THE MEDIATING EFFECT OF ACCRUALS QUALITY ON THE RELATIONSHIP BETWEEN AUDIT COMMITTEE CHARACTERISTICS AND THE COST OF CAPITAL: EMPIRICAL EVIDENCE FROM THAILAND

SOMSAK JINTAWATTANAGUL

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY PROGRAM IN BUSINESS ADMINISTRATION
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Dissertation Advisor	Assistant Professor Nuchjaree Pichetkun, Ph.D.
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ABSTRACT

This study aimed to investigate the mediating effects of accrual quality on the relationship between audit committee characteristics and the cost of capital. The audit committee characteristics consisted of accounting experts, legal experts, multiple directorships, the tenure of audit committee members, female audit committee members, audit committee independence, audit committee size, meeting frequency, and audit committee members' ages. The cost of capital was defined as the cost of debt and the cost of equity. The samples used in the study were listed Thai non-financial companies from 2010 to 2012. Univariate correlations and multivariate statistical analysis, which are multiple regression models, were used in this study at 95% confidence interval.

The results of the study showed that firms with a low accrual quality had a low cost of debt and a low cost of equity. The accrual quality was a mediating variable between audit committee characteristics and the cost of capital. The findings were not consistent with previous researches. Firms with an increased multiple directorships and older audit committee members had a high accrual quality and a high cost of capital. Firms with a decreased audit committee size had a high accrual quality and a low cost of capital.

The results also showed that firms with more audit committee accounting experts, a higher audit committee independence, and a larger audit committee size had a low cost of debt. Firms with less audit committee meeting frequency and young audit committee members had a low cost of debt. Furthermore, firms with low multiple

directorships had a low cost of equity. The effects of audit committee meeting frequency, audit committee members' ages, and multiple directorships on the cost of capital were not consistent with previous researches. According to the Thai investors' perspectives, audit committees meeting more often might show that the companies had problems that needed be solved or lacked planning. Audit committees were likely to be old, had an obsolete view on work, and work inefficiently. Moreover, audit committee members who served on various boards might not have enough time to monitor the specific committee effectively. These problems resulted in the high cost of capital.

In conclusion, these results revealed that audit committee characteristics, consisting of accounting experts, audit committee independence, audit committee size, meeting frequency, and audit committee members' ages, had direct effects on the cost of capital. Multiple directorships, audit committee size, and audit committee members' ages had indirect effects on the cost of capital through accrual quality as a mediating variable. Apart from this, the regulators could use the findings to promote the benefits of implementing good corporate governance or giving incentives to listed firms to practice better corporate governance in order to better protect investors in the Thai capital markets. In addition, investors could make better investment decisions based on the quality of the audit committee characteristics.

Keywords: accrual quality, audit committee, cost of capital

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CHAPTER 1
INTRODUCTION

1.1 Background and Statement of the Problem

All business has the ultimate goal of creating added value to the business and reaping the greatest benefits for the business owners. Some managers try to do everything to maximize their own economic wealth without consideration of the potential impacts upon any given individual. However, the returns that they receive are only short-term and cannot create added value to the firm over the long term. Good governance or corporate governance has a role in adding value to the business and creates the highest return for shareholders and stakeholders with the expected returns for shareholders representing the cost of capital. This is considered the minimum return that investors require on their investment.

In the past decade, corporate governance has become a popular area of discussion worldwide. The Organization for Economic Cooperation and Development (OECD) shows that corporate governance is an important step in building market confidence and encouraging more stable, long-term international investment flows. Besides, corporate governance as a contributor to the efficient use of resources builds sustainable growth and can lower the costs of capital (The Organization for Economic Cooperation and Development, 2004). Additionally, a study by Claessens and Yurtoglu (2013) found that firms with better corporate governance receive benefits from better performance, greater access to financing, and lower costs of capital.

Previous research assigns the audit committee a very influential role within the governance structure. The audit committee is integral in financial reporting quality, which is the most important information for investors in making their decisions. In addition, the audit committee can increase the ability of the board of directors to monitor management (Menon & Williams, 1994) and lead to a decrease in the opportunistic behavior of management and information asymmetry (Lorca, Sanchez-Ballesta, & García-Meca, 2011).

However, there are so few pieces of research about the relationship between audit committee characteristics and the cost of capital. The reasons for this may stem from investors being unable to observe audit committee characteristics as directly and easily as the quality of accounting information. Under Generally Accepted Accounting Principles (GAAP), companies use accounting accruals in the financial statement process which companies will recognize transactions and events when they occur (and not as cash or its equivalent when received or paid). They are recorded in the accounting records and reported in the financial statements of the periods to which they relate. The purpose of financial statements is "to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions" (International Accounting Standards Board, 2009).

Accruals quality always represents the degree of firm earnings as specific information. An audit committee has to be delegated by the firm's board of directors to select proper accounting policies, as well as review the existence of any significant accounting accruals, reserves or estimates made by the management, and the significant substance that has material impact on the financial statements (financial reporting process) to ensure that they are accurate and adequate (The Stock Exchange of Thailand, 1999, 2008). In addition, Francis, LaFond, Olsson and Schipper (2004) note that accruals quality had the largest impact on reducing the cost of capital among the seven earnings attributes of accruals quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism. Also, earnings best explain the firm-level dynamic process, and accruals, as an important part of earnings, are also likely to be generated by the firm-level dynamic process (Gerakos, 2012).

In conclusion, agency theory views agency problems and information asymmetry as being potentially minimized by corporate governance (i.e. audit committee characteristics). More precise information and decreased information asymmetry can further reduce the cost of capital. Therefore, the association between audit committee characteristics and the cost of capital can be clearly observed through the quality of accounting information (i.e. accruals quality).

Thailand came to recognize the importance of the role of the audit committee following the economic crisis in 1997. To respond to the efficient allocation of capital in the international financial markets, the Stock Exchange of Thailand (SET) has actively promoted corporate governance principles. During 1997-1998, the SET issued "The Code of Best Practice for Directors of Listed Companies" and "The Best Practice Guideline for the Audit Committee". In 1999 the SET stated the requirement for all listed firms to have an audit committee with at least three independent members and at least one audit committee member that have the knowledge, understanding or experience in accounting or finance and sufficient knowledge to understand any changes that could affect financial reports in order to make the work of the audit committee more effective. The primary duty of the audit committee is to review the financial reporting process in order to ensure the high quality of the firm's financial report. In 2008 the SET revised the qualifications and scope of work of the audit committee to improve corporate governance in Thailand.

Prior research posits that audit committee characteristics, i.e., accounting experts, legal experts, multiple directorship, tenure, and female audit committee members affect accruals quality (Nelson & Devi, 2013; Alkdai & Hanefah, 2012; Carcello, Hollingsworth, Klein, & Neal, 2006; Abdul Rahman & Mohamed Ali, 2006; Dhaliwal, Naiker, & Navissi, 2010; Baxter & Cotter, 2009; Sun, Liu, & Lan, 2011; Krishnan, Wen, & Zhao, 2011; Yang & Krishnan, 2005; Ghosh, Marra, & Moon, 2010; and Srinidhi, Gul, & Tsui, 2011). However, research on how the audit committee characteristics above affect the cost of capital remains scarce. Thus, this study intends to investigate the effects of the audit committee characteristics given above on the cost of capital.

Previous studies have only investigated the direct effect of audit committee characteristics on the cost of capital. Therefore, this study investigates the effect of audit committee characteristics on the cost of capital mediated by accruals quality. The results will shed some light on the linkage between audit committee characteristics and the cost of capital through accruals quality.

Some studies suggest that accruals quality may decrease the cost of capital (Ashbaugh, Collins & Lafond, 2004; Francis, et al., 2004, 2005; Bhattacharya, Ecker, Olsson, & Schipper, 2012; Demirkan, Radhakrishnan, & Urcan, 2012; Salteh, Valipour, & Zarenji, 2012; and Shen & Huang, 2013). However, these were conducted based on the datasets of the developed markets such as the U.S. and Europe, which have a different financial environment from a developing market like Thailand. Therefore, the results of this study will help us understand the relationship between accruals quality and the cost of capital using Thai datasets.

1.2 Purpose of the Study

The purposes of this study are as follows:

1.2.1 To investigate the effect of audit committee characteristics on accruals quality.

1.2.2 To investigate the effect of accruals quality on the cost of capital, i.e. cost of debt and cost of equity.

1.2.3 To investigate the effect of audit committee characteristics on the cost of capital.

1.2.4 To investigate the effect of audit committee characteristics on the cost of capital through quality of accounting information as measured by accruals quality.

The result of this study will provide us with a better insight into the effects of audit committee characteristics on accruals quality and the cost of capital.

1.3 Research Questions and Hypotheses

This study aims to answer and test the following research questions and hypotheses.

Research Question 1: What is the relationship among an audit committee with accounting experts, accruals quality and the cost of capital?

Research Hypotheses:

H1a: An audit committee with accounting experts is positively related to accruals quality.

H1b: An audit committee with accounting experts is negatively related to the cost of capital.

H1c: There is a relationship between an audit committee with accounting experts and the cost of capital through accruals quality.

Research Question 2: What is the relationship among an audit committee with legal experts, accruals quality and the cost of capital?

Research Hypotheses:

H2a: An audit committee with legal experts is positively related to ccruals quality.

H2b: An audit committee with legal experts is negatively related to the cost of capital.

H2c: There is a relationship between an audit committee with legal experts and the cost of capital through accruals quality.

Research Question 3: What is the relationship among an audit committee with multiple directorships, accruals quality and the cost of capital?

Research Hypotheses:

H3a: An audit committee with multiple directorships is positively related to accruals quality.

H3b: An audit committee with multiple directorships is negatively related to the cost of capital.

H3c: There is a relationship between an audit committee with multiple directorships and the cost of capital through accruals quality.

Research Question 4: What is the relationship among the tenure of audit committee members, accruals quality and the cost of capital?

Research Hypotheses:

H4a: The tenure of audit committee members is positively related with accruals quality.

H4b: The tenure of audit committee members is negatively related with the cost of capital.

H4c: There is a relationship between the tenure of audit committee members and the cost of capital through accruals quality.

Research Question 5: What is the relationship among female audit committee members, accruals quality and the cost of capital?

Research Hypotheses:

H5a: Female audit committee members are positively related to accruals quality.

H5b: Female audit committee members are negatively related to the cost of capital.

H5c: There is a relationship between female audit committee members and the cost of capital through accruals quality.

Research Question 6: What is the relationship among audit committee independence, accruals quality and the cost of capital?

Research Hypotheses:

H6a: Audit committee independence is positively related to accruals quality.

H6b: Audit committee independence is negatively related to the cost of capital.

H6c: There is a relationship between audit committee independence and the cost of capital through accruals quality.

Research Question 7: What is the relationship among audit committee size, accruals quality and the cost of capital?

Research Hypotheses:

H7a: There is an association between audit committee size and accruals quality.

H7b: There is an association between audit committee size and the cost of capital.

H7c: There is a relationship between audit committee size and the cost of capital through accruals quality.

Research Question 8: What is the relationship among the meeting frequency of the audit committee, accruals quality and the cost of capital?

Research Hypotheses:

H8a: The meeting frequency of the audit committee is positively related to accruals quality.

H8b: The meeting frequency of the audit committee is negatively related to the cost of capital.

H8c: There is a relationship between the meeting frequency of the audit committee and the cost of capital through accruals quality.

Research Question 9: What is the relationship among the age of audit committee members, accruals quality and the cost of capital?

Research Hypotheses:

H9a: The age of the audit committee members is positively related to accruals quality.

H9b: The age of the audit committee members is negatively related to the cost of capital.

H9c: There is a relationship between the age of the audit committee members and the cost of capital through accruals quality.

Research Question 10: What is the relationship between accruals quality and the cost of capital?

Research Hypothesis:

H10: Accruals quality is negatively related to the cost of capital.

1.4 Theoretical Perspectives

In this study, we briefly explain the theoretical perspective:

1.4.1 Agency Theory

Agency theory was developed by Jensen and Meckling (1976). Agency theory is generally considered as the starting point for any discussion on corporate governance that describes the relationship between shareholders (the principle) and management (the agent). The management is responsible for managing and maximizing the wealth of shareholders, but inconsistencies (conflicts of interest) in the benefits and objectives of shareholders and management cause agency problems, moral hazard problems, as

well as adverse selection problems. An audit committee is a part of corporate governance, which plays an important role in decreasing the agency problem and may decrease the expected return on equity (Drobetz, Schillhofer, & Zimmermann, 2004).

1.4.2 Prospect Theory

Prospect theory was developed by Kahneman and Tversky in 1979 (Kahneman & Tversky, 1979). Prospect theory refers to the greater effect on the individual's emotional feelings when they lose the same amount compared to when they gain the same amount. Because accruals quality is a part of earnings management, the management has to try to manage earnings in order to maintain positive earnings when the firm makes losses.

1.5 Definitions of Terms

The definitions of specific terms and phrases for the purpose of this current research are as follows:

Audit Committee	A sub-committee of the board of directors that works independently. They have good corporate governance with the main objective of reviewing the best financial reporting process (The Securities and Exchange Commission, 2010).
Accruals Quality	The residual of the regression is the unexplained portion of the variation in working capital accruals on cash flow from operations in the prior period, current period, and future period.
The Cost of Capital	Cost of debt and cost of equity.

1.6 Delimitations and Limitations of the Study

This research used secondary data obtained only from the financial reports of Thai listed companies during 2010 to 2012. These are available in the SETSMART database, the company's own website, or other relevant places.

Since the empirical test results are based on secondary data analysis using an accruals-based model, the interpretation should be treated with caution. In addition, the accruals-based models are only statistical proxies for earnings management at the firm level, so they may include measurement errors. Furthermore, these findings might not necessarily imply that the sampled firms actually managed their earnings.

At present, there is no consensus on the best measure of the cost of equity (Bhattacharya, et al., 2012) and accruals-based model used to measure accruals quality, so this may mean the results of the study differ.

This study investigates the effects of audit committee characteristics and the cost of capital using the quality of accounting information, i.e. accruals quality, as the mediating variable. There are other factors, such as firm profitability and debt servicing capability, which could be used as the mediating variable.

1.7 Significance of the Study

This study contributes academically to accounting literature, investors, shareholders, auditors, standard setters, regulators and other stakeholders as described below.

This study contributes to the corporate governance literature and provides evidence of the relationship of audit committee characteristics and the cost of capital through accruals quality. Besides, this study provides evidence of the direct effect of audit committee characteristics on the cost of capital. These results are meaningful to the above parties to better understand the consequences of the audit committees of the Thai listed companies and their association with accruals quality and the cost of capital.

Previous studies have only addressed the direct effect of the audit committee on some characteristics that affect the cost of capital. This study focuses on the effect of the audit committee on other characteristics, i.e. accounting experts, legal experts, multiple directorships, tenure and female audit committee members on the cost of capital. In addition, it further investigates the effects of other characteristics of the audit committee, i.e. independence, size, meeting frequency and audit committee members' age. Such the information from this study will build awareness of the good characteristics of an audit committee and should be of interest to a variety of parties

such as academics, financial practitioners, investors, standard setters, regulators, and policy makers in the Thai capital market. This is because the effect of audit committee characteristics on accruals quality and the cost of capital can explain the variations of governance among Thai listed firms. Specifically, Thai capital market regulators (the SET and the SEC) can use the information from this study to better understand the differences in the audit committee characteristics among the Thai listed companies and the relationship between the audit committee characteristics and the cost of capital. Besides, the regulators can use the results to promote the benefits of implementing good corporate governance or to give incentives to listed firms to practice better corporate governance in order to better protect investors in the Thai capital market.

CHAPTER 2
REVIEW OF THE LITERATURE

2.1 Theoretical Foundations

2.1.1 Agency Theory

Agency theory makes the division of the duties between shareholders or owners of economic resources (principals) and the managers who are charged with using and controlling those resources (agents). Shareholders would like the manager to work and make decisions for running the firm for the greatest benefit to the shareholders. However, the manager may have different needs that are unlikely to be in the best interests of the shareholders. The manager should act in a way that creates the greatest benefit for the firm or shareholders while also considering if it is in his best interests at the same time. The separation of principals and agents means the conflict of interest causes agency problems and information asymmetry (Jensen & Meckling, 1976). Principals are limited in their access to information and this can prove disadvantageous when such information is used in furthering the benefit of the agents (Adams, 1994).

A firm with "good" governance is at lower risk than a firm with "bad" governance, and this shows itself in a tendency to decrease the cost of capital. Based on agency theory, information asymmetry and agency problems can be reduced by corporate governance. Corporate governance plays an important role in decreasing the agency problem, the expected return on equity, and shareholders' monitoring and auditing costs (Drobetz, et al., 2004). The audit committee as part of corporate governance can improve accruals quality by monitoring the firm's financial reporting process. Moreover, the audit committee has the duties to review the connected transactions, or the transactions that may lead to conflicts of interests for the greatest benefit of the firm (The Stock Exchange of Thailand, 2008). In addition, the audit committee has the duty to protect the company's assets and the shareholder rights from the opportunistic behavior of management in order to mitigate the agency problem.

2.1.2 Prospect Theory

Prospect theory is a behavioral economic theory that describes the emotional response of the individual when there is a difference between loss and gain. The result is this causes people to make a decision based more on gain than loss. The theory was developed by Daniel Kahneman and Amos Tversky in 1979 and they received the Noble Prize in 2002. The prospect theory shows that individuals do not have adequate reason to make a decision from the perspective of main-stream economics. From the perspective of prospect theory, loss has a greater effect on the emotions than a gain of the same amount.

In contemporary research, accruals quality is considered one of the proxies of earnings management. The manager may have incentives to manage earnings in order to maintain positive earnings patterns, avoid reporting losses and earnings declines (Burgstahler & Dichev, 1997; Barth, Elliott, & Finn, 1999; Degeorge, Patel, & Zeckhauser 1999; and Park & Shin, 2004) and get along well with the expectation of analyst (Degeorge, et al., 1999; Abarbanell & Lehavy, 2003; and Burgstahler & Eames, 2006). This is consistent with Moreira and Pope (2007) who found earnings management had stronger effect for firms with greater need for debt to avoid losses.

2.2 Relevant Literature Review and Research Hypotheses Development

2.2.1 The Effect of Audit Committee Characteristics on Accruals Quality and the Cost of Capital

1) Accounting Experts

Monitoring the financial reporting process nearly always makes use of the in-depth knowledge of technical rules/accounting standards. Only committees with sophisticated accounting backgrounds are likely to be successful in limiting earnings management. In 1999 the SET stated the requirement for all listed companies to have an audit committee with at least one member with knowledge, understanding or experience in accounting or finance (financial experts) and that they must have the adequate knowledge to understand any changes affecting the financial report in order to improve the work of the audit committee more efficiently. Bédard, Chtourou, and Courteau (2004), Carcello et al. (2006) and Marra, Mazzola, and Prencipe (2011) found

that the presence of at least one audit committee member with financial expertise is related with a lower likelihood of aggressive earnings management. However, Xie, Davidson III, and DaDalt (2003), Yang and Krishnan (2005), Thoopsamut and Jaikengkit (2009), Ghosh et al. (2010) and Lynch and Williams (2012) failed to find a relationship between the existence of financial experts and discretionary accruals. This is also consistent with Nelson and Devi (2013) who did not identify any relationship between financial experts and accruals quality; however they find a positive relationship between accounting experts and accruals quality.

Accounting experts is the most important characteristic of an audit committee because "best practices" suggest that audit committee members should have knowledge of accounting concepts and the auditing process to recognize accounting problems and ask for the information from management and the auditor. In fact, audit committee members believe that accounting experts are important for audit committee service (DeZoort, 1997, 1998). In addition, the studies of Davidson III, Xie, and Xu (2004) and DeFond, Hann, and Hu (2005) indicate a positive relationship between market reaction and the appointment of new audit committee members with accounting experts, while there is no reaction to the appointment of audit committee members with non-accounting financial experts.

Previous studies of Carcello et al. (2006), Baxter and Cotter (2009), Dhaliwal et al. (2010) and Krishnan et al. (2011), found a positive relationship between audit committee members with accounting experts and accruals quality. However, at present no one has discovered any association between an audit committee with accounting experts and the cost of capital. There is only the study by Anderson, Mansi, and Reeb (2004) which found a negative relationship between financial experts on the audit committee and the cost of debt. Thus, accounting experts is a positive characteristic of an audit committee with the tendency to increase accruals quality (decrease investment risk) and decrease the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 1a: An audit committee with accounting experts is positively related to accruals quality.

Hypothesis 1b: An audit committee with accounting experts is negatively related to the cost of capital.

Hypothesis 1c: There is a relationship between an audit committee with accounting experts and the cost of capital through accruals quality.

2) Legal Experts

Linck, Netter, and Yang (2009) showed that as a result from the Sarbanes-Oxley Act, boards of directors with lawyers increased from 5.6 percent in 2001 to 8.6 percent in 2004. The Stock Exchange of Thailand (2008) has defined an audit committee as having the duty to review the company's compliance with the law on securities and exchange, the exchange's regulations, and the laws relating to the company's business. An audit committee with a legal background helps to produce high quality financial reporting because its members are expected to be more careful about legal risks and be alert to any legal liability threats relating to financial reporting quality. An audit committee with legal experts is better able to cooperate and communicate with the corporate lawyer to correct wrongdoings before they occur and cause any real legal problems. Moreover, they can provide direct monitoring regarding accounting transactions that have legal implications (e.g., asset sales, mergers and acquisitions, special purpose entities) (Krishnan, et al., 2011).

Krishnan et al. (2011) showed that an audit committee with legal-only experts is positively related with financial reporting quality (accruals quality), but no that there exists no relationship between financial reporting quality and legal experts *outside* audit committees. Thus, directors with legal experts are beneficial for the quality of financial report *only* when the experts are appointed to the audit committee. Interestingly, the magnitude of the positive effect on the quality of financial reports is larger for legal-only experts than for accounting-only experts. At present, no one has discovered any association between an audit committee with legal experts and the cost of capital, with legal experts being a positive characteristic of an audit committee. So, this has the tendency to increase accruals quality and decrease the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 2a: An audit committee with legal experts is positively related to accruals quality.

Hypothesis 2b: An audit committee with legal experts is negatively related to the cost of capital.

Hypothesis 2c: There is a relationship between an audit committee with legal experts and the cost of capital through accruals quality.

3) Multiple Directorships

Fama and Jensen (1983) indicate that outside directors, who are usually managers of other firms, are incentivized to improve the firm in order to enhance their reputations. Studies by Vafeas (1999, 2001), Carpenter and Westphal (2001), and Perry and Peyer (2005) indicate that directors who serve on various boards may gain managerial expertise and accumulate reputation. Following this reputational reasoning, firms with higher multiple directorships may have higher quality financial reporting and thus lower costs of capital (Dao, Huang, & Zhu, 2013).

Yang and Krishnan (2005) discovered a relationship between multiple directorships and accruals quality; however, at present no one has established any relationship between multiple directorships and the cost of capital. Given this, the researcher expects that multiple directorships of an audit committee will have a positive relationship with accruals quality and a negative relationship with the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 3a: An audit committee with multiple directorships is positively related to accruals quality.

Hypothesis 3b: An audit committee with multiple directorships is negatively related to the cost of capital.

Hypothesis 3c: There is a relationship between an audit committee with multiple directorships and the cost of capital through accruals quality.

4) Tenure

Audit committee members who have been working longer periods are more knowledgeable and experienced about a firm's financial reporting process. Generally, the firms should set a tenure of about 2 to 5 years for a position on the audit committee

to ensure that the audit committee performs its function continuously. As a result, work efficiency increases (The Stock Exchange of Thailand, 1999). Thus, audit committee members with longer tenure have a tendency to increase financial reporting quality and limit earnings manipulation. This is consistent with Beasley (1996) who identified financial reporting fraud as decreasing with the high tenure of outside directors.

Previous studies by Yang and Krishnan (2005), and Thoopsamut and Jaikengkit (2009) found a positive significant relationship between the tenure of audit committee members and accruals quality; however, there has been no relationship discovered between the tenure of an audit committee member and the cost of capital. For this reason, the researcher expects that the tenure of the audit committee will have a positive relationship with accruals quality and a negative relationship with the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 4a: The tenure of audit committee members is positively related with accruals quality.

Hypothesis 4b: The tenure of audit committee members is negatively related with the cost of capital.

Hypothesis 4c: There is a relationship between the tenure of audit committee members and the cost of capital through accruals quality.

5) Female Audit Committee Members

It has long been acknowledged in management and cognitive psychology literature that gender makes a significant difference in conservatism, risk averseness, and ethical behavior. The study of Erhardt, Werbel, and Shrader (2003) found that the gender diversity of the board is positively related with profitability as it has broader knowledge and is more competitive than firms with non-diversified boards.

Heminway (2007) indicated that women are more trustworthy than men and so there is a decrease in the manipulation of financial reporting and other disclosures. Peni and Vahamaa (2010) revealed female CFOs to make less earnings management than male CFOs. Female audit committee members may be more ethical, more earnest and more conservative than male audit committee members (Qi & Tian, 2012). So boards with female participation could improve earnings quality. Adam, Gray, and Nowland

(2010) indicate that female directors represent more independent thinking and improve the monitoring process. Thus, female audit committee members can equate to better monitoring, lower information asymmetry and better earnings quality.

Srinidhi et al. (2011) identified earnings management as being lower if at least one member of the audit committee is female. Qi and Tian (2012) found a significantly positive relationship between the proportion of female audit committee members and accruals quality, but no study has yet addressed the relationship between female audit committee members and the cost of capital. Subsequently, the researcher expects that female audit committee members will have a positive relationship with accruals quality and a negative relationship with the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 5a: Female audit committee members are positively related to accruals quality.

Hypothesis 5b: Female audit committee members are negatively related to the cost of capital.

Hypothesis 5c: There is a relationship between female audit committee members and the cost of capital through accruals quality.

6) Audit Committee Independence

Audit committee independent can work efficiently because audit committee members participate in the review of financial reports without any controls by management. Working freely helps the audit committee serve as monitoring on purpose and get better responsibility in order to make the report to the board of directors and shareholders. In addition, the independence of the audit committee balances the care and consideration of the benefits of all stakeholders efficiently.

Klein (2002) argues that the independence of audit committees serves as a superior monitor of the financial reporting process and limits earnings manipulation. Audit committee members must be entirely independent of directors because inside directors have few incentives to use discretion in managing reports. (Ghosh, et al., 2010).

Previous studies by Klein (2002), Bradbury, Mak, and Tan (2006), Alkdai and Hanefah (2012), Qi and Tian (2012), Amar (2014), and Soliman and Ragab (2014)

found that audit committee independence has a significantly positive relationship to accruals quality and a significantly negative relationship to the cost of debt (Anderson, et al., 2004) and the cost of equity (Ashbaugh, et al., 2004). Hence, the researcher expects that audit committee independence should have a positive relationship with accruals quality and a negative relationship with the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 6a: Audit committee independence is positively related to accruals quality.

Hypothesis 6b: Audit committee independence is negatively related to the cost of capital.

Hypothesis 6c: There is a relationship between audit committee independence and the cost of capital through accruals quality.

7) Audit Committee Size

Beasley (2001) and Ghosh, et al. (2010) posit that larger committees provide superior monitors of the financial accounting process as they have broader knowledge. On the other hand, Jensen (1993) and Yermack (1996) indicate that smaller audit committees are more effective monitors.

According to the previous studies, there is a significant positive relationship between audit committee size and accruals quality (e.g. Yang & Krishnan, 2005; Kent, Routledge, & Stewart, 2010; Krishnan, et al., 2011; García, Barbadillo, & Perez, 2012; Qi & Tian, 2012; and Amar, 2014). However, studies by Ghosh et al. (2010) and Baccouche, Hadriche, and Omri (2013) identified a significantly negative relationship between audit committee size and accruals quality. Thus, there is some ambiguity concerning the exact relationship. Additionally, the study of Anderson et al. (2004) revealed a negative relationship between audit committee size and the cost of debt.

Thus, the following hypotheses are proposed:

Hypothesis 7a: There is an association between audit committee size and accruals quality.

Hypothesis 7b: There is an association between audit committee size and the cost of capital.

Hypothesis 7c: There is a relationship between audit committee size and the cost of capital through accruals quality.

8) Meeting Frequency

Audit committee meeting frequency represents the level of diligence and investigation by committee members because audit committees need to review financial reporting (Ghosh, et al., 2010). Audit committees meeting more frequently appears to increase financial reporting quality by the management. Therefore, greater meeting frequency is a more positive characteristic for higher accruals quality.

Previous studies by Xie et al. (2003), Ghosh et al. (2010), Kent et al. (2010), García et al. (2012), Qi and Tian (2012), and Soliman and Ragab (2014) reveal a significantly positive relationship between audit committee meeting frequency and accruals quality. In addition, Anderson et al. (2004) found a negative relationship with the cost of debt. For the reasons above, the researcher expects audit committee meeting frequency to be positively related to accruals quality and negatively related to the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 8a: The meeting frequency of the audit committee is positively related to accruals quality.

Hypothesis 8b: The meeting frequency of the audit committee is negatively related to the cost of capital.

Hypothesis 8c: There is a relationship between the meeting frequency of the audit committee and the cost of capital through accruals quality.

9) Audit Committee Members' Age

Typically, older people have greater working experience than those younger. Experience is especially important for working in any occupation. Audit committees comprising greater experience may help identify the weaknesses in internal control easier. Older members on an audit committee with more experience, who are more conservative than younger members of audit committees may make greater efforts to prevent collusion between managers and external auditors (Qi & Tian, 2012).

Qi and Tian (2012) found there to be a significantly positive relationship between the members' age of the audit committee and accruals quality. In addition, Dao

et al. (2013) found a significantly negative relationship between the members' age of the audit committee and the cost of equity. For these reasons, the researcher expects that the members' age of audit committee to have a positive relationship with accruals quality and a negative relationship with the cost of capital.

Thus, the following hypotheses are proposed:

Hypothesis 9a: The age of the audit committee members is positively related to accruals quality.

Hypothesis 9b: The age of the audit committee members is negatively related to the cost of capital.

Hypothesis 9c: There is a relationship between the age of the audit committee members and the cost of capital through accruals quality.

2.2.2 The Effect of Accruals Quality on the Cost of Capital

Accruals quality represents earnings management, earnings quality and accounting information quality. From an investment perspective, low-quality earnings are undesirable, resulting in a defective resource allocation signal (Schipper & Vincent, 2003). Investors use accounting information to make investment decisions. If the information has been manipulated by managers, it may result in higher investment risk and impact upon the cost of capital. Moreira and Pope (2007) found that a firm with a high level of debt tends to manage earnings to avoid losses.

Previous studies by Francis et al. (2005), Demirkan et al. (2012), Shen, and Huang (2013) found that there is a significant negative relationship between accruals quality and the cost of debt. In addition, Ashbaugh et al. (2004), Francis et al. (2004), (2005), Bhattacharya et al. (2012), Demirkan et al. (2012), and Persakis and Iatridis (2015) identified a significantly negative relationship between accruals quality and the cost of equity. Furthermore, Chen, Dhaliwal, and Trombley (2008) found a strong relationship between accruals quality and the cost of equity for firms with high fundamental risk. In addition, Salteh et al. (2012) discovered a significantly negative relationship between accruals quality and the weighted average cost of capital (WACC).

Thus, if investors view firms with low accruals quality as riskier than firms with high accruals quality, the researcher expects a negative association between accruals quality and the cost of capital.

Hypothesis 10: Accruals quality is negatively related to the cost of capital.

2.3 The Review of Accruals Quality Measurement

There are various accrual-based models. In this section the models widely acknowledged and currently used in accounting research will be reviewed.

2.3.1 Jones (1991) proposes the following accrual-based model. Working capital accruals are divided into total accruals that are non-discretionary (normal accruals) and discretionary accruals (abnormal accruals). Non-discretionary accruals represent changes in the underlying economic performance of the firm (Abdul Rahman & Mohamed Ali 2006) and tend to persist in the aggregate (Dechow, Hutton, Kim, & Sloan, 2012). The model attempt relieves assumption that non-discretionary accruals are constant by controlling for the effect of changes in a firm's economic circumstances on non-discretionary accruals. The model assumes that revenues are non-discretionary. On the other hand, discretionary accruals are open to the managers' discretion and hence are operationalised as a proxy for accruals quality. Larger discretionary accruals indicate poorer accruals quality.

2.3.2 Dechow, Sloan, and Sweeney (1995) propose a modified version of Jones' (1991) model, in order to reduce the problems of the previous model regarding the measure of discretionary accruals with errors when discretion is exercised over revenues. Non-discretionary accruals are still estimated as in the Jones' (1991) model, and there is only the change in the revenues being adjusted for the change in receivables in the event period. This modified-Jones model presumes that all changes in credit sales in the event period result from earnings management. Their paper also compares five alternative models (i.e. Healy model, DeAngelo model, Jones model, modified-Jones model, and industry model) to detect earnings management. The results show that the modified-Jones model is the most powerful in detecting earnings management, with larger discretionary accruals indicating poorer accruals quality.

2.3.3 Dechow and Dichev (2002) propose an accruals model that attempts to determine the quality of accruals by looking at their association with cash flows by regressing working capital accruals on cash flow from operations in the current period, prior period, and future period. The residual of the regression is the unexplained

portion of the variation in working capital accruals and is employed as an inverse measure of accruals quality.

2.3.4 Kothari, Leone and Wasley (2005) follow on from Dechow et al. (1995) by testing several accrual-based models, which indicate that misspecification occurs for all models when applied to samples of firms with extreme performance. Thus, Kothari et al. (2005) proposed a model to reduce this problem using a performance-matched firm's discretionary accrual. That is, they included return on assets (ROA) in the Jones and modified-Jones model in order to control for the impact of performance on the estimated discretionary accruals.

2.3.5 Dechow, Hutton, Kim and Sloan (2012) provided a new approach to identifying accrual-based earnings management based on the concept that "any accruals-based earnings management in one period must reverse in another period". They adapted all common accrual-based models which could increase testing power by approximately 40%, if the researcher could correctly identify the periods for which the accruals are predicted to be managed and the periods for which the accruals are predicted to reverse. Their method relied on researchers knowing exactly the periods in which accruals are managed and reversed; however, this method still experiences problems as it is incomplete and suffers from several issues. For example, there is no guidance to specify the periods and patterns in which accruals-based earnings management occurs and reverses, and so this method may lead to endless and potentially unresolvable debates about the correct specification of reversal periods and patterns (Gerakos, 2012).

According to the model above, this study used the Dechow and Dichev (2002) model (DD model) in order to measure accruals quality. This is consistent with empirical evidence from recent contemporary research in earnings quality and earnings management (namely Baxter & Cotter, 2009; Chen, et al., 2008; Demirkan, et al., 2012; Dhaliwal, et al., 2010; Francis, et al., 2004; Kent, et al., 2010; and Krishnan, et al., 2011).

2.4 The Review of the Cost of Capital Measurement

The cost of capital consists of cost of debt and cost of equity which represents the cost of capital of the firm in term of how much comes from debt and how much from equity. For this current research, the measurement of the cost of debt is uncomplicated because it is always measured by interest expense divided by the average total debt (Gray, et al., 2009) or interest expense divided by average interest-bearing debt outstanding (Francis, et al., 2005). However, the cost of equity represents at least the returns for investors of which in academic research there are various measurement models. Next, the researcher reviews the models that are popular in the accounting and finance research fields.

2.4.1 The Traditional Capital Asset Pricing Model: (CAPM) The CAPM was developed by Professors Harry Markowitz and William F. Sharpe, who were awarded Nobel Prizes in 1990. The CAPM is an important tool used to analyze the relationship between risk and rates of return. The CAPM represents the expected return on a specific asset that equals the risk-free rate plus a premium that depends on the asset's beta and the expected risk premium on the market portfolio (Megginson & Smart, 2006).

2.4.2 O'Hanlon and Steele (2000) infer the cost of equity from estimating the equity risk premium in the UK. This method derives from recent theoretical advances in the area of equity valuation which expand upon the work of Ohlson (1995). It represents the relationship between accounting fundamentals (earnings, asset values and dividends) and share prices which depend on current accounting information (i.e., book value and abnormal earnings) and other information. They deduced the cost of equity that is implicit in the relationship between accounting profitability and unrecorded accounting goodwill over the period from 1968 to 1995 (unrecorded accounting goodwill is the difference between the accounting book value of a company's equity capital and the market value of that equity capital). Unrecorded goodwill is a function of current abnormal earnings. They found that estimating the cost of equity using the time series of profitability and the time series of unrecorded goodwill reliability and associated beta is in accordance with the predictions of the CAPM.

2.4.3 Gebhardt, Lee and Swaminathan (2001) posited that estimation of expected returns or the cost of capital should look to the future and not to the past like some methods including the CAPM which use historical or realized returns. They believe that managers make better decisions if they learn to estimate the cost of capital without relying on current market prices or realized returns. They present a new approach using a discounted residual income model (RIM) and market prices to generate a market implied cost of capital which is defined as the internal rate of return (IRR) that equates the current stock price to the present value of all future cash flows to common shareholders. They indicate that several firm characteristics (covering five risk categories: market volatility; leverage; liquidity and information environment; variability and predictability of earnings; and other pricing anomalies) have a systematic relationship to the next year's implied cost of capital. Moreover, these characteristics also have strong predictive power for two-year-ahead implied cost of capital. The results show that in univariate tests, beta is not significantly correlated with the implied risk premium. However, in multivariate tests, they found a positive relationship after controlling for B/M (or leverage), firm size, and forecasted growth rate. They discovered that estimating the implied cost of capital using the book-to-market ratio (B/M), the dispersion in analyst forecasts, the long-term consensus analyst growth forecast, and the industry mean risk premium from the prior year have consistent predictive power in explaining cross-sectional variations in this year's implied cost of capital of around 60%.

2.4.4 Easton (2004) developed the price-earnings growth ratio (PEG ratio) model based on Ohlson and Juettner-Nauroth in 2000 as a working paper at New York University at the time. It was published in the Review of Accounting Studies in 2005. He estimated the rate of return implied by current prices and forecasted future payoffs (earnings in one-year and two-year ahead and earnings growth). The PEG ratio emphasizes future earnings growth. It is ignored in PE ratio which is considered only the past. The model has key elements which are very similar to the residual income valuation model that has been used to estimate the expected rate of return in recent studies in accounting and finance literature. Easton compares the expected rate of return implied by the PEG ratio and the expected rate of return implied by the PE ratio.

The results indicate that the PEG ratio is better than the PE ratio. The correlation between the PEG ratio and the refined estimate of the expected rate of return is much higher (-0.90) than the correlation between the PE ratio and the refined estimate of the expected rate of return (-0.48). Moreover, the bias in the estimation of the expected rate of return based on the PEG ratio is much less than the bias in the estimation of the expected rate of return based on the PE ratio. Thus, he suggests that researchers can use the PEG ratio in determining the effects of various factors on the cost of equity.

2.4.5 Ohlson and Juettner-Nauroth (2005) developed a model (OJ model) that represents the correlation between next-period earnings per share (eps), eps growth rate and the firm's current price per share. The key of the model shows the current price depends on forward eps and their subsequent growth as captured by two dividend-policy independent measures of eps growth. They generalize the formula from text-books that show one can exploit the constant growth model to derive the cost of capital as the sum of dps1/P0 and eps (or dps) growth which derives a square-root formula that expresses cost of capital as a function of eps1/P0 and the two dividend policy irrelevant eps growth measures.

The measurement models of the cost of equity given above can be summarized in the following two groups:

1) Ex-post cost of equity This group comprises the CAPM model and O'Hanlon and Steele (2000) model. Such models use past information (realized return) in order to estimate the cost of equity. The most popular are the CAPM model. The O'Hanlon and Steele (2000) models which attempt to improve upon the accounting fundamentals of Ohlson (1995), but it is unpopular both among academics and practitioners. Also, the O'Hanlon and Steele (2000) model employs various steps and is complicated to use.

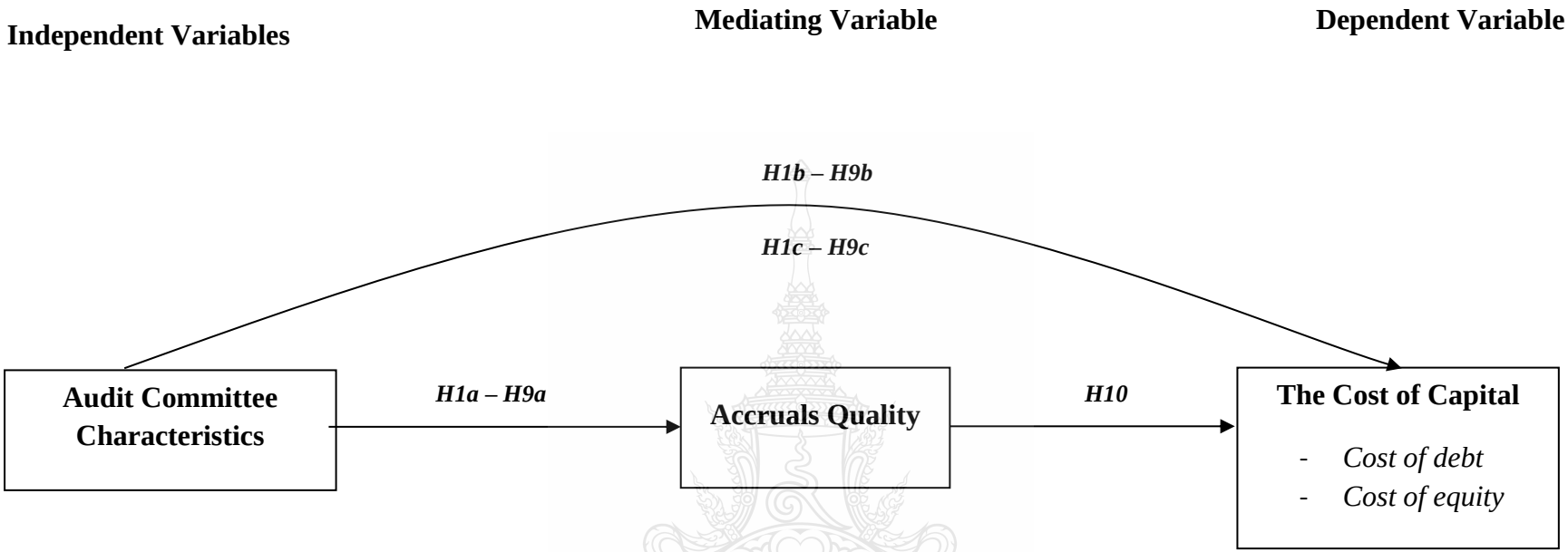
2) Ex-ante cost of equity This group comprises the models of Gebhardt et al. (2001), Easton (2004), and Ohlson and Juettner-Nauroth (2005). These models are based on forward looking approaches. They utilize the idea that expected return is a proxy of the cost of equity. Investors should look forward to what is expected to happen in the future, and they shouldn't use past information. Therefore, these models must use forecasting earnings per share (eps) in 1 year and 2 years ahead and the eps

growth rate by analysts. In Thailand, there are limitations in the use of such information. Easton (2006) indicates that analysts' forecasts may not be a reasonable proxy for the market's expectations which use information that may cause the cost of equity to be incorrect. In the same way, Easton and Sommers (2007) indicate that the majority of analysts are always optimistic which generate bias in the forecasts.

Thus, this study used the CAPM model to measure the cost of equity because it is a model based on the realized returns approach which experiences no problems concerning measurement errors from the estimates of the cost of equity (Francis, et al., 2004). In addition, the CAPM model is widely accepted both among academics and practitioners. Studies by Graham and Harvey (2001), Welch (2008), Da, Guo, and Jagannathan (2012), and Brotherson, Eades, Harris, and Higgins (2013) show that the CAPM model is the most popular method for estimating the cost of equity among such a group.

CHAPTER 3
RESEARCH METHODOLOGY

The hypotheses investigated in this dissertation and the specific research tools and methods employed to test the hypotheses are addressed in this chapter. The terminology, sample selection procedures, and model specifications are discussed in addition to the data sources being disclosed. Also, simple correlation analysis and statistical techniques, including multiple regression analysis are presented in this chapter.



1) *Accounting Experts (AccExp)*
2) *Legal Experts (LegExp)*
3) *Multiple Directorships (Multi)*
4) *Tenure (Tenure)*
5) *Female Audit Committee members (Female)*
6) *Audit Committee Independence (Ac_Ind)*
7) *Audit Committee Size (Ac_Size)*
8) *Meeting Frequency (Meet)*
9) *Members' Age (Age)*

Figure 3.1 Conceptual Framework

3.1 Research Design

3.1.1 Sample Selection

This study examined 272 companies on the Stock Exchange of Thailand (SET) during 2010 to 2012. Companies in financial industries (banking, finance and insurance) were excluded from the sample of the listed companies in the study as these firms have unique estimates and the nature of assets and accruals tends to be substantially different than in other industries (Klein, 2002; Yang & Krishnan, 2005). Furthermore, real estate and other funds were excluded from the sample because the financial reporting requirements and characteristics of business operations differ from other companies.

Companies with fiscal year-ends not falling on 31st December were excluded from the sample. The December fiscal year end was used to ensure that the subjects in the study sample were subject to similar market conditions.

Table 3.1 presents the final study sample, comprising observations from the period 2010 to 2012.

Table 3.1 Sample Selection

	Observations Total
Listed companies in the Stock Exchange of Thailand during 2010 – 2012 from Fact Books and SET SMART	1,475
Less:	
Companies in financial industries	179
Real estate and other funds	100
Non-December fiscal year-end companies	61
Missing data	368
Company lacking ten-year windows data	437
Outlier data	58
Final Sample	**272**

3.1.2 Data Collection

This study comprised both qualitative and quantitative research. Regarding the qualitative research, the data was derived from interviews with investors and creditors. For the quantitative research, secondary data was analyzed. The data from the financial reports of Thai listed companies, available on the SEC database, was used. Other data was derived from the SET and the companies' own websites. In addition, the companies' financial reports could also be accessed from the Set Market Analysis and Reporting Tool (SETSMART), the web-based application from the SET.

Table 3.2 Summary of Definitions of Variables

Variables	Symbol	Definition
Independent Variables		
- Audit Committee Characteristics		
• Accounting Experts	AccExp	The number of accounting experts on the audit committee
• Legal Experts	LegExp	The number of legal experts on the audit committee
• Multiple Directorships	Multi	The average number of outside directorships held by audit committee members
• Tenure	Tenure	The proportion of long-term directors on an independent audit committee where long-term directors are directors with the board tenure of 10 or more years
• Female Audit Committee Members	Female	The number of female audit committee members
• Audit Committee Independence	Ac_Ind	The percentage of the firm shares detained by audit committee members multiplied by -1
• Audit Committee Size	Ac_Size	The number of audit committee members
• Meeting Frequency	Meet	The number of meetings held each year
• Members' Age	Age	Total age of audit committee members
Dependent Variables		
- Accruals Quality	AccQ	DD model multiplied by -1
- Cost of Debt	Cost_D	The percentage of interest expense divided by the average total debt

Table 3.2 Summary of Definitions of Variables (Cont.)

Variables	Symbol	Definition
- Cost of Equity	Cost_E	The CAPM model
Control Variables		
- Firm Size	F_Size	The natural logarithm of the fiscal year end market value of equity
- Financial Leverage	Leverage	The ratio of total debt divided by total assets
- Big 4 Auditor	Big4	Indicator variable with the value of "1" if audited by the Big 4 auditing firms and "0" otherwise
- Book-to-Market Ratio	BM	The ratio of the book value of equity divided by the market value of equity

3.2 Model Specifications, Hypotheses and Test of Significance

The *F* and adjusted R^2 statistics in multiple regression were used to test the statistical significance and substantive significance of the association between the dependent variable and independent variables. The t-statistic is commonly used to test the significance of individual multiple regression coefficients for each independent variable. Multiple regression analysis was used to investigate the following effects:

3.2.1 Model Test: The Effect of Audit Committee Characteristics on Accruals Quality

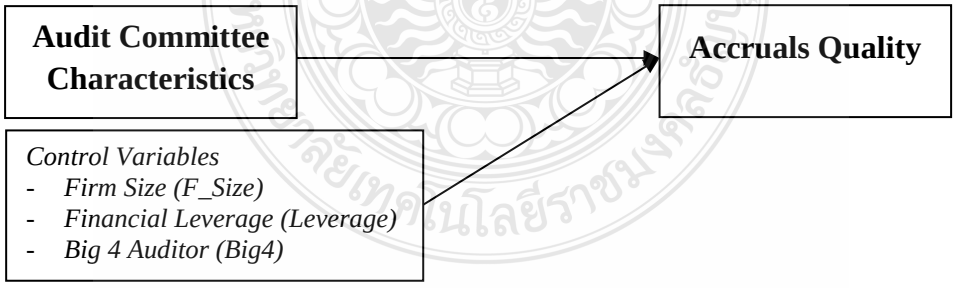


Figure 3.2 The Effect of Audit Committee Characteristics on Accruals Quality

This study investigated the effect of audit committee characteristics on accruals quality (AccQ) by estimating the following regression model.

$$AccQ_{i,t} = \beta_0 + \beta_1 AccExp_{i,t} + \beta_2 LegExp_{i,t} + \beta_3 Multi_{i,t} + \beta_4 Tenure_{i,t} + \beta_5 Female_{i,t} + \beta_6 Ac\_Ind_{i,t} + \beta_7 Ac\_Size_{i,t} + \beta_8 Meet_{i,t} + \beta_9 Age_{i,t} + \beta_{10} F\_Size + \beta_{11} Leverage + \beta_{12} Big4 + \mathcal{E}j \quad \textbf{(Model 1)}$$

Hypotheses 1a – 9a were set in order to examine the effect of audit committee characteristics on accruals quality.

H1a: An audit committee with accounting experts is positively related to accruals quality.

H2a: An audit committee with legal experts is positively related to accruals quality.

H3a: An audit committee with multiple directorships is positively related to accruals quality.

H4a: The tenure of audit committee members is positively related with accruals quality.

H5a: Female audit committee members are positively related to accruals quality.

H6a: Audit committee independence is positively related to accruals quality.

H7a: There is an association between audit committee size and accruals quality.

H8a: The meeting frequency of the audit committee is positively related to accruals quality.

H9a: The age of audit committee members is positively related to accruals quality.

Model 1 was employed to test Hypotheses 1a – 9a, as the main issues of testing here are the signs of the coefficients of variables that are of interest.

3.2.2 Model Test: The Effect of Accruals Quality on the Cost of Capital

This study investigated the effect of accruals quality on the cost of capital using an ordinary least squares (OLS) regression that controls for other factors that prior research has shown to be related to the cost of capital (Ashbaugh, et al., 2004; Francis,

et al., 2004, 2005; Chen, et al., 2008; Bhattacharya, et al., 2012; Demirkan, et al., 2012; Salteh, et al., 2012: Shen & Huang, 2013). The reason for this comes from the different measures between the cost of debt and the cost of equity. Thus, the researcher divided the models to analyze the effect of accruals quality on the cost of capital into Model (2), the cost of debt model (Cost_D), and Model (3), the cost of equity model (Cost_E).

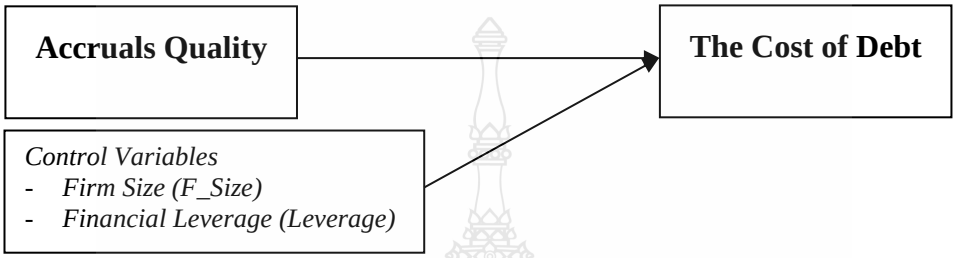


Figure 3.3 The Effect of Accruals Quality on the Cost of Debt

$$Cost\_D_{i,t} = \delta_0 + \delta_1 AccQ_{i,t} + \delta_2 F\_Size + \delta_3 Leverage + \mathcal{E}_j \quad \textbf{(Model 2)}$$

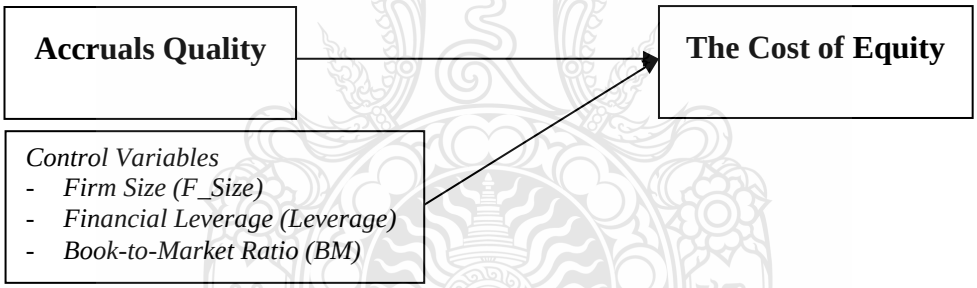


Figure 3.4 The Effect of Accruals Quality on the Cost of Equity

$$Cost\_E_{i,t} = \delta_0 + \delta_1 AccQ_{i,t} + \delta_2 F\_Size + \delta_3 Leverage + \delta_4 BM + \mathcal{E}j \quad \textbf{(Model 3)}$$

Hypothesis 10 was set in order to examine the effect of accruals quality on the cost of capital.

H10: Accruals quality is negatively related to the cost of capital.

Models 2 and 3 were employed to test Hypothesis 10, as the main issues of testing here are the signs of the coefficients of variables that are of interest.

3.2.3 Model Test: The Effect of Audit Committee Characteristics and the Cost of Capital

This study also used ordinary least square regression to examine the effect of audit committee characteristics on the cost of capital. Because of the different control variables in the analysis of the cost of debt and the cost of equity, two different models were employed to explore the effect of audit committee characteristics on the cost of capital, i.e. the cost of debt (Cost_D) and the cost of equity (Cost_E) in models (4) and (5), respectively.

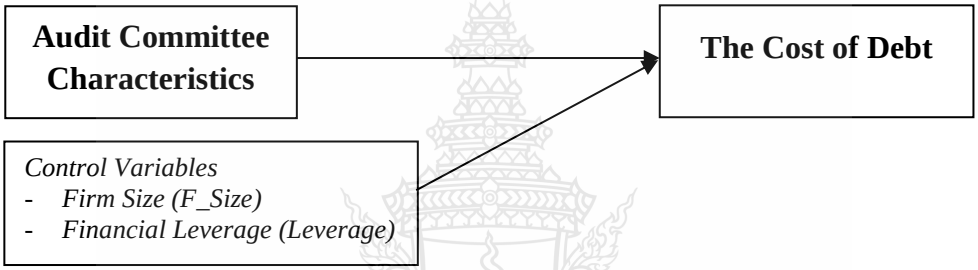


Figure 3.5 The Effect of Audit Committee Characteristics on the Cost of Debt

$$Cost\_D_{i,t} = \gamma_0 + \gamma_1 AccExp_{i,t} + \gamma_2 LegExp_{i,t} + \gamma_3 Multi_{i,t} + \gamma_4 Tenure_{i,t} + \gamma_5 Female_{i,t} + \gamma_6 Ac\_Ind_{i,t} + \gamma_7 Ac\_Size_{i,t} + \gamma_8 Meet_{i,t} + \gamma_9 Age_{i,t} + \gamma_{10} F\_Size + \gamma_{11} Leverage + \mathcal{E}j \quad \textbf{(Model 4)}$$

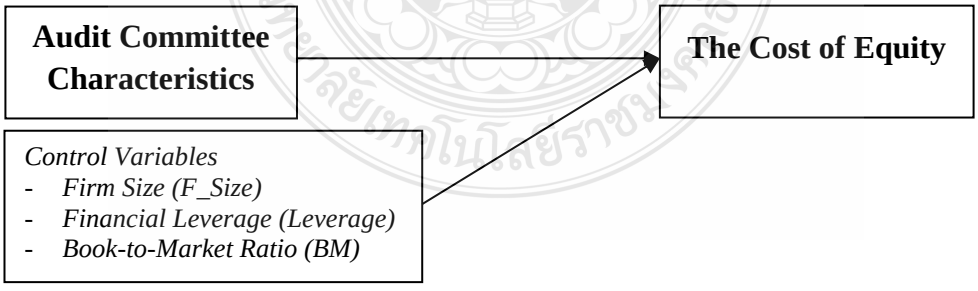


Figure 3.6 The Effect of Audit Committee Characteristics on the Cost of Equity

$$Cost\_E_{i,t} = \gamma_0 + \gamma_1 AccExp_{i,t} + \gamma_2 LegExp_{i,t} + \gamma_3 Multi_{i,t} + \gamma_4 Tenure_{i,t} + \gamma_5 Female_{i,t} + \gamma_6 Ac\_Ind_{i,t} + \gamma_7 Ac\_Size_{i,t} + \gamma_8 Meet_{i,t} + \gamma_9 Age_{i,t} + \gamma_{10} F\_Size + \gamma_{11} Leverage + \gamma_{12} BM + \mathcal{E}_j \quad \textbf{(Model 5)}$$

Hypotheses 1b – 9b were set to examine the direct effects of audit committee characteristics on the cost of capital.

H1b: An audit committee with accounting experts is negatively related to the cost of capital.

H2b: An audit committee with legal experts is negatively related to the cost of capital.

H3b: An audit committee with multiple directorships is negatively related to the cost of capital.

H4b: The tenure of audit committee members is negatively related with the cost of capital.

H5b: Female audit committee members are negatively related to the cost of capital.

H6b: Audit committee independence is negatively related to the cost of capital.

H7b: There is an association between audit committee size and the cost of capital.

H8b: The meeting frequency of the audit committee is negatively related to the cost of capital.

H9b: The age of audit committee members is negatively related to the cost of capital.

Models 4 and 5 were employed to test Hypotheses 1b – 9b, as the main issues of testing here are the signs of the coefficients of variables that are of interest.

3.2.4 Model Test: The Effect of Audit Committee Characteristics on the Cost of Capital through Accruals Quality

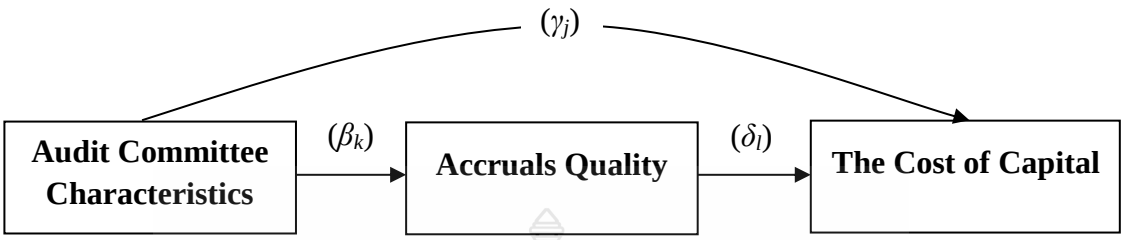


Figure 3.7 The Effect of Audit Committee Characteristics on the Cost of Capital through Accruals Quality

To examine the effect of audit committee characteristics on the cost of capital, i.e. the cost of debt and the cost of equity through accruals quality, models (4) and (5) were used to examine the direct effect of audit committee characteristics on the cost of debt and the cost of equity, respectively. Models (2) and (3) were used to test whether accruals quality is associated with the cost of debt and the cost of equity and whether accruals quality acts as the mediating variable. Model (1) was used to investigate the effects of audit committee characteristics on accruals quality.

Audit committee characteristics are considered to be indirectly and negatively associated with the cost of capital, i.e. the cost of debt and the cost of equity through accruals quality, if (a) each audit committee characteristic in model (1) is significantly positively or negatively related to accruals quality, and (b) the accruals quality in models (2) and (3) is significantly negatively associated with the cost of debt and the cost of equity, respectively. The indirect effects of each audit committee characteristic can be computed as the product of the standardized coefficient of each audit committee characteristic in model (1) and those of accruals quality in models (2) and (3).

Standardized coefficient γ_j is expected to be unequal to the product of the standardized coefficient β_k and standardized coefficient δ_l.

std coeff (γ_j) – [std coeff (β_k) x std coeff (δ_l)] $\neq 0$

All variables investigated in this study are summarized in Table 3.2.

Hypotheses 1c- 9c were set in order to examine the indirect effects of audit committee characteristics on the cost of capital through accruals quality.

H1c: There is an association between an audit committee with accounting experts and the cost of capital being mediated by accruals quality.

H2c: There is an association between an audit committee with legal experts and the cost of capital being mediated by accruals quality.

H3c: There is an association between an audit committee with multiple directorships and the cost of capital being mediated by accruals quality.

H4c: There is an association between the tenure of audit committee members and the cost of capital being mediated by accruals quality.

H5c: There is an association between female audit committee members and the cost of capital being mediated by accruals quality.

H6c: There is an association between audit committee independence and the cost of capital mediated by accruals quality.

H7c: There is an association between audit committee size and the cost of capital being mediated by accruals quality.

H8c: There is an association between the meeting frequency of the audit committee and the cost of capital being mediated by accruals quality.

H9c: There is an association between the age of audit committee members and the cost of capital being mediated by accruals quality.

Simple correlation was applied to test Hypotheses 1c – 9c examining the effect of audit committee characteristics on the cost of capital through accruals quality.

3.3 Measurement of Independent Variables

3.3.1 Measurement of Accounting Experts (AccExp)

This study measured audit committee members with accounting expertise by using the number of accounting experts on the audit committee. This is the same method used by Krishnan et al. (2011).

3.3.2 Measurement of Legal Experts (LegExp)

This study measured audit committee members with legal experts by using the number of legal expertise on the audit committee. This is the same method used by Krishnan et al. (2011).

3.3.3 Measurement of Multiple Directorships (Multi)

This study measures audit committee members with multiple directorships by using the average number of outside directorships held by audit committee members (Yang & Krishnan, 2005; and Dao, et al., 2013).

3.3.4 Measurement of Tenure (Tenure)

This study measures the tenure of audit committee by using the proportion of long-term directors on an independent audit committee where long-term directors are directors with a board tenure of 10 or more years (Sun, et al., 2011).

3.3.5 Measurement of Female Audit Committee Members (Female)

This study measures audit committee members with female directors by using the number of female audit committee members.

3.3.6 Measurement of Audit Committee Independence (Ac_Ind)

In previous research audit committee independence is mostly measured using the number of independent directors divided by board size (Abdul Rahman & Mohamed Ali, 2006; Anderson, et al., 2004; Ghosh, et al., 2010; Lorca, et al., 2011; Alkdai & Hanefah, 2012). However, the audit committee handbook issued by the SET in 2010 defines it for every audit committee member. It is noted that they must have their own independence in being a director by not taking part in management and by having no direct or indirect benefit or interest of the company, affiliated company, associated company, related company or majority shareholder of the company. This study cannot use the prior method to measure audit committee independence because there is no difference among all the firms. Therefore, this study measures audit committee independence by using the percentage of the firm shares detained by audit committee members (Yang & Krishnan, 2005; Ghosh, et al., 2010; and Baccouche, et al., 2013). The researcher multiplied *Ac_Ind* by -1 so that a higher value of the new measure indicates higher audit committee independence. In this study *Ac_Ind* is the proxy for audit committee independence.

3.3.7 Measurement of Audit Committee Size (Ac_Size)

This study measures audit committee size using the number of audit committee members (Xie, et al., 2003; Yang & Krishnan, 2005; Baxter & Cotter, 2009; Ghosh, et al., 2010; Kent, et al., 2010; Sun, et al., 2011; Alkdai & Hanefah, 2012; García, et al., 2012; Qi & Tian, 2012; and Baccouche, et al., 2013).

3.3.8 Measurement of Meeting Frequency (Meet)

This study measures audit committee meeting by using the number of meetings held each year (Xie, et al., 2003; Anderson, et al., 2004; Yang & Krishnan, 2005; Abdul Rahman & Mohamed Ali, 2006; Baxter & Cotter, 2009; Ghosh, et al., 2010; Kent, et al., 2010; García, et al., 2012; Qi & Tian, 2012; and Baccouche, et al., 2013).

3.3.9 Measurement of Members' Age (Age)

This study measures the age of audit committee members by using the total age of the audit committee members.

3.4 Measurement of Dependent Variables

This section details the measurement of dependent variables i.e. accruals quality and the cost of capital.

3.4.1 Measurement of Accruals Quality (AccQ)

Dechow and Dechev's (2002) model (hereafter referred to as the DD model) attempts to determine accruals quality by looking at their association with cash flows by regressing working capital accruals on cash flow from operations in the prior period, current period, and future period. The residual of the regression is the unexplained portion of the variation in working capital accruals and is employed as an inverse measure of accruals quality. That is, the higher the portion of unexplained variation, the lower the accruals quality.

$$TCA_{j,t} = \phi_{0,j} + \phi_{1,j}CFO_{j,t-1} + \phi_{2,j}CFO_{j,t} + \phi_{3,j}CFO_{j,t+1} + \nu_{j,t} \quad \textbf{(1)}$$

All variables are scaled by average total assets $(Assets_{j,t} + Assets_{j,t-1}) / 2$

where:

$TCA_{j,t}$ = firm j's total current accruals in year t ($\Delta CA_{j,t} - \Delta CL_{j,t} - \Delta Cash_{j,t} + \Delta STDEBT_{j,t}$)

$CFO_{j,t-1}$, $CFO_{j,t}$, $CFO_{j,t+1}$ = firm j's cash flow from operations in year t-1, t, and t+1, respectively

$\Delta CA_{j,t}$ = firm j's change in current assets between year t- 1 and year t

$\Delta CL_{j,t}$ = firm j's change in current liabilities between year t-1 and year t

$\Delta Cash_{j,t}$ = firm j's change in cash between year t-1 and year t

$\Delta STDEBT_{j,t}$ = firm j's change in short-term debt between year t-1 and year t

For each firm-year, Equation **(1)** was estimated using rolling ten-year windows. These estimations yielded ten firm- and year-specific residuals, $v_{j,t}$ $t = t-9,....,t,$ which formed the basis for the accruals quality measure, and $AccQ_j = \sigma(v_{j,t})$ is the standard deviation of firm j's residuals, with the larger standard deviations indicating poorer accruals quality. This is consistent with Issarawornrawanich (2011), $AccQ_j$ was multiplied by -1 so that the higher value of the new measure indicated higher accruals quality. $AccQ_j$ was my proxy for accruals quality.

3.4.2 Measurement of the Cost of Capital

The cost of capital consists of cost of debt and cost of equity. It can explain the measurement both of them as detailed below.

The Cost of Debt (Cost_D)

This study measured the cost of debt by using the percentage of interest expense divided by the average total debt (Gray, et al., 2009).

The Cost of Equity (Cost_E)

According to the review above, this study used the Capital Asset Pricing model (CAPM model) to measure the cost of equity which is the expected return from the investors' perspective. The CAPM model provides the following equation.

$$E(r_i) = r_f + \beta_i [E(r_m) - r_f)]$$

where

$E(r_i)$ = expected return for firm i

r_f = risk free rate, measured by government bond yield

β_i = firm i beta coefficient

$E(r_m)$ = expected return of the market

3.5 Control Variables for Analysis of Accruals Quality and the Cost of Capital

The control variables used in both analyses of accruals quality and the cost of capital were firm size, financial leverage, big4 auditor, and book-to-market ratio. A summary of the control variables for analysis of accruals quality and the cost of capital is presented in Tables 3.3 and 3.4, respectively.

3.5.1 Firm Size (F_Size)

Firm size was used as a control variable in the analysis of accruals quality. Large firms have to gain the greater advantage in business than the small firms. UBS Investment Bank (2004) indicates that larger companies tend to have higher credit ratings, representing lower investment risk. Previous research shows that large companies have higher accruals quality (Abdul Rahman & Mohamed Ali, 2006; Jaggi, & Leung, 2007; Piot & Janin, 2007; Baxter & Cotter, 2009; Thoopsamut & Jaikengkit, 2009; Marra, et al., 2011; Sun, et al., 2011; Alkdai & Hanefah, 2012; García, et al., 2012; Lynch & Williams, 2012; and Qi & Tian, 2012).

In addition, the researcher also used firm size as a control variable in the analysis of the cost of capital. Prior studies by Anderson et al. (2004) and Lorca et al. (2011) revealed a negative relationship between firm size and the cost of debt. Similarly, Ashbaugh et al. (2004), Francis et al. (2004), Gray et al. (2009), Chen, Chen, Lobo, and Wang (2011) and Demirkan et al. (2012) identified a negative relationship between firm size and the cost of equity.

Therefore, the researcher expects a positive association between firm size and accruals quality. Moreover, the researcher expects a negative association between firm size and the cost of capital. The size of the firm here is the natural logarithm of the fiscal year end market value of equity.

3.5.2 Financial Leverage (Leverage)

Leverage is included as a control variable in the model of accruals quality. Leverage represents the proportion of debt and equity, concerning which managers may have incentives to manage earnings upward to improve financial ratios to prevent the violation of debt covenants. According to UBS Investment Bank (2004), companies with high leverage tend to have lower credit ratings, because companies with a higher proportion of debt may run the risk of not paying back the principal and interest in time. Previous research identified a negative association between financial leverage and accruals quality (Piot & Janin, 2007; Baxter & Cotter, 2009; Alkdai & Hanefah, 2012; Lynch & Williams, 2012; Qi & Tian, 2012; and Baccouche, et al., 2013).

Furthermore, leverage is included in the cost of capital analysis as previous research by Anderson et al. (2004) and Francis et al. (2005) shows that a firm with a high leverage ratio will generate a high cost of debt. This is consistent with Francis et al. (2005), Gray et al. (2009) and Chen et al. (2011), who found that a the firm with a high leverage ratio will have a high cost of equity too.

Therefore, the researcher expects a negative association between financial leverage and accruals quality. Moreover, the researcher expects a positive association between financial leverage and the cost of capital. The financial leverage here is defined as the ratio of total debt divided by total assets.

3.5.3 Big 4 Auditor (Big4)

Big 4 auditor is used as a control variable only in the analysis of accruals quality. Teoh and Wong (1993) indicate that the big eight auditors (larger auditors) are perceived as being more credible than the non-big eight auditors. A large auditor tends to limit earnings management in order to protect their creditability and reputation. Previous studies by Carcello et al. (2006), Thoopsamut and Jaikengkit (2009) and Kent et al. (2010) show that auditor size has a positive relationship with accruals quality.

Therefore, the researcher expects a positive association between Big 4 auditor and accruals quality. The Big 4 auditor is measured by the dummy variables 1 and 0.

3.5.4 Book-to-Market Ratio (BM)

Book-to-market ratio is included only in the analysis of the cost of equity. Book-to-market can reflect growth opportunities and they could indicate the degree of

goodwill a firm has for the investors, which leads to a positive association between book to market and the cost of equity. Studies by Francis et al. (2004), Chen et al. (2011) and Demirkan et al. (2012) indicate a positive association between book-to-market and the cost of equity.

Thus, the researcher expects a positive association between book-to-market ratio and the cost of equity. Book-to-market is defined as the ratio of the book value of equity divided by the market value of equity.

Table 3.3 Summary of Control Variables for Analysis of Accruals Quality and their Measurement

Control Variables	Symbol	Measurement	Sign	Reference
Firm Size	F_Size	The natural logarithm of the fiscal year end market value of equity	+	Abdul Rahman and Mohamed Ali (2006), Jaggi and Leung (2007), Piot and Janin (2007), Baxter and Cotter (2009), Thoopsamut and Jaikengkit (2009), Marra et al. (2011), Sun et al. (2011), Qi and Tian (2012), Alkdai and Hanefah (2012), and Lynch and Williams (2012)
Financial Leverage	Leverage	The ratio of total debt divided by total assets	-	Piot and Janin (2007), Baxter and Cotter (2009), Alkdai and Hanefah (2012), Lynch and Williams (2012), Qi and Tian (2012), and Baccouche et al. (2013)
Big Four Auditor	Big4	Indicator variable with the value of "1" if audited by the Big 4 auditing firms and "0" otherwise	+	Thoopsamut and Jaikengkit (2009), and Kent et al. (2010)
Firm Size	F_Size	The natural logarithm of the fiscal year end market value of equity	-	Anderson et al. (2004), Francis et al. (2004), Gray et al. (2009), Lorca et al. (2011), and Shen and Huang (2013)

Table 3.3 Summary of Control Variables for Analysis of Accruals Quality and their Measurement (Cont.)

Control Variables	Symbol	Measurement	Sign	Reference
Financial Leverage	Leverage	The ratio of total debt divided by total assets	+	Anderson et al. (2004), Francis et al. (2005), Gray et al. (2009) and Chen et al. (2011)

Table 3.4 Summary of Control Variables for Analysis of the Cost of Capital and their Measurement

Control Variables	Symbol	Measurement	Sign	Reference
Book-to-Market Ratio	BM	The ratio of the book value of equity divided by the market value of equity	+	Francis et al. (2004), Chen et al. (2011), and Demirkan et al. (2012)

CHAPTER 4
EMPIRICAL RESULTS

This study examines the effect of audit committee characteristics on cost of capital through accruals quality.

This section reports on the descriptive statistics and multiple regression analyses from five models. The effect of audit committee characteristics on accruals quality is investigated in model (1). The effects of accruals quality on cost of debt and on cost of equity are examined in models (2) and (3), respectively. The effect of audit committee characteristics on the cost of debt is investigated in model (4). Finally, the effect of audit committee characteristics on the cost of equity is studied in model (5).

4.1 Descriptive Statistics

Table 4.1 presents the descriptive statistics of all observations consisting of the minimum, maximum, mean, medians and standard deviations of all variables. The mean and median of accruals quality (AccQ) are -0.0606 and -0.0523, respectively. The means of the cost of debt (Cost_D) and the cost of equity (Cost_E) of non-financial firms are 2.1217% and 3.3812%, respectively.

With respect to audit committee characteristics, accounting experts (AccExp) had a mean and median of 0.67 and 1.00, respectively. The mean and median of legal experts (LegExp) were 0.49 and 0.00, respectively. The mean and median of multiple directorships (Multi) were 2.6517 and 2.6667, respectively. The mean and median of tenure (Tenure) were 0.2972 and 0.00, respectively. The mean and median of female audit committee members (Female) were 0.35 and 0.00, respectively. The mean and median of audit committee independence (Ac_Ind) were -0.0579 and 0.00, respectively. The mean and median of audit committee size (Ac_Size) were 3.13 and 3.00, respectively. The mean and median of meeting frequency (Meet) were 6.00 and 5.00, respectively. The mean and median of members' age (Age) were 200.55 and 197.00, respectively.

With respect to the control variables, the mean and median of the natural logarithm of the sampled firms' equity market value (F_Size) were 3.6342 and 3.4819,

respectively. The mean and median of the firms' financial leverage (Leverage) were 0.3957 and 0.3908, respectively, indicating that 39% of sampled firms' assets were financed by debt and 61% by shareholders' equities. The mean and median of the book-to-market value of equity (BM) were 0.7286 and 0.6144, respectively. Finally, the dummy variable of the Big 4 auditors (Big4) had the mean and median of 0.59 and 1.00, respectively, indicating that 59% of the sampled firms during 2010 to 2012 were audited by Big 4 auditors.

Table 4.1 Descriptive Statistics

Variables	**Minimum**	**Maximum**	**Mean**	**Median**	**Standard Deviation**
AccQ	-0.16	0.00	-0.0606	-0.0523	0.0357
Cost_D	0.00	5.9727	2.1217	2.0803	1.7028
Cost_E	2.7674	3.8873	3.3812	3.4349	0.2329
AccExp	0.00	3.00	0.67	1.00	0.7240
LegExp	0.00	3.00	0.49	0.00	0.6710
Multi	0.00	9.6667	2.6517	2.6667	1.8307
Tenure	0.00	1.00	0.2972	0.00	0.3483
Female	0.00	3.00	0.35	0.00	0.6370
Ac_Ind	-1.40	0.00	-0.0579	0.00	0.1462
Ac_Size	2.00	5.00	3.13	3.00	0.3630
Meet	3.00	17.00	6.00	5.00	2.6870
Age	108.00	365.00	200.55	197.00	32.2960
F_Size	2.2280	5.7934	3.6342	3.4819	0.7039
Leverage	0.0028	1.2048	0.3957	0.3908	0.2085
Big4	0.00	1.00	0.59	1.00	0.4930
BM	-0.1932	4.3110	0.7286	0.6144	0.5492

The definitions of variables are given in Table 3.2

Table 4.2 shows the Pearson correlations between the dependent and explanatory variables. The table indicates that audit committee characteristics (i.e. multiple directorships) had a highly positive correlation with accruals quality. In

addition, accounting experts and meeting frequency correlated with the cost of debt. Also, a correlation was identified between female audit committee members and cost of equity. These correlation coefficients do not take into account the joint effects of other variables; therefore, multiple regression analysis should be performed to test the formal hypotheses.

Table 4.2 Correlation Matrix

	AccQ	Cost_D	Cost_E	AccExp	LegExp	Multi	Tenure	Female	Ac_Ind	Ac_Size	Meet	Age	F_Size	Leverage	Big4	BM
AccQ	1															
Cost_D	0.085	1														
Cost_E	0.100	-0.053	1													
AccExp	0.012	-0.108	-0.028	1												
LegExp	0.065	-0.007	0.055	0.129*	1											
Multi	0.170**	-0.028	0.069	-0.072	0.023	1										
Tenure	-0.054	0.080	-0.032	0.047	0.005	-0.145*	1									
Female	-0.018	0.024	0.113	0.180**	0.013	0.016	-0.091	1								
Ac_Ind	-0.004	-0.042	-0.081	-0.039	-0.056	-0.026	-0.122*	-0.159**	1							
Ac_Size	-0.034	-0.022	-0.075	0.172**	-0.009	0.068	-0.032	0.066	-0.121*	1						
Meet	0.048	0.146*	0.029	0.180**	-0.010	-0.018	0.016	0.168**	-0.066	0.102	1					
Age	0.058	0.091	-0.062	0.145*	0.046	-0.058	0.215**	-0.109	-0.112	0.715**	0.128*	1				
F_Size	0.108	-0.028	-0.272**	0.000	0.061	0.184**	0.062	-0.032	0.037	0.132*	0.190**	0.186**	1			
Leverage	-0.063	0.461**	-0.207**	0.051	-0.079	0.019	0.218**	-0.046	0.176**	0.109	0.065	0.115	0.098	1		
Big4	0.020	0.133*	0.171**	0.025	-0.049	-0.155*	-0.095	0.014	-0.040	-0.092	0.021	-0.154*	-0.598**	-0.121*	1	
BM	0.152*	-0.060	-0.052	-0.104	0.053	0.183**	0.008	-0.010	0.039	-0.041	0.031	-0.081	0.461**	0.075	-0.131**	1

** and * denote statistical significance at the 0.01 and the 0.05 levels, respectively.

4.2 Multiple Regression Results

4.2.1 The effect of audit committee characteristics on accruals quality

As Table 4.3 illustrates, the F-statistics of the regression model were significant at the 0.05 level, indicating that these models are statistically valid. The R^2 and adjusted R^2 of the model were 0.085 and 0.043 respectively, which means that the explanatory variables were able to explain and predict the dependent variable by 5%.

Table 4.3 also provides evidence of the effect of audit committee characteristics on accruals quality. The coefficient of multiple directorships (Multi) was positive and significant at the 0.01 level. For audit committee size, the coefficient of audit committee size (Ac_Size) was negatively significant at the 0.05 level. For audit committee member's age, the coefficient of audit committee member's age (Age) was positively significant at the 0.01 level.

Nonetheless, the coefficients of accounting experts (AccExp), legal experts (LegExp), tenure (Tenure), female audit committee (Female), audit committee independent (Ac_Ind), and meeting frequency (Meet) were not significant.

In addition, the coefficient of the Big 4 auditor (Big4) was positively significant at the 0.05 level. The coefficients of firm size (F_Size) and leverage (Leverage) were not significant.

Table 4.3 Multiple Regression of Accruals Quality on Audit Committee Characteristics

$AccQ_{i,t} = \beta_0 + \beta_1 AccExp_{i,t} + \beta_2 LegExp_{i,t} + \beta_3 Multi_{i,t} + \beta_4 Tenure_{i,t} + \beta_5 Female_{i,t} + \beta_6 Ac\_Ind_{i,t} + \beta_7 Ac\_Size_{i,t} + \beta_8 Meet_{i,t} + \beta_9 Age_{i,t} + \beta_{10} F\_Size + \beta_{11} Leverage + \beta_{12} Big4 + \varepsilon j$

Variables	Expected Sign	Coefficients	Standardized Coefficients	t-statistic	p-value
Intercept	None	-0.059		-2.875	0.004
AccExp	(+)	0.002	0.038	0.598	0.550
LegExp	(+)	0.002	0.030	0.499	0.618
Multi	(+)	**0.003**	**0.168**	**2.680**	**0.008**
Tenure	(+)	-0.008	-0.081	-1.226	0.221
Female	(+)	0.000	0.000	0.005	0.996
Ac_Ind	(+)	0.001	0.003	0.053	0.958
Ac_Size	(+/-)	**-0.022**	**-0.229**	**-2.477**	**0.014**
Meet	(+)	0.000	0.037	0.581	0.562
Age	(+)	**0.000**	**0.257**	**2.691**	**0.008**
F_Size	(+)	0.000	-0.003	-0.043	0.966
Leverage	(-)	-0.011	-0.066	-1.042	0.299
Big4	(+)	0.010	0.141	2.041	0.042
F-value			2.012		
p-value			0.024		
R^2			0.085		
Adjusted R^2			0.043		

The definitions of variables are given in Table 3.2.

4.2.2 The effect of accruals quality on the cost of capital

Tables 4.4 and 4.5 show the multiple regression results of the effect of accruals quality on the cost of debt and cost of equity, respectively. The adjusted R^2 for both the cost of debt model and the cost of equity model were 0.225 and 0.107 at the significance level of 0.01.

The coefficient of accruals quality (AccQ) was positively significant at the 0.05 level for both the cost of debt and cost of equity models.

The result of the control variables effect on the cost of capital indicates that the coefficient of firm size (F_Size) was insignificant in the cost of debt model, but the coefficient of firm size (F_Size) was negatively significant at the 0.01 level in the cost of equity model. The coefficient of leverage (Leverage) was positively significant at the 0.01 level in the cost of debt model. On the other hand, the coefficient of leverage (Leverage) was negatively significant at the 0.01 level in the cost of equity model. Also, the book-to-market ratio (BM) was included in the cost of equity model. The coefficient of the book-to-market ratio (BM) was not significant.

Table 4.4 Multiple Regression of Cost of Debt on Accruals Quality

$Cost\_D_{i,t} = \delta_0 + \delta_1 AccQ_{i,t} + \delta_2 F\_Size + \delta_3 Leverage + \mathcal{E}j$

Variables	**Expected Sign**	**Coefficients**	**Standardized Coefficients**	**t-statistic**	**p-value**
Intercept	None	1.713		3.212	0.001
AccQ	(-)	**5.935**	**0.124**	**2.305**	**0.022**
F_Size	(-)	-0.214	-0.088	-1.633	0.104
Leverage	(+)	3.903	0.478	8.869	0.000
F-value			27.218		
p-value			0.000		
R^2			0.234		
Adjusted R^2			0.225		

The definitions of the variables are given in Table 3.2.

Table 4.5 Multiple Regression of Cost of Equity on Accruals Quality

$Cost\_E_{i,t} = \delta_0 + \delta_1 AccQ_{i,t} + \delta_2 F\_Size + \delta_3 Leverage + \delta_4 BM + \mathcal{E}j$

Variables	Expected Sign	Coefficients	Standardized Coefficients	t-statistic	p-value
Intercept	None	54.573		14.932	0.000
AccQ	(-)	**25.668**	**0.119**	**2.052**	**0.041**
F_Size	(-)	-3.050	-0.280	-3.861	0.000
Leverage	(+)	-6.407	-0.174	-3.004	0.003
BM	(+)	-0.282	-0.020	-0.280	0.780
F-value			9.152		
p-value			0.000		
R^2			0.121		
Adjusted R^2			0.107		

The definitions of the variables are given in Table 3.2.

4.2.3 The effect of audit committee characteristics on the cost of capital

The results of the effect of audit committee characteristics on cost of debt and cost of equity are presented in Tables 4.6 and 4.7, respectively. Both the cost of debt and cost of equity were significant at the 0.01 level as revealed by the model *F*-statistics. The adjusted R^2 for the cost of debt and cost of equity models was 0.280 and 0.109, respectively.

The results from both models can be described as follows.

As presented in Tables 4.6 and 4.7, the coefficient of accounting experts (AccExp) was negatively significant at the 0.01 level only for the cost of debt model. The coefficient of multiple directorships (Multi) was positively significant at the 0.05 level only for the cost of equity model. The coefficient of audit committee independent (Ac_Ind) was negatively significant at the 0.05 level only for the cost of debt model. The coefficient of audit committee size (Ac_Size) was negatively significant at the 0.01 level only for the cost of debt model. The coefficient of the meeting frequency of audit committee (Meet) was positively significant at the 0.05 level only for the cost of debt

model. The coefficient of the audit committee members' age (Age) was positively significant at the 0.01 level only for the cost of debt model.

Also, the coefficient of legal experts (LegExp), tenure of audit committee (Tenure) and female audit committee members (Female) for both the cost of debt and cost of equity models were not significant.

Tables 4.6 and 4.7 present the results of the control variables. The coefficient of firm size (F_Size) was negatively significant at the 0.01 level only for the cost of equity model. The coefficient of financial leverage (Leverage) was positively significant at the 0.01 level for the cost of debt model and negatively significant at the 0.01 level for the cost of equity model. Furthermore, the book-to-market ratio (BM) was included in the cost of equity model. The coefficient of the book-to-market ratio (BM) was not significant.

Table 4.6 Multiple Regression of Cost of Debt on Audit Committee Characteristics

$$Cost\_D_{i,t} = \gamma_0 + \gamma_1 AccExp_{i,t} + \gamma_2 LegExp_{i,t} + \gamma_3 Multi_{i,t} + \gamma_4 Tenure_{i,t} + \gamma_5 Female_{i,t} + \gamma_6 Acc\_Ind_{i,t} + \gamma_7 Acc\_Size_{i,t} + \gamma_8 Meet_{i,t} + \gamma_9 Age_{i,t} + \gamma_{10} F\_Size + \gamma_{11} Leverage + \mathcal{E}j$$

Variables	**Expected Sign**	**Coefficients**	**Standardized Coefficients**	**t-statistic**	**p-value**
Intercept	None	2.099		2.455	0.015
AccExp	(-)	**-0.404**	**-0.172**	**-3.145**	**0.002**
LegExp	(-)	0.110	0.043	0.826	0.409
Multi	(-)	-0.015	-0.016	-0.305	0.761
Tenure	(-)	-0.456	-0.093	-1.619	0.107
Female	(-)	0.175	0.065	1.181	0.239
Ac_Ind	(-)	**-1.497**	**-0.129**	**-2.346**	**0.020**
Ac_Size	(+/-)	**-1.146**	**-0.244**	**-3.054**	**0.002**
Meet	(-)	**0.088**	**0.139**	**2.550**	**0.011**
Age	(-)	**0.013**	**0.243**	**2.951**	**0.003**

Table 4.6 Multiple Regression of Cost of Debt on Audit Committee Characteristics (Con.)

Variables	Expected Sign	Coefficients	Standardized Coefficients	t-statistic	p-value
F_Size	(-)	-0.255	-0.105	-1.920	0.056
Leverage	(+)	4.247	0.520	9.440	0.000
F-value			10.558		
p-value			0.000		
R^2			0.309		
Adjusted R^2			0.280		

The definitions of the variables are given in Table 3.2.

Table 4.7 Multiple Regression of Cost of Equity on Audit Committee Characteristics

$Cost\_E_{i,t} = \gamma_0 + \gamma_1 AccExp_{i,t} + \gamma_2 LegExp_{i,t} + \gamma_3 Multi_{i,t} + \gamma_4 Tenure_{i,t} + \gamma_5 Female_{i,t} + \gamma_6 Acc\_Ind_{i,t} + \gamma_7 Acc\_Size_{i,t} + \gamma_8 Meet_{i,t} + \gamma_9 Age_{i,t} + \gamma_{10} F\_Size + \gamma_{11} Leverage + \gamma_{12} BM + \mathcal{E}j$

Variables	Expected Sign	Coefficients	Standardized Coefficients	t-statistic	p-value
Intercept	None	52.218		10.488	0.000
AccExp	(-)	-0.525	-0.050	-0.817	0.414
LegExp	(-)	0.645	0.056	0.965	0.335
Multi	(-)	**0.583**	**0.139**	**2.312**	**0.022**
Tenure	(-)	0.745	0.034	0.528	0.598
Female	(-)	1.232	0.102	1.656	0.099
Ac_Ind	(-)	-0.458	-0.009	-0.143	0.886
Ac_Size	(+/-)	-1.926	-0.091	-1.024	0.307
Meet	(-)	0.259	0.091	1.470	0.143
Age	(-)	0.020	0.084	0.914	0.362
F_Size	(-)	-3.324	-0.305	-4.056	0.000

Table 4.7 Multiple Regression of Cost of Equity on Audit Committee Characteristics (Cont.)

Variables	Expected Sign	Coefficients	Standardized Coefficients	t-statistic	p-value
Leverage	(+)	-6.609	-0.180	-2.926	0.004
BM	(+)	-0.054	-0.004	-0.053	0.958
F-value			3.776		
p-value			0.000		
R^2			0.149		
Adjusted R^2			0.109		

The definitions of the variables are given in Table 3.2.

4.2.4 The effect of audit committee characteristics on the cost of capital through accruals quality

Tables 4.8 and 4.9 present the results of the effect of audit committee characteristics on the cost of debt and cost of equity through accruals quality. As previously described, the effect of accruals quality on the cost of capital is positively significant in both the cost of debt and cost of equity models. The results indicate that accruals quality is a mediating variable between audit committee characteristics and the cost of capital.

Tables 4.6 and 4.7 show that multiple directorships (Multi) only has a direct effect on the cost of equity. Tables 4.8 and 4.9 illustrate the indirect effects of multiple directorships on the cost of debt and cost of equity through accruals quality. The product of the simple correlation of multiple directorships on the cost of debt and cost of equity β_3 x δ_1 are 0.021 and 0.020, respectively.

Table 4.6 presents the negatively significant effect of audit committee size (Ac_Size) on the cost of debt. Tables 4.8 and 4.9 show the results of the effect of audit committee size on the cost of capital through accruals quality. The products of the simple correlations of audit committee size on the cost of debt and cost of equity β_7 x δ_1 are -0.028 and -0.027, respectively.

Furthermore, Tables 4.6 and 4.7 show that the age of audit committee members (Age) only has a direct effect on the cost of debt. Tables 4.8 and 4.9 show the effects of the age of audit committee members on the cost of capital through accruals quality. The product of the simple correlation of the age of audit committee members on the cost of debt and cost of equity β_9 x δ_1 are 0.032 and 0.031, respectively.

Table 4.8 The Effect of Audit Committee Characteristics on Cost of Debt through Accruals Quality

Model: Multiple Regression of:	Table	Variables	Symbol	Standardized Coefficient	t-statistic	p-value	Level
Mediating Variable							
Accruals Quality on Cost of Debt	4.4	AccQ	δ_1	0.124	2.305	0.022	*
Direct Effects							
Audit Committee Characteristics on Cost of Debt	4.6	Multi	γ_3	-0.016	-0.305	0.761	
Audit Committee Characteristics on Accruals Quality	4.3	Multi	β_3	0.168	2.680	0.008	**
Indirect Effects							
The product of regression coefficient			β_3 x δ_1	0.021			
Direct Effects							
Audit Committee Characteristics on Cost of Debt	4.6	Ac_Size	γ_7	-0.244	-3.054	0.002	**
Audit Committee Characteristics on Accruals Quality	4.3	Ac_Size	β_7	-0.229	-2.477	0.014	*
Indirect Effects							
The product of regression coefficient			β_7 x δ_1	-0.028			
Direct Effects							
Audit Committee Characteristics on Cost of Debt	4.6	Age	γ_9	0.243	2.951	0.003	**
Audit Committee Characteristics on Accruals Quality	4.3	Age	β_9	0.257	2.691	0.008	**
Indirect Effects							
The product of regression coefficient			β_9 x δ_1	0.032			

* and ** represent significance at 0.05 and 0.01 levels, respectively.

Table 4.9 The Effect of Audit Committee Characteristics on Cost of Equity through Accruals Quality

Model: Multiple Regression of:	Table	Variables	Symbol	Standardized Coefficient	t-statistic	p-value	Level
Mediating Variable							
Accruals Quality on Cost of Equity	4.5	AccQ	δ_1	0.119	2.052	0.041	*
Direct Effects							
Audit Committee Characteristics on Cost of Equity	4.7	Multi	γ_3	0.139	2.312	0.022	*
Audit Committee Characteristics on Accruals Quality	4.3	Multi	β_3	0.168	2.680	0.008	**
Indirect Effects							
The product of regression coefficient			β_3 x δ_1	0.020			
Direct Effects							
Audit Committee Characteristics on Cost of Equity	4.7	Ac_Size	γ_7	-0.091	-1.024	0.307	
Audit Committee Characteristics on Accruals Quality	4.3	Ac_Size	β_7	-0.229	-2.477	0.014	*
Indirect Effects							
The product of regression coefficient			β_7 x δ_1	-0.027			
Direct Effects							
Audit Committee Characteristics on Cost of Equity	4.7	Age	γ_9	0.084	0.914	0.362	
Audit Committee Characteristics Accruals Quality	4.3	Age	β_9	0.257	2.691	0.008	**
Indirect Effects							
The product of regression coefficient			β_9 x δ_1	0.031			

* and ** represent significance at 0.05 and 0.01 levels, respectively.

Table 4.10 Summary of the Results of Hypothesis Testing

Hypothesis No.	Models			Expected Sign	Tested Sign	Results	Level
The Effect of Audit Committee Characteristics on Accruals Quality							
H1a	AccExp			+		Not Support	
H2a	LegExp			+		Not Support	
H3a	Multi			+	+	Support	**
H4a	Tenure			+		Not Support	
H5a	Female	→	AccQ	+		Not Support	
H6a	Ac_Ind			+		Not Support	
H7a	Ac_Size			+/-	-	Support	*
H8a	Meet			+		Not Support	
H9a	Age			+	+	Support	**
The Effect of Accruals Quality on Cost of Debt							
H10	AccQ	→	Cost_D	-	+	Support but opposite sign	**

Table 4.10 Summary of the Results of Hypothesis Testing (Cont.)

Hypothesis No.	Models			Expected Sign	Tested Sign	Results	Level
The Effect of Audit Committee Characteristics on Cost of Debt							
Direct Effect							
H1b	AccExp	→	Cost_D	-	-	Support	**
H2b	LegExp	→	Cost_D	-		Not Support	
H3b	Multi	→	Cost_D	-		Not Support	
H4b	Tenure	→	Cost_D	-		Not Support	
H5b	Female	→	Cost_D	-		Not Support	
H6b	Ac_Ind	→	Cost_D	-	-	Support	*
H7b	Ac_Size	→	Cost_D	+/-	-	Support	**
H8b	Meet	→	Cost_D	-	+	Support but opposite sign	*
H9b	Age	→	Cost_D	-	+	Support but opposite sign	**
Indirect Effect							
H1c	AccExp	→ AccQ →	Cost_D	-		Not Support	
H2c	LegExp	→ AccQ →	Cost_D	-		Not Support	
H3c	Multi	→ AccQ →	Cost_D	-	+	Support but opposite sign	
H4c	Tenure	→ AccQ →	Cost_D	-		Not Support	
H5c	Female	→ AccQ →	Cost_D	-		Not Support	
H6c	Ac_Ind	→ AccQ →	Cost_D	-		Not Support	
H7c	Ac_Size	→ AccQ →	Cost_D	+/-	-	Support	
H8c	Meet	→ AccQ →	Cost_D	-		Not Support	
H9c	Age	→ AccQ →	Cost_D	-	+	Support but opposite sign	

Table 4.10 Summary of the Results of Hypothesis Testing (Cont.)

Hypothesis No.	Models			Expected Sign	Tested Sign	Results	Level
The Effect of Accruals Quality on Cost of Equity							
H10	AccQ		Cost_E	-	+	Support but opposite sign	*
The Effect of Audit Committee Characteristics on Cost of Equity							
Direct Effect							
H1b	AccExp			-		Not Support	
H2b	LegExp			-		Not Support	
H3b	Multi			-	+	Support but opposite sign	*
H4b	Tenure			-		Not Support	
H5b	Female	→	Cost_E	-		Not Support	
H6b	Ac_Ind			-		Not Support	
H7b	Ac_Size			+/-		Not Support	
H8b	Meet			-		Not Support	
H9b	Age			-		Not Support	
Indirect Effect							
H1c	AccExp			-		Not Support	
H2c	LegExp			-		Not Support	
H3c	Multi			-	+	Support	
H4c	Tenure			-		Not Support	
H5c	Female	→ AccQ →	Cost_E	-		Not Support	
H6c	Ac_Ind			-		Not Support	
H7c	Ac_Size			+/-	-	Support	
H8c	Meet			-		Not Support	
H9c	Age			-	+	Support	

* and ** represent significance at 0.05 and 0.01 levels, respectively.

CHAPTER 5
CONCLUSION AND RECOMMENCATIONS

The purpose of this study was to examine the effect of audit committee characteristics, including accounting experts, legal experts, multiple directorships, tenure, female audit committee, audit committee independent, audit committee size, meeting frequency, and member's age, on the cost of capital in terms of the cost of debt and the cost of equity through accruals quality of listed non-financial firms in Thailand during 2010 to 2012. Thus, this chapter summarized the overview of the study, all findings of the hypothesis testing, and also provided conclusions and direction for further studies.

This study focused on research questions and hypotheses as below:

Research Question 1: What is the relationship among an audit committee with accounting experts, accruals quality and the cost of capital?

Research Hypotheses:

H1a: An audit committee with accounting experts is positively related to accruals quality.

H1b: An audit committee with accounting experts is negatively related to the cost of capital.

H1c: There is a relationship between an audit committee with accounting experts and the cost of capital through accruals quality.

Research Question 2: What is the relationship among an audit committee with legal experts, accruals quality and the cost of capital?

Research Hypotheses:

H2a: An audit committee with legal experts is positively related to accruals quality.

H2b: An audit committee with legal experts is negatively related to the cost of capital.

H2c: There is a relationship between an audit committee with legal experts and the cost of capital through accruals quality.

Research Question 3: What is the relationship among an audit committee with multiple directorships, accruals quality and the cost of capital?

Research Hypotheses:

H3a: An audit committee with multiple directorships is positively related to accruals quality.

H3b: An audit committee with multiple directorships is negatively related to the cost of capital.

H3c: There is a relationship between an audit committee with multiple directorships and the cost of capital through accruals quality.

Research Question 4: What is the relationship among the tenure of audit committee members, accruals quality and the cost of capital?

Research Hypotheses:

H4a: The tenure of audit committee members is positively related with accruals quality.

H4b: The tenure of audit committee members is negatively related with the cost of capital.

H4c: There is a relationship between the tenure of audit committee members and the cost of capital through accruals quality.

Research Question 5: What is the relationship among female audit committee members, accruals quality and the cost of capital?

Research Hypotheses:

H5a: Female audit committee members are positively related to accruals quality.

H5b: Female audit committee members are negatively related to the cost of capital.

H5c: There is a relationship between female audit committee members and the cost of capital through accruals quality.

Research Question 6: What is the relationship among audit committee independence, accruals quality and the cost of capital?

Research Hypotheses:

H6a: Audit committee independence is positively related to accruals quality.

H6b: Audit committee independence is negatively related to the cost of capital.

H6c: There is a relationship between audit committee independence and the cost of capital through accruals quality.

Research Question 7: What is the relationship among audit committee size, accruals quality and the cost of capital?

Research Hypotheses:

H7a: There is an association audit committee size with accruals quality.

H7b: There is an association audit committee size with the cost of capital.

H7c: There is a relationship between audit committee size and the cost of capital through accruals quality.

Research Question 8: What is the relationship among the meeting frequency of the audit committee, accruals quality and the cost of capital?

Research Hypotheses:

H8a: The meeting frequency of the audit committee is positively related to accruals quality.

H8b: The meeting frequency of the audit committee is negatively related to the cost of capital.

H8c: There is a relationship between the meeting frequency of the audit committee and the cost of capital through accruals quality.

Research Question 9: What is the relationship among the age of audit committee members, accruals quality and the cost of capital?

Research Hypotheses:

H9a: The age of the audit committee members is positively related to accruals quality.

H9b: The age of the audit committee members is negatively related to the cost of capital.

H9c: There is a relationship between the age of the audit committee members and the cost of capital through accruals quality.

Research Question 10: What is the relationship between accruals quality and the cost of capital?

Research Hypothesis:

H10: Accruals quality is negatively related to the cost of capital.

5.1 Summary

5.1.1 The effect of audit committee characteristics on accruals quality

The effect of audit committee characteristics on accruals quality can be described as follows.

The coefficient of multiple directorships was a positive relationship to accruals quality at the 0.01 statistical significance level, implying that an audit committee with multiple directorships is positively related to accruals quality, which supports Hypothesis 3a. This was consistent with the findings of Yang and Krishnan (2005), which stated that firms with audit committees with more multiple directorships had higher accruals quality. Audit committees with multiple directorships affected accruals quality because directors who served on various boards may gain managerial expertise (Carpenter & Westphal, 2001; and Perry & Peyer; 2005) and might increase the quality of the financial reports (Dao, et al., 2013). For audit committee size, the coefficient of audit committee size was negatively related with accruals quality at the 0.05 statistical significance level. This result supported Hypothesis 7a, indicating that firms with smaller audit committee size had high accruals quality. The result was consistent with those in the studies of Ghosh et al. (2010) and Baccouche et al. (2013), which showed a significant negative relationship between audit committee size and accruals quality. This implied that small audit committee gained more effective monitor (Jensen, 1993; and Yermack, 1996). For audit committee age, the coefficient of audit committee age was positively related to accruals quality with at the 0.01 statistical significance level. This result supported Hypothesis 9a, indicating that the age of the audit committee members were positively related to accruals quality. This was in line with Qi and Tian (2012), who found that there was a significant positive relationship between audit committee age and accruals quality. Audit committee age affected accruals quality

because the more experience of older members of the audit committee, the more helpful to assist executive committee to identify the weaknesses of the internal control system.

Nonetheless, the coefficient of accounting experts, legal experts, tenure, female audit committee members, audit committee independence, and meeting frequency were not significant factors for accruals quality. Thus, Hypotheses 1a, 2a, 4a, 5a, 6a, and 8a were not accepted, indicating that accounting experts, legal experts, tenure, female audit committee members, audit committee independence, and meeting frequency were not significantly related to accruals quality.

In addition, the coefficient of the Big 4 auditors (Big4) was positively related to accruals quality at the 0.05 statistical significance level. This evidence was consistent with Thoopsamut and Jaikengkit (2009) and Kent et al. (2010), who found that firms employing the Big 4 auditors had higher accruals quality than those firms employed the non-Big 4 auditors. The coefficients of firm size and leverage did not show statistical significance, indicating that firms' size and leverage were not significant related to accruals quality.

5.1.2 The effects of audit committee characteristics on the cost of capital

The results of the cost of debt and the cost of equity models can be described as follows.

The coefficient of accounting experts was negatively significance at the 0.01 level only for the cost of debt model. Hypothesis 1b was hence supported, indicating that accounting experts increased the efficiency of the audit committee's performance and decreased the cost of debt. The coefficient of multiple directorships was positively significance at the 0.05 level only for the cost of equity model. As a result, Hypothesis 3b was not accepted, indicating that firms with more audit committee members, who had multiple directorships, had a high cost of equity. Most directors who served on various boards may not have enough time to carry out effective monitoring for more vulnerable, or the other words, they might neglect their duties (Ang, 2000). This might be the same reason as why the Securities and Exchange Commission of Thailand (SEC) indicated that the audit committee should not be a director in the other companies of a company group exceeding five companies. In addition, from interview some investors expressed their opinions that sometimes famous business men were often invited to be

the directors of several companies at the same time; therefore, they cannot work with fully capacity due to the lack of adequate time, or they sometime may not even perform their duties at all. This might lead to the increase in the cost of equity.

The coefficient of audit committee independence was negatively at the 0.05 statistical significance level only for the cost of debt model. The result supports Hypothesis 6b, implying that audit committee independence was negatively related to the cost of capital. This result was similar to Anderson et al. (2004), indicating firms with audit committee independence were negatively related to the cost of debt. This was because audit committee independence served as a superior monitor for the financial reporting process and limits earnings manipulation, leading to decrease investment risk and the cost of capital. The coefficient of audit committee size was negatively at the 0.01 significance level only for the cost of debt model, which supported Hypothesis 7b. This indicated that audit committee size was negatively related to the cost of capital. This was consistent with Anderson et al. (2004) who found a negative relationship between audit committee size and the cost of debt, implying that large audit committees were more effective monitors.

The coefficient of the meeting frequency of audit committee was positively at the 0.05 significance level only for the cost of debt model. The result was inconsistent with Hypothesis 8b, indicating that an increase in the meeting frequency of an audit committee might increase the cost of debt. According to the investor interviews, the increase in the frequency of the audit committee meeting might reflect that the company faced problems and tried to solve those problems, which were occurred from operating without planning or poor performance. Normally, large companies also need more meeting for monitor all major aspects. In the other view, the higher frequency of the audit committee meeting, the more positive the enthusiasm for the achievement.

The coefficient of audit committee members' age was positively significance at the 0.01 statistical significance level only for the cost of debt model. The result did not accept Hypothesis 9b, indicating that old audit committee might lead to a higher cost of debt. This might be because the younger members of the audit committees might have more up-to-date their knowledge and effective monitors than the older ones. This was consistent with some investors' opinions stated that an older audit committee

might have a view towards work in term of obsolete knowledge, lazy and inefficient operation. However, they were appointed and benefits in the past more than their current performance. In contrast, some investors pointed out that old audit committee members were intelligent and valuable persons because of gaining depth knowledge from their long experiences, especially true as the elderly remain healthy increasingly so nowadays, they can work effectively. Additionally, the rash decisions of young audit committee might be the weakness for companies.

Furthermore, the coefficient of legal experts, the tenure of audit committee members and female audit committee members did not show statistical significant factors for both the cost of debt and the cost of equity models. Thus, Hypotheses 2b, 4b and 5b were not accepted, indicating that legal experts, tenure of audit committee members and female audit committee members did not play key roles on the cost of debt and the cost of equity.

In addition, the coefficient of firm size was negatively statistical significance at the 0.01 statistical significance level only for the cost of equity model. This was consistent with Ashbaugh et al. (2004), Francis et al. (2004), Gray et al. (2009), Chen et al. (2011) and Demirkan et al. (2012), who identified a negative relationship between firm size and the cost of equity. Interestingly, the coefficient of financial leverage was positively at the 0.01significance level for the cost of debt model but negatively at the 0.01 significance level for the cost of equity model. This was consistent with Anderson et al. (2004) and Francis et al. (2005) who found that a firm with a high leverage ratio might increase the cost of debt. However, this contrasted with Francis et al. (2005), Gray et al. (2009) and Chen et al. (2011) who indicated that firms with high leverage ratios had low cost of equity. Additionally, the book-to-market ratio was included in the cost of equity model. The coefficient of the book-to-market ratio was not significant in this model, indicating that the book-to-market ratio was not significantly related to the cost of equity.

5.1.3 The effect of accruals quality on the cost of capital

The coefficient of accruals quality was positively at the 0.05 statistical significance level for both the cost of debt model and the cost of equity model. These results were inconsistent with Hypothesis 10, indicating that firms with high accruals

quality had a high cost of debt and cost of equity. The results contrasted with the prior studies as Demirkan et al. (2012), and Shen and Huang (2013), which found a significant negative relationship between accruals quality and the cost of debt, and the studies of Ashbaugh et al. (2004), Francis et al. (2004, 2005), Bhattacharya et al. (2012), and Demirkan et al. (2012), which found a significant negative relationship between accruals quality and the cost of equity.

The results were robusted by employing several proxies of accruals quality; namely discretionary accruals from the modified-Jones model (1995) and performance-matched discretionary accruals from Kothari et al. (2005). They also found a positive relationship between accruals quality and the cost of capital. For this study, the hypothesis was not accepted. This might be because of the following reasons as below.

Typically, accruals quality was a proxy of earnings quality. If the firm had high managed earnings, it might have low earnings quality (low accruals quality). However, firms with low accruals quality, seemed have a good performance because the earnings were managed based on a lower cost of capital. Penman and Zhang (2002) found that investors in the stock markets did not have insights into the quality of the earnings of a firm. The results from investor interview in Thailand, especially individual investors, revealed that most of them did not take into account the quality of the financial statements. Also, Chan, Lin, and Strong (2009) studied the relationship between accounting conservatism and cost of equity of firms in the UK, and found that ex-post conservatism had a positive impact on the cost of equity, which might be due to conservatism being less persistent and predictable for investors.

Based on The Thai developing economies made this study more interesting because of the difference results from developed countries, which most often found a negative relationship between accruals quality and the cost of capital as show in previous studies.

Moreover, the association accruals quality with the cost of capital exists, indicating that accruals quality was a mediating variable between audit committee characteristics and the cost of capital; including cost of debt and cost of equity.

In regard to control variables, the results for both the cost of debt model and the cost of equity model were as follows:

The coefficient of firm size was insignificant for the cost of debt model, but was negatively at the 0.01 statistical significance level for the cost of equity model. The latter one was consistent with prior studies (Ashbaugh, et al., 2004; Francis, et al., 2004; Gray, et al., 2009; Chen, et al., 2011; and Demirkan, et al., 2012). The result indicated that large firms were expected to be less risky, leading to low cost of equity. The coefficient of leverage was positively at the 0.01 significance level for the cost of debt model, being consistent with prior researchers such as Anderson et al. (2004) and Francis et al. (2005) who found that companies with high proportions of debt maight increase financial risk in terms of returning the principals and paying interests on time. Additionally, the coefficient of leverage was negatively at the 0.01 statistical significance level for the cost of equity model. This result contrasted with Francis et al. (2005), Gray et al. (2009) and Chen et al. (2011), who indicated that firms with high leverage ratios had low costs of equity. The coefficient of the book-to-market ratio was not significant, indicating that the book-to-market ratio was not significant related to the cost of equity.

5.1.4 The effects of audit committee characteristics on the cost of capital through accruals quality

As prior subsection above, the relationship between accruals quality and the cost of capital was positively significant for both the cost of debt and the cost of equity models, reflecting that accruals quality was a key mediating variable between audit committee characteristics and the cost of capital.

The further results indicated that the direct effect of multiple directorships existed only for the cost of equity and it also showed positive effects of multiple directorships on accruals quality. Thus, Hypothesis 3c was accepted, indicating that multiple directorships had a positive effect on the cost of debt and the cost of equity through accruals quality.

The results indicated a significantly negative association audit committee size with the cost of debt. Also, the results showed a negative association audit committee size with accruals quality. These results supported Hypothesis 7c, indicating that audit committee size had a negative effect on the cost of debt and the cost of equity through accruals quality.

In regard to audit committee members' age, its direct effect existed only for the cost of debt. Also, the results showed the positive effects of audit committee members' age on accruals quality. As a result, Hypothesis 9c was accepted, indicating that the age of audit committee members had a positive effect on the cost of debt and the cost of equity through accruals quality.

In addition, the results showed that accounting experts, legal experts, the tenure of audit committee members, female audit committee members, audit committee independence, and meeting frequency had no significant effects on accruals quality. These implied that accounting experts, legal experts, the tenure of audit committee members, female audit committee members, audit committee independence, and meeting frequency did not play key roles on the cost of capital through accruals quality. Thus, Hypotheses 1c, 2c, 4c, 5c, 6c and 8c, were not accepted.

5.2 Conclusions

The results showed that firms with high accruals quality have high costs of capital (cost of debt and cost of equity), and that accruals quality was employed as a mediating variable between audit committee characteristics and the cost of capital. These results were not in line with the findings of Demirkan et al. (2012), Shen, and Huang (2013) which showed a significantly negative relationship between accruals quality and the cost of debt, while Ashbaugh et al. (2004), Francis et al. (2004, 2005), Bhattacharya et al. (2012), and Demirkan et al. (2012) discovered a significantly negative relationship between accruals quality and the cost of equity. The analysis results of the effects of the audit committee characteristics on accruals quality and the cost of capital were as follows:

Firms with high multiple directorships had high accruals quality and high costs of capital. Multiple directorships had a direct effect on the cost of equity, and an indirect positive effect on accruals quality on the cost of debt and the cost of equity. The multiple directorships with its positive relationship with the cost of capital being inconsistent with the hypothesis might be because the directors served on various boards and in various businesses might increase in the chances of neglecting their duties.

The results showed that firms with large audit committee size had low accruals quality and low cost of capital. Audit committee size had a directly negative effect on the cost of debt, and an indirectly negative effect through accruals quality on the cost of debt and the cost of equity because the investors in Thailand though that firms with large audit committee sizes were more effective monitors. Similar to Beasley (2001) and Ghosh et al. (2010), they pointed out that large committees provided superior monitors of the financial accounting process because large audit committees had more extensive knowledge. Thus, a large audit committee was better in the perspective of investors. This might result from a low investment risk and low the cost of capital. However, the results of this study contrasted with the perspective of accounting information quality. The results revealed that there was a negative relationship between audit committee size and accruals quality. This indicated that small audit committees created high accruals quality, so a small audit committee was better in the perspective of accounting information quality. This was consistent with the studies of Jensen (1993) and Yermack (1996) that showed small audit committees were more effective monitors.

Finally, firms with old members on the audit committee had high accruals quality and high costs of capital. The perspective of accounting information quality was one of a positive relationship between audit committee members age and accruals quality. The hypothesis that old members in the audit committee created high accruals quality suggested that this was a positive characteristic from the perspective of accounting information quality. However, the results of this study contrasted with the perspective of investors that audit committee members age had a directly positive effect on the cost of debt, and an indirectly positive effect through accruals quality on the cost of debt and the cost of equity. From their perspective, they were confident that young members on an audit committee could work honestly and effectively. As a result, there was low investment risk and low cost of capital.

To sum up, the results showed that positive audit committee characteristics (high accounting experts, low multiple directorships, high audit committee independence, large audit committee size, low meeting frequency and young members on the audit committee) decreased the cost of capital of a firm directly and through the quality of accounting information (accruals quality) indirectly. This was consistent with the

interview, whereby investors focused on the importance of the quality of the audit committee, board of directors and management, which reflected the corporate governance of the firm, implying that the firm with good accounting information quality might protect the rights of shareholders.

5.3 Contributions of the Study

This study contributed academically to accounting literature, investors, shareholders, auditors, standard setters, regulators and other stakeholders as described below.

5.3.1 Contribution to academic knowledge

This study contributed to the literature on audit committee characteristics by investigating the association of audit committee characteristics with the cost of capital. This study provided evidences of an indirect effect of audit committee characteristics, including multiple directorships, audit committee size and audit committee members' age on the cost of capital mediated by accruals quality. Furthermore, this study provided evidence of the direct effect of audit committee characteristics; including accounting experts and multiple directorships on the cost of capital. Importantly, this study fulfilled research gap by including new variables in terms of other characteristics of the audit committee.

In addition, this study contributed to the literature on earnings management or earnings quality by providing empirical evidences on the effect of accruals quality on the cost of capital of Thai listed non-financial companies. The study found that firms with high accruals quality (high earnings quality and low earnings management) had high costs of capital, and the accruals quality was a mediating variable between audit committee characteristics and the cost of capital.

5.3.2 Contribution to investors and regulators

These results were meaningful for investors and regulators for a better understanding of audit committee characteristics which impacted on corporate governance of Thai listed companies and also on accruals quality and the cost of capital. In regard to investors, they could make better investment decisions based on the quality

of the audit committee characteristics of the firms in order to get a sustainable return on investment.

For regulators, they could use these research results to promote the benefits of good corporate governance or to stimulate Thai listed firms to develop and improve for better corporate governance system in order to protect investors in the Thai capital market.

5.4 Further Study

This study focused on certain characteristics of the audit committee. Thus, for the future research the researcher should include new variables related to other characteristics of the audit committee such as accounting-legal experts (joint experts) and audit committee industry experts, which might affect accruals quality and the cost of capital of firms. The study of Krishnan et al. (2011) showed that joint experts was considered as one of the best characteristics of audit committee; whereas, this study employed both accounting experts and legal experts because of avoiding multicollinearity problem. However, in the future, further researchers should include other experts such as industry experts. This was supported by investors' interview, which pointed out that audit committee or board of directors must include members who were industry experts to gain more direct knowledge and experience in related business sector.

Based on the results of meeting frequency and member's age of the audit committee had a positive relationship with cost of debt, multiple directorships had a positive relationship with cost of equity, and accruals quality had the positive relationship with both of cost of debt and cost of equity, which were inconsistent with the hypotheses. Therefore, in the near future, the researchers should analyze in depth in the relationship of the above variables in order to confirm the results of this study. Alternatively, the further researchers might be expand time period to robust the models.

Finally, this study measured the cost of equity using the CAPM model which comprised of realized data that occurred in the past (ex-post cost of equity). To gain more usefulness, future researchers should include future data set (ex-ante cost of equity) into the models. This will be a significant information for investors to make investment decision. Unfortunately, for Thai capital market, these data were unavailable now, but it was expected to perform in the near future.

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APPENDICES

APPENDIX A

Multiple Regression Assumption

Multiple Regression Assumption

In assessing the linear regression assumptions, it was found that the data did not violate the linear regression assumptions. This is explained in (1) to (4) as follows:

(1) *Variance Inflation Factors* (VIF) are lower than 10, indicating no multicollinearity problems among variables.

(2) *Durbin-Watson* coefficient value is between 1.5 and 2.5 with tests indicating that an autocorrelation does not exist.

(3) Analyze scatterplot of standardized residual of dependent variables and transformed dependent variable (i.e. the cost of equity) to ensure that there are no heteroscadasticity problems.

(4) Based on the Central Limit Theorem, the distribution of residuals in a large sample size is normal. A sample size of 30 or more is generally regarded as large (Dielman, 2005). Also, as a rule of thumb, “normality can have serious effects in small samples (less than 50 cases), but the impact effectively diminishes when sample sizes reach 200 cases or more” (Hair, Black, Babin, Anderson, & Tatham 2006). The sample size of this study is 272, which is far larger than 200. Thus, the assumption of the normal distribution of residuals is justified.

1. Multiple Regression of Accruals Quality on Audit Committee Characteristics

Table 1.1 Show Tolerance and VIF

Variable	Tolerance	VIF
AccExp	0.885	1.130
LegExp	0.958	1.044
Multi	0.904	1.106
Tenure	0.801	1.248
Female	0.866	1.155
Ac_Ind	0.885	1.129
Ac_Size	0.415	2.412
Meet	0.893	1.120
Age	0.386	2.591
F_Size	0.697	1.435
Leverage	0.874	1.145
BIG4	0.740	1.351

Table 1.2 Show R^2, Adjusted R^2, Durbin-Watson, F-Statistic, and p-value

Model	R^2	Adjusted R^2	Durbin-Watson	F-test	p-value
1	0.085	0.043	1.998	2.012	0.024

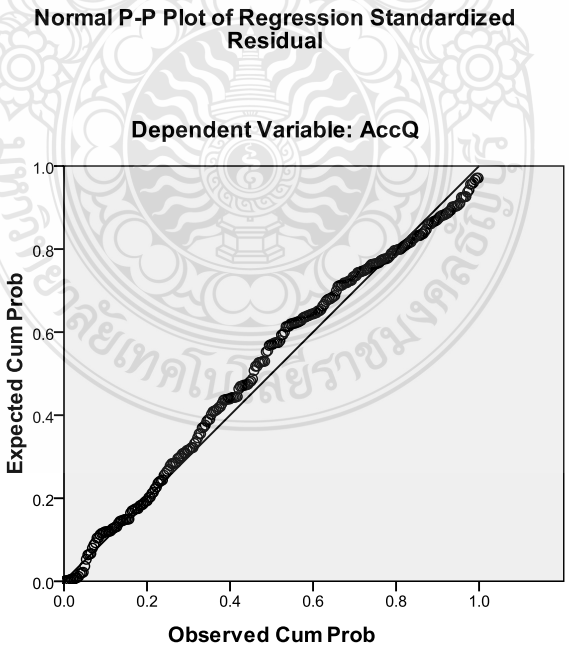
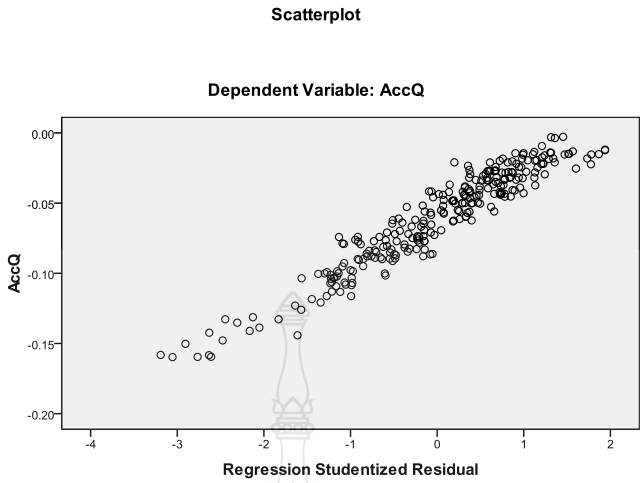


Figure 1.1 Show Normal P-P plot, Scatterplot, and Histogram



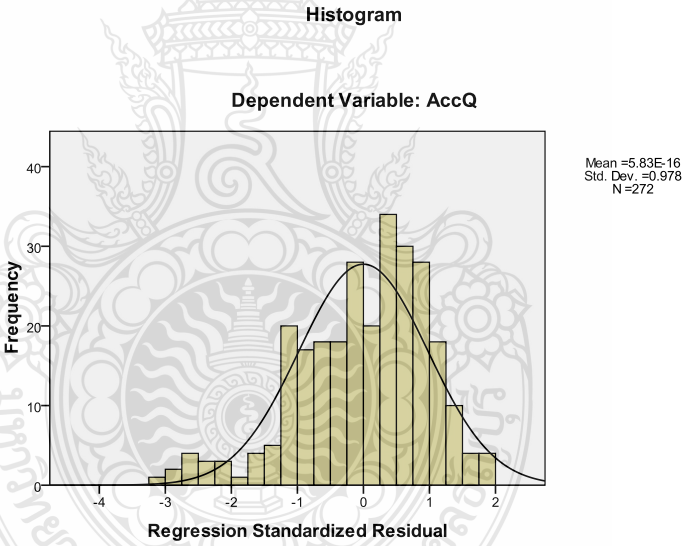


Figure 1.1 Show Normal P-P plot, Scatterplot, and Histogram (Cont.)

2. Multiple Regression of Cost of Debt on Accruals Quality

Table 2.1 Show Tolerance and VIF

Variable	Tolerance	VIF
AccQ	0.983	1.017
F_Size	0.977	1.023
Leverage	0.985	1.015

Table 2.2 Show R^2, Adjusted R^2, Durbin-Watson, F-Statistic, and p-value

Model	R^2	Adjusted R^2	Durbin-Watson	F-test	p-value
1	0.234	0.225	1.716	27.218	0.000

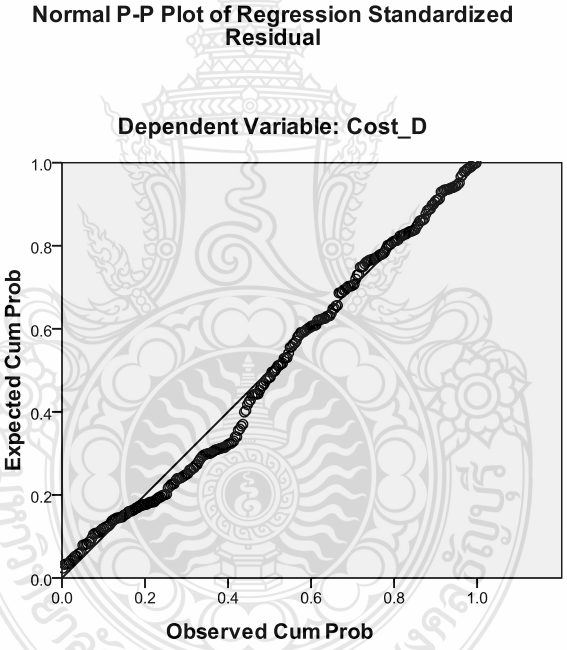
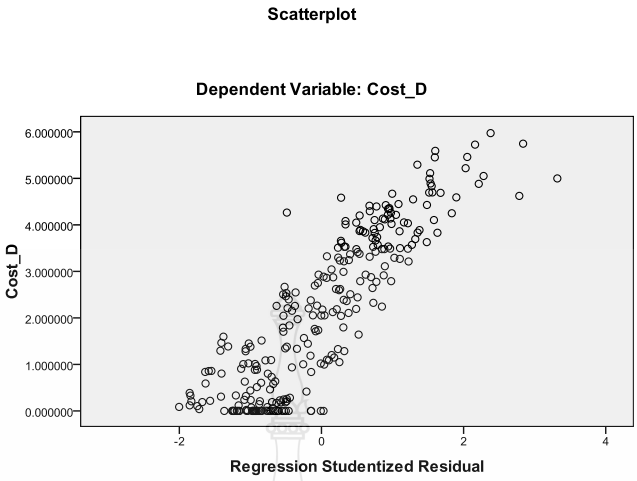


Figure 2.1 Show Normal P-P plot, Scatterplot, and Histogram



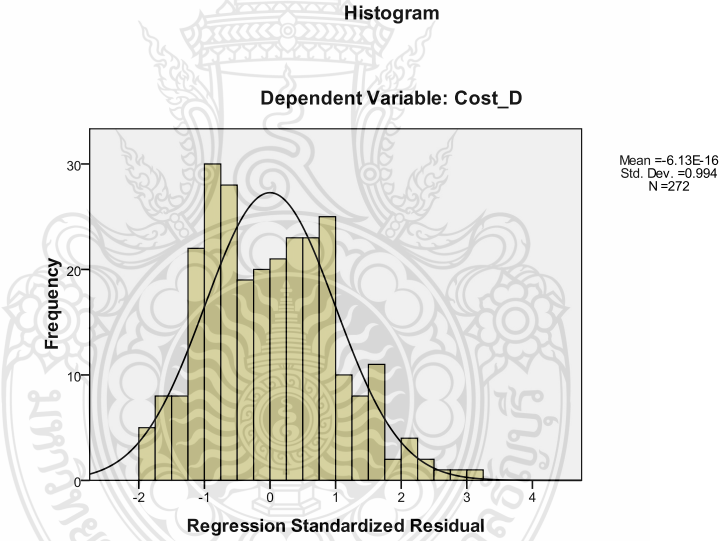


Figure 2.1 Show Normal P-P plot, Scatterplot, and Histogram (Cont.)

3. Multiple Regression of Cost of Equity on Accruals Quality

Table 3.1 Show Tolerance and VIF

Variable	Tolerance	VIF
AccQ	0.973	1.028
F_Size	0.627	1.595
Leverage	0.980	1.020
BM	0.632	1.583

Table 3.2 Show R^2, Adjusted R^2, Durbin-Watson, F-Statistic, and p-value

Model	R^2	Adjusted R^2	Durbin-Watson	F-test	p-value
1	0.121	0.107	0.928	9.152	0.000

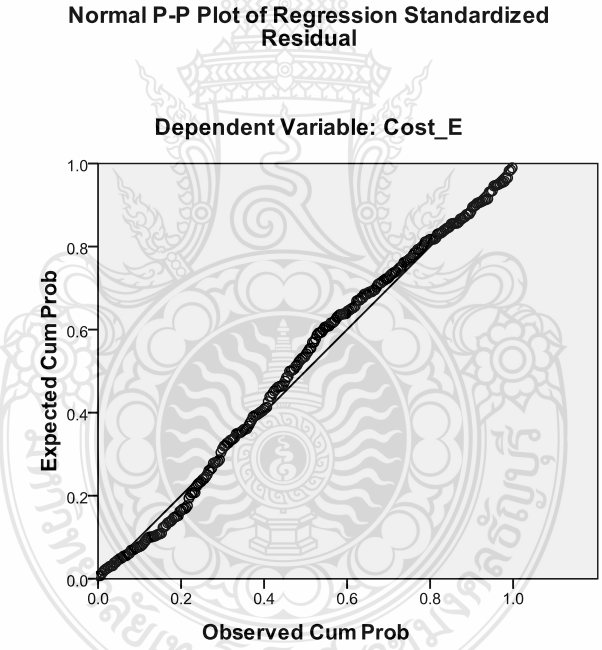


Figure 3.1 Show Normal P-P plot, Scatterplot, and Histogram

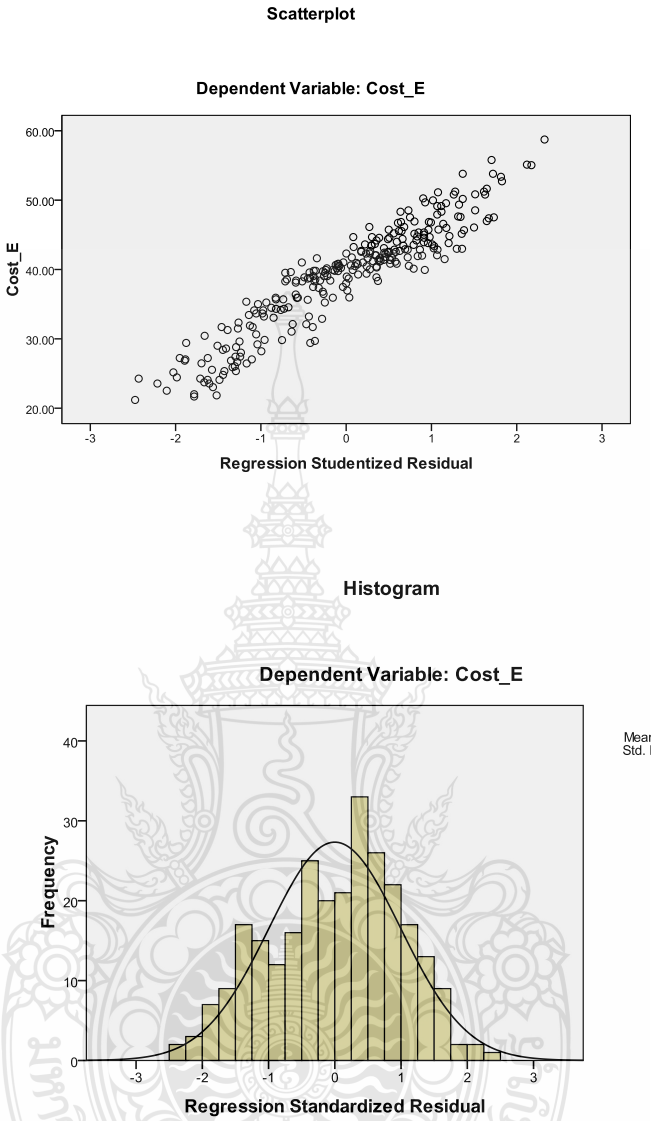


Figure 3.1 Show Normal P-P plot, Scatterplot, and Histogram (Cont.)

4. Multiple Regression of Cost of Debt on Audit Committee Characteristics

Table 4.1 Show Tolerance and VIF

Variable	Tolerance	VIF
AccExp	0.892	1.121
LegExp	0.961	1.041
Multi	0.911	1.098
Tenure	0.802	1.247
Female	0.866	1.155
Ac_Ind	0.885	1.129
Ac_Size	0.415	2.409
Meet	0.894	1.119
Age	0.393	2.542
F_Size	0.882	1.134
Leverage	0.876	1.142

Table 4.2 Show R^2, Adjusted R^2, Durbin-Watson, F-Statistic, and p-value

Model	R^2	Adjusted R^2	Durbin-Watson	F-test	p-value
1	0.309	0.280	1.816	10.558	0.000

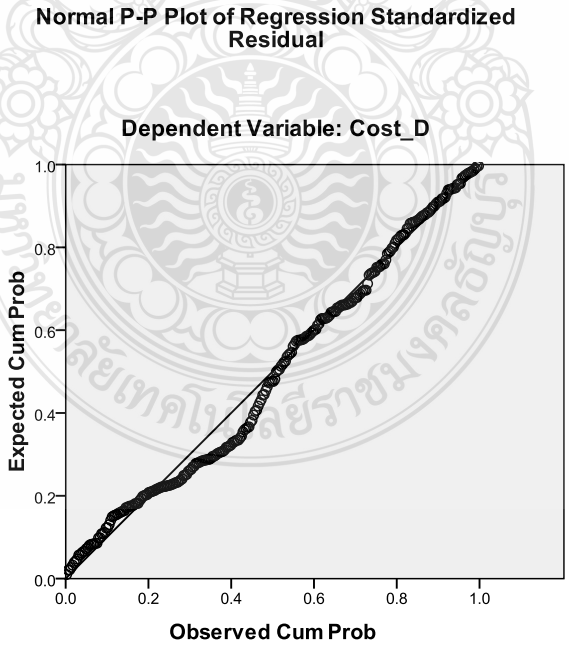
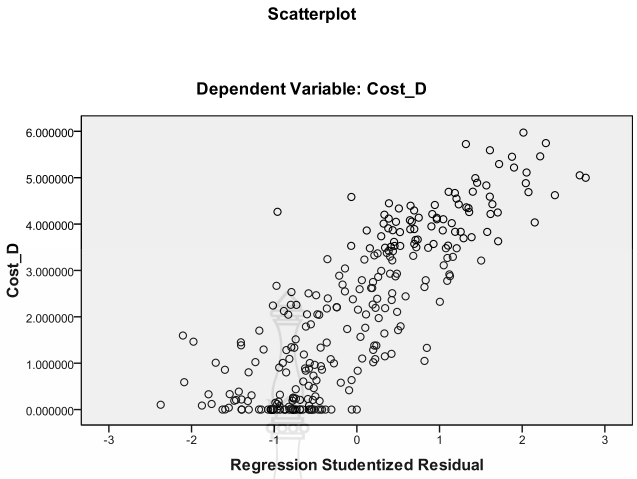


Figure 4.1 Show Normal P-P plot, Scatterplot, and Histogram



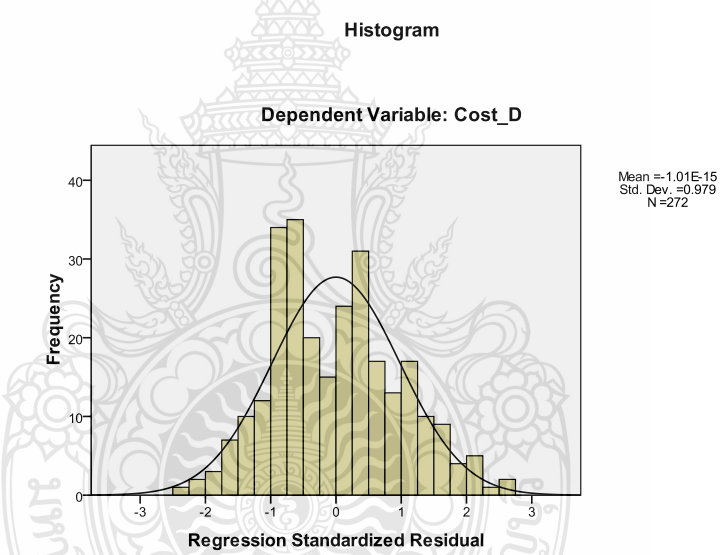


Figure 4.1 Show Normal P-P plot, Scatterplot, and Histogram (Cont.)

5. Multiple Regression of Cost of Equity on Audit Committee Characteristics

Table 5.1 Show Tolerance and VIF

Variable	Tolerance	VIF
AccExp	0.892	1.121
LegExp	0.960	1.041
Multi	0.907	1.102
Tenure	0.800	1.251
Female	0.862	1.160
Ac_Ind	0.885	1.130
Ac_Size	0.415	2.412
Meet	0.865	1.156
Age	0.391	2.555
F_Size	0.581	1.721
Leverage	0.872	1.147
BM	0.609	1.642

Table 5.2 Show R^2, Adjusted R^2, Durbin-Watson, F-Statistic, and p-value

Model	R^2	Adjusted R^2	Durbin-Watson	F-test	p-value
1	0.149	0.109	1.050	3.776	0.000

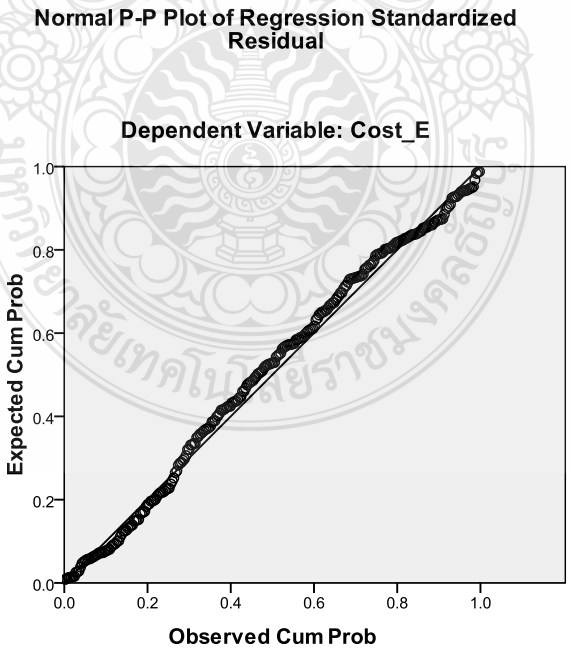
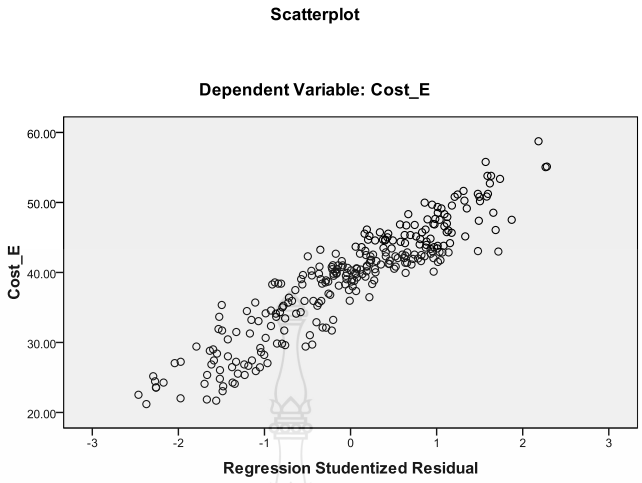


Figure 5.1 Show Normal P-P plot, Scatterplot, and Histogram



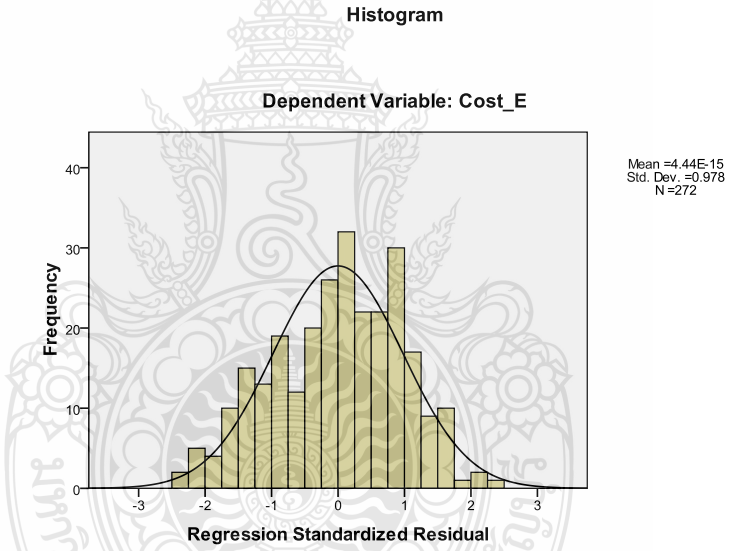


Figure 5.1 Show Normal P-P plot, Scatterplot, and Histogram (Cont.)

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Declaration

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Somsak Jintawattanagul