and the expected return is calculated from historical data. While the ex-post cost of equity is widely used and is easy to estimate, past returns may not be a good predictor of future returns. Recent academic research prefers to use the ex-ante implied cost of equity, thus this study examines the alternative proxies for the cost of equity. The modified PEG ratio approach is used to check the reliability of the cost of equity. The main regression model is robust across the alternative proxies reported in Table 4.11 (p.83).

In the literature (Liu and Jiraporn, 2010), CEO power has a positive influence on the cost of debt. But previous studies do not mention whether CEO power affects the cost

of equity. This study confirms that CEO power is significantly and positively associated with the cost of equity at a 5% level (see Table 4.5). Thus, Hypothesis 1 is supported and it shows that CEO power influences a higher cost of equity. This study contributes to the existing literature by enhancing the conclusion that CEO power behaves as a predictor variable of the cost of equity. Without knowing this, our understanding of the determinants of the cost of equity is limited to factors that are not related to management power. Previous studies suggest factors that determine the cost of equity include risk, growth, leverage, firm performance, asymmetry information, and disclosure level. These results from this research can infer that firm's equity financing and risk taking decisions relate to CEO power. The Agency theory implies that an agency problem exists between CEOs (agents) and shareholders (principals) (Jensen and Meckling, 1976). CEOs who have power which is delegated from shareholders do not act in the best interests of shareholders, thus, the agency cost exists. When CEO power maximizes CEO's wealth, the agency cost is high. Shareholders require a high-risk premium for this kind of firm; as a result, the cost of equity is increased.

Shleifer and Visny (1997, p. 737) suggest that "corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment." This implies that corporate governance is an effective control mechanism to ensure that managers act in the best interests of shareholders' wealth. The aim of corporate governance is to mitigate or moderate the agency problem. Therefore, the second aim of this study is to examine a possible moderating effect of corporate governance. This study contributes to the existing literature by providing a comprehensive understanding of the moderating role of corporate governance on the relationship between CEO power and the cost of equity.

Corporate governance has grown significantly in Asia over the last decade after the Asian financial crisis in 1997. In Thailand, the corporate governance principles that reflect best practices of the Organization for Economic Cooperation and Development (OECD) and World Bank are fully implemented by listed firms since 2008. The Thai Institute of Directors Association (Thai IOD) was founded in 1999, two years after the 1997 Asian financial crisis. This organization is a non-for-profit, membership organization supported by the Thailand capital market core institutions such as the

Securities and Exchange Commission (SEC), The Stock Exchange of Thailand (SET), and The Bank of Thailand (BOT). The fundamental objectives of the Thai IOD are to improve director professionalism and corporate governance in Thailand. In addition, the Thai IOD has conducted the Corporate Governance Report (CGR) of the Thai listed companies since 2001. The assessment criteria of the CGR were based on the principles of good corporate governance by the OECD Principles of Corporate Governance and by the SET. Furthermore, Gillan and Starks (2003) suggest that the important role of institutional investors is also a monitoring device. They hold a large equity stake in the listed firms, so they have the incentive to collect information and monitor their management (Shleifer and Vishny 1997). In summary, the CG score and institutional ownership affect the agency cost of CEO power. Thus, this study uses the CG score and institutional ownership as moderator variables to the relationship between CEO power and the cost of equity.

Moderation effect is detected by examining interaction effects of a dependent variable and a moderator variable. Table 4.6 (p.74) and 4.8 (p.77) show the Moderator Regression Analysis (MRA) of the interaction term. Table 4.6 (p.74) shows the results of the regression analysis of two models using the CG score as corporate governance (CG) factor. The relationship between CEO power and the cost of equity and the relationship between the CG score and the cost of equity can be seen in Model 1 and Model 2 in Table 4.6 (p.74) respectively. Model 1shows that CEO power is positively significant to the cost of equity (β = 0.055, p<0.05), so this results confirm Hypothesis 1.

Model 2 shows the interaction of CEO power and the CG score is negatively significant to the cost of equity (β = -0.175, p<0.05). Hypothesis 2a suggests that the CG score moderates the relationship between CEO power and the cost of equity. Thus, the result from Model 2 in Table 4.6 supports Hypothesis 2a. This result suggests that the CG score affects the direction of the relation between CEO power and the cost of equity. Additionally, the result suggests that the CG score reduces the strength of the agency cost caused by CEO power; as a result, the risk premium required by investors is deceased. It implies that good CG can mitigate CEO power from taking their own private benefits, so investors satisfy and accept a reasonable return when they invest in companies which have good CG score. Furthermore, the sub group analysis reported in table 4.7 confirms

that firms which have low CG score suffer the higher cost of equity. The results of sub group analysis shows that for firms of low CG score, the CEO power is positively significant to the cost of equity (B=0.133, p<0.05).

In summary, these empirical results might be traced back to two explanations. First, the CG score is related to CEO power and it benefits firms by decreasing the agency cost. As a result, it lessens the cost of equity. Secondly, the criteria used for the Corporate Governance Report (CGR) that reported the CG score of listed firms captures the entrenched shareholders' wealth cause by CEO power very well. Thus, shareholders consider the CG score when they invest in those listed firms and require low risk premiums when these firms have good corporate governance.

Table 4.8 (p.77) shows the results of the regression analysis of two models using institutional ownership as a corporate governance (CG) factor. Table 4.8 reports the regression analysis results of Model 1 and Model 2. Model 1 shows that CEO power is positively significant to the cost of equity (B= 0.055, p<0.05). Model 2 shows that institutional ownership is negatively significant to the cost of equity (B= -0.089, p<0.05). But it shows that CEO power*institutional ownership (interaction term) is an insignificant interaction. The result from these models shows that institutional ownership meets two conditions suggested by Sharma et al. (1981) which are 1) the interaction term is insignificant and 2) institutional ownership is not a moderator. Therefore, Hypothesis 2b is rejected. An interesting point from Model 2 in Table 4.8 is that institutional ownership is a factor determining the cost of equity. The result shows a significantly negative relationship between institutional ownership and the cost of equity and it implies that a higher institutional ownership enjoys a lower cost of equity.

This study also emphasizes that CEO power has both a direct and indirect effect on the cost of equity. For the indirect effect, CEOs risk taking is an intervene variable between this relationship. Hypothesis 3 suggests that Risk taking mediates the relationship between CEO power and the cost of equity. The mediator test in Table 4.10 helps to confirm Hypothesis 1: CEO power is positively related to the cost of equity and to confirm Hypothesis 3: Risk taking mediates the relationship between CEO power and the cost of equity. Following Baron and Kenny (1986) and Mathieu and Taylor (2006), the results of the mediating effect show a partial mediating effect of risk taking to the relationship between CEO power and the cost of equity (Table 4.10). To robust the results, this study use different proxies to capture risk taking shown in Table 4.11. Table 4.11 shows two models. The first model uses the annual standard deviation of return on assets (StdROA) as risk taking and the second model use annual standard deviation of return on equities (StdROE) as risk taking. The results show that both a direct and indirect relationship between CEO power and the cost of equity exist. The direct relationship between CEO power and the cost of equity shows a positively significant relationship. More interesting is that the result of indirect effect indicates that there is a negatively significant relationship between CEO power and risk taking and there is a positively significant relationship between risk taking and the cost of equity. When risk taking is a mediator in the model, the total effect of the relationship between CEO power and the cost of equity still give a positively significant result. But this total effect is less strong than the direct effect. This implies that CEO risk taking can lessen the strength of the relationship between CEO power and the cost of equity, and powerful CEOs do not prefer risky projects. The higher power that CEOs have, the lower they take risky projects.

In conclusion, the result confirms that risk taking is an intervene variable that impacts the relationship between CEO power and the cost of equity. The result of the mediating effect supports the Agency theory that powerful CEOs are self-interested and do not prefer to take the risky project. The result of the relationship between CEO power and risk taking is in contrast to the behavioral approach system. According to the behavioral approach system, powerful CEOs will focus on the potential reward aspects of risky behavior and do not consider the potential threats (Anderson and Berdahl, 2002).

This study estimates the cost of equity using the Capital Asset Pricing Model (CAPM). It is a model developed by Sharpe (1964) and Lintner (1965). It measures the sensitivity of the firm's return to the benchmark market return and the expected return is calculated from historical data. While the ex-post cost of equity is widely used and is easy to estimate, past returns may not be a good predictor of future returns. Recent academic research prefers to use the ex-ante implied cost of equity, thus, this study examines the alternative proxies for the cost of equity. The modified PEG ratio approach is used to check the reliability of the cost of equity. Table 4.11 shows the robustness of the main

regression model across the alternative measurement methods of the cost of equity. Both measurement methods of the cost of equity show a positively significant relationship with CEO power.

From the empirical results, this comprehensive empirical study contributes to the existing literature by providing a comprehensive understanding of the moderating role of corporate governance and the mediating role of risk taking on the relationship between CEO power and the cost of equity. To our knowledge, this is the first study to examine the direct and indirect relation between CEO power and the cost of equity. In summary, these results are important not only for theoretical contribution, but also for practical contributions. If the criteria for evaluating corporate governance are improved, stakeholders such as legislators and investors can use the CG score to evaluate the quality of listed firms. The major contribution of this study is that the findings may be generalized to the other countries within a different context.

Furthermore, this study runs an additional test to determine the effect of CEO power. Since the cost of debt is one part of the cost of capital. This study further tests the relationship between CEO power and the cost of debt to find out how the CEO power effect to the cost of debt. It shows an interesting result that the higher CEO power, the lower the cost of debt. It implies that a powerful Thai CEO can enjoy lower cost of debt (Table 4.13).

5.2 Limitations of the Study

The major limitation of this study is that forecasting data of earning per share, return on equity and book value provided by Bloomberg database offers not many firms. Thus, the estimating method for the cost of equity suggested by Claus and Thomas (2001), Gebhardt et al. (2001) and Ohlson and Juettner-Nauroth (2005) cannot be completed.

5.3 Future research

With respect to future research, each dimension of CEO power may be conducted to further our understanding of their effect to the cost of equity. This additional knowledge will give more advanced information to stakeholders.

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APPENDIX

Definitions of the Research Variables

Variable	Symbol	Variable	Definition
САРМ	E(R _i)	Expected cost of equity	Expected cost of equity for firm i,
	R _f	Risk-free asset	Return on the risk-free asset
	R _m	Market rate	Return on the market rate
	ßi	Beta of the asset i	Beta measures the sensitivity of the firm return to the benchmark market return. Beta is estimated using monthly return
Structural Power	CDU _{it}	Duality	Takes value of one if CEO is also serving as Chairman of the Board of Directors and zero otherwise
	PCBI _{it}	Board independence	The ratio of independent directors to total directors. Takes the value one if the proportion of independent directors is above the sample median.
Expert Power	CTNUR _{it}	CEO tenure	Takes the value one if CEO tenure is above the sample median and zero otherwise
	CCER _{it}	Certificate	Takes value of one if CEO has at least a professional certificate and zero otherwise
Ownership Power	COWN _{it}	CEO ownership	Takes the value one if CEO tenure is above the sample median and zero otherwise
Prestige Power	CEd _{it}	Education Level	Takes value of one if CEO has a master's degree or above and zero otherwise
	COutS _{it}	Outside service	Takes value of one if CEOs service on other organizations' boards of directors and zero otherwise
CEO Power Index	CPower _{it}	CEO power index	The sum of each indicator variables (CDU _{it} , PCBI _{it} , CTNUR _{it} , CCER _{it} , COWN _{it} , CEd _{it} , COutS _{it}) if it met the criteria

Variable	Symbol	Variable	Definition
CG	INSTO WN _{it}	Institutional ownership	The sum of the top five institutional investors' share ownership
	CGs _{it}	CG score	The corporate governance score from Thai IOD, which reported in the Corporate Governance Report (CGR) every year
Risk taking	StdROA _{it}	The volatility of returns	The annual standard deviation of return on assets (StdROA)
	StdROE _{it}	The volatility of returns	The annual standard deviation of return on equity (StdROE) over a period of five years
Control variable	SIZE _{it}	Firm size	Firm size is measured as the natural logarithm of total assets
	MBV _{it}	Market-to- Book	Market-to- Book (MB) is calculated as the market value of equity to the book value of equity
	LEV _{it}	Leverage	Leverage ratio defined as the ratio of total debt to the market value of equity
	ROA _{it}	Return on assets	Return on assets defined as operating income to total assets

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AI UNIVER

Curriculum Vitae

Author's Name	Mrs. Duangnapa Sukhahuta
Date/Year of Birth	January 25, 1969
Place of Birth	Samut Songkhram Province, Thailand
Education	1992 Bachelor of Science, Srinakharinwirot University
	1994 Master of Business Administration in Finance,
	Chaminade University, Honolulu, Hawaii, USA
//	1998 Master of Science in Accounting, University of East
// a	Anglia, Norwich, UK
Publication	Lonkani, R. and Sukhahuta, D. The Relationship between
दि	Executive Compensation, Employee Compensation, and Firm
	Value, European Journal of Economics, Finance and
	Administrative Sciences, Issue 59.
Experience	2006 - Present Lecturer, Faculty of Business Administration,
	Maejo University
	AI UNIVER

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