

## THE MEDIATING EFFECT OF ACCRUALS QUALITY ON THE RELATIONSHIP BETWEEN AUDIT COMMITTEE CHARACTERISTICS AND THE COST OF EQUITY CAPITAL

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**Abstract:** *This study investigates the mediating effect of accruals quality on the relationship between audit committee characteristics and the cost of equity capital during the period of 2010 to 2012 of listed non-financial firms in Thailand. Audit committee characteristics consist of accounting experts, legal experts, multiple directorships, tenure, female audit committee members, audit committee independence, audit committee size, meeting frequency, and members' age in the audit committee. The purpose of this paper is to examine the association between audit committee characteristics and the cost of equity capital in addition to how the association may be affected by accruals quality as a mediating variable. Univariate correlations and multivariate statistical analyses were performed. In particular, a multivariate regression model was used, with a confidence interval of 95%. The results show that firms with lower accruals quality have lower cost of equity, and that accruals quality is a mediating variable between audit committee characteristics and the cost of equity capital. Firms with increased multiple directorships and greater members' age in audit committee have higher accruals quality and higher cost of equity. Firms with smaller audit committee size have higher accruals quality and lower cost of equity. Moreover, firms with lower multiple directorships have lower cost of equity. Overall, these results show that audit committee characteristics have a direct effect on the cost of equity capital and an indirect effect on the cost of equity capital through accruals quality. The results are meaningful to investors, shareholders, standard setters, regulators and other stakeholders to better understand the consequences of the audit committees of the Thai listed companies and their association with accruals quality and the cost of equity capital.*

**Keywords:** *accruals quality, audit committee, the cost of equity capital*

### 1. INTRODUCTION

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

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everything in order to maximize their own economic wealth without consideration of the potential impacts upon any 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. Corporate governance contributing to the efficient use of resources is sustainable growth and it can lower the cost of capital (OECD, 2004). Beside, the study of Claessens and Yurtoglu (2013) found that firms with better corporate governance receive benefits from better performance, greater access to financing, and lower cost of capital. Previous research assigns the audit committee a very influential role within the governance structure. The audit committee is important for financial reporting quality, which is the most important information for investors' 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 equity capital. The reasons for this may stem from investors who cannot observe audit committee characteristics as directly and easily as the quality of accounting information.

Accruals quality always represents the degree of firm earnings as specific information. 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 it is accurate and adequate (SET, 1999; SET, 2008). In addition, Francis, LaFond, Olsson and Katherine (2004) note that accruals quality has the largest impact on reducing the cost of equity capital among seven earnings attributes, i.e. accruals quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism. Also, earnings are 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). Therefore, the association between audit committee characteristics and the cost of equity capital can be clearly observed through the quality of accounting information (i.e. accruals quality).

In Thailand, people recognize the importance of the role of the audit committee after the economic crisis in 1997. To respond to the efficient allocation of capital in

the international financial market, 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 the financial report 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 make the firm's financial report one of high quality. In 2008 the SET revised the qualifications and scope of work of the audit committee to improve the corporate governance in Thailand.

Prior research posits that audit committee characteristics, i.e., accounting experts, legal experts, multiple directorship, tenure, female audit committee member', audit committee size, and meeting frequency effects on 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 equity capital remains scarce. Thus, this study intends to investigate the effects of audit committee characteristics on the cost of equity capital.

Previous studies have only investigated the direct effect of audit committee characteristics on the cost of equity capital. Thus, this study investigates the effect of audit committee characteristics on the cost of equity capital which is mediated by accruals quality. The results will shed some light on the linkage between audit committee characteristics and the cost of equity capital through accruals quality. Some studies suggest that accruals quality may decrease the cost of capital (Ashbaugh, Collins & Lafond, 2004; Francis, LaFond, Olsson and Katherine, 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 equity capital using Thai datasets.

This study contributes to the corporate governance literature and provides the evidence of the relationship of the audit committee characteristics and the cost of equity capital through accruals quality. Besides, this study provides evidence of

the direct effect of audit committee characteristics on the cost of equity 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 equity capital.

## **2. THEORETICAL PERSPECTIVE**

In this study, we briefly explain the theoretical perspective:

### **2.1. Agency theory**

Agency theory was developed by Jensen and Meckling (1976). The agency theory is generally considered as the starting point for any discussion on corporate governance that describes the relationship between shareholders (the principle) and manager (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 will 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).

### **2.2. 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 than when they gain to 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.

## **3. RELEVANT LITERATURE REVIEW AND RESEARCH HYPOTHESES DEVELOPMENT**

### **3.1. The Effect of Audit Committee Characteristics on Accruals Quality and the Cost of Equity Capital**

#### **3.1.1. Accounting Experts**

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 issues and ask for the information from management and the auditor. In

fact, the 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.

According to the previous studies of Carcello, *et al.* (2006), Baxter and Cotter (2009), Dhaliwal, *et al.* (2010) and Krishnan, Wen, & Zhao (2011), they found a positive relationship between audit committee members with accounting experts and accruals quality. However, at present no one has studied the association between audit committee members with accounting experts and the cost of equity capital. 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 equity 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 equity capital.

Hypothesis 1c: There is an association between an audit committee with accounting experts and the cost of equity capital being mediated by accruals quality.

### **3.1.2. Legal Experts**

The SET (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 make good quality financial reporting because its members are expected to be more careful about legal risks and be alert to legal liability threats relating to financial reporting quality. Audit committee members with legal experts are 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, Wen, & Zhao, 2011).

The study of Krishnan, Wen, & Zhao (2011) shows that an audit committee with legal experts is positively related with accruals quality. However, at present, no one has studied the association between an audit committee with legal experts and the cost of equity capital which legal experts is a positive characteristic of an audit committee. So, this has the tendency to increase accruals quality and decrease the cost of equity 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 equity capital.

Hypothesis 2c: There is an association between an audit committee with legal experts and the cost of equity capital being mediated by accruals quality.

### **3.1.3. Multiple Directorships**

Fama and Jensen (1983) indicate that outside directors, who are usually managers of other firms, have incentives 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 the quality of financial report and thus lower cost of capital (Dao, Huang, & Zhu, 2013).

Yang and Krishnan (2005) discovered a relationship between multiple directorships and accruals quality, but at present no one has found any relationship between multiple directorships and the cost of equity capital. Given this reason, 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 equity 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 equity capital.

Hypothesis 3c: There is an association between audit committee members with multiple directorships and the cost of equity capital being mediated by accruals quality.

### **3.1.4. Tenure**

Audit committee members who have been working longer periods are more knowledgeable and experienced about the firms' financial reporting process. Generally, the firms should set the tenure of about 2-5 years for a position on the audit committee to ensure that the audit committee performs its function continuously. As a result, work efficiency increases (SET, 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 study

concerning the relationship between the tenure of an audit committee member and the cost of equity 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 equity 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 equity capital.

Hypothesis 4c: There is an association between the tenure of audit committee members and the cost of equity capital being mediated by accruals quality.

### ***3.1.5. 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. 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) show that female CFOs 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).

Srinidhi, Gul and Tsui (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 equity 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 equity 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 equity capital.

Hypothesis 5c: There is an association between female audit committee members and the cost of equity capital being mediated by accruals quality.

### ***3.1.6. Audit Committee Independence***

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 directors because inside directors have few incentives to use discretion in managing reports. (Ghosh, Marra & Moon, 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 equity (Ashbaugh, Collins & LaFond, 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 equity 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 equity capital.

Hypothesis 6c: There is an association between audit committee independent and the cost of equity capital being mediated by accruals quality.

### **3.1.7. Audit Committee Size**

Beasley (2001) and Ghosh, Marra and Moon (2010) posit that larger committees provide superior monitors of the financial accounting process because larger audit committees have wider 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 (i.e. Yang & Krishnan, 2005; Kent, Routledge, & Stewart, 2010; Krishnan, Wen, Yuan & Zhao, 2011; García, Barbadillo, & Perez, 2012; Qi & Tian, 2012; and Amar, 2014). However, the studies of Ghosh, Marra and Moon (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 relationship. However, there has been no study on the relationship between audit committee size and the cost of equity capital. 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 equity capital.

Hypothesis 7c: There is an association between audit committee size and the cost of equity capital being mediated by accruals quality.



### **3.1.8. 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, Marra and Moon, 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.

The previous studies of 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. However, no study on the relationship between audit committee meeting frequency and the cost of equity capital has been conducted. For the reason above, the researcher expects audit committee meeting frequency to be positively related to accruals quality and negatively related to the cost of equity 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 equity capital.

Hypothesis 8c: There is an association between the meeting frequency of the audit committee and the cost of equity capital being mediated by accruals quality.

### **3.1.9. 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 who have more experience and who are more conservative than younger members of audit committees may make greater effort to prevent collusion between managers and external auditors (Qi & Tian, 2012).

Qi and Tian (2012) found that 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 capital. For these reasons, the researcher expects that the members' age of audit committee has a positive relationship with accruals quality and a negative relationship with the cost of equity 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 equity capital.

Hypothesis 9c: There is an association between the age of the audit committee members and the cost of equity capital being mediated by accruals quality.

### **3.2. The Effect of Accruals Quality on the Cost of Equity 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 was manipulated by managers, it may cause higher investment risk and impact on 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.

The previous studies of Ashbaugh *et al.* (2004), Francis *et al.* (2004), Francis *et al.* (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 capital. Furthermore, Chen, Dhaliwal, and Trombley (2008) found a strong relationship between accruals quality and the cost of equity for firms with high fundamental risk.

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 equity capital.

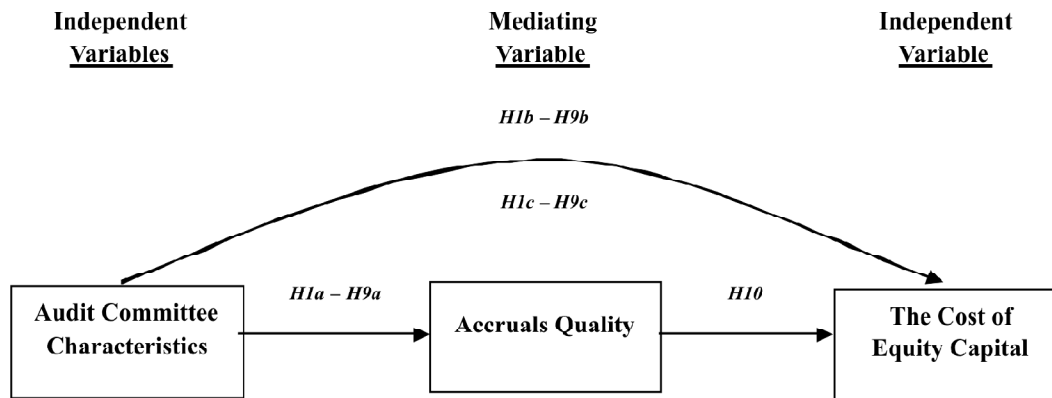
Hypothesis 10: Accruals quality is negatively related to the cost of equity capital.

## **4. RESEARCH DESIGN**

### **4.1. 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 because 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). Besides, real estate and other funds were excluded from the sample because the financial reporting requirements and characteristics of business operations are different from other companies.

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



- 1) Accounting Experts
- 2) Legal Experts
- 3) Multiple Directorships
- 4) Tenure
- 5) Female Audit Committee
- 6) Audit Committee Independent
- 7) Audit Committee Size
- 8) Meeting Frequency
- 9) Members Age

Figure 1: Conceptual Framework

#### 4.2. Data Collection

This study comprised both qualitative and quantitative research. Regarding the qualitative research, the data was derived from interviews with investors. 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) and the web-based application from the SET.

#### 4.3. Measurement of Accruals Quality

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.

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

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, the researcher estimated Equation (1) using rolling ten-year windows. These estimations yielded ten firm- and year-specific residuals,  $v_{j,t}$   $t = t-9, \dots, t$ , 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. Consistent with Issarawornrawanich (2011), we multiplied  $AccQ_j$  with  $-1$  so that the higher value of the new measure indicated higher accruals quality.  $AccQ_j$  was our proxy for accruals quality.

#### 4.4. Measurement of the Cost of Equity Capital

This study used the CAPM model to measure the cost of equity capital which is the expected return from the investors' perspective, because it is a model based on the realized returns approach which experiences no problems concerning measurement errors from estimates of the cost of equity capital (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 capital among such groups. The CAPM model provides the following equation.

$$E(r_i) = r_f + \beta_i [E(r_m) - r_f] \quad (2)$$

where

- $E(r_i)$  = expected return for firm i  
 $r_f$  = risk free rate, measured by government bond yield  
 $\beta_i$  = firm i beta coefficient  
 $E(r_m)$  = expected return of the market

## 5. REGRESSION MODEL

### 5.1. Model Test: 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.

$$\begin{aligned}
 AccQ_{i,t} = & \beta_0 + \beta_1 AccExp_{i,t} + \beta_2 LegExp_{i,t} + \beta_3 Multi_{i,t} + \beta_4 Tenure_{i,t} + \beta_5 Female_{i,t} \\
 & + \beta_6 Ac\_Ind_{i,t} + \beta_7 Ac\_Size_{i,t} + \beta_8 Meet_{i,t} + \beta_9 Age_{i,t} + \beta_{10} F\_Size \\
 & + \beta_{11} Leverage + \beta_{12} Big4 + \square_j
 \end{aligned}
 \tag{Model 1}$$

### 5.2. Model Test: The Effect of Accruals Quality on the Cost of Equity Capital

This study investigated the effect of accruals quality on the cost of equity 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 equity capital.

$$Cost\_E_{i,t} = \delta_0 + \delta_1 AccQ_{i,t} + \delta_2 F\_Size + \delta_3 Leverage + \delta_4 BM + \square_j \tag{Model 2}$$

### 5.3. Model Test: The Effect of Audit Committee Characteristics and the Cost of Equity Capital

This study also used an ordinary least square regression to examine the effect of audit committee characteristics on the cost of equity capital.

$$\begin{aligned}
 Cost\_E_{i,t} = & \gamma_0 + \gamma_1 AccExp_{i,t} + \gamma_2 LegExp_{i,t} + \gamma_3 Multi_{i,t} + \gamma_4 Tenure_{i,t} + \gamma_5 Female_{i,t} \\
 & + \gamma_6 Ac\_Ind_{i,t} + \gamma_7 Ac\_Size_{i,t} + \gamma_8 Meet_{i,t} + \gamma_9 Age_{i,t} + \gamma_{10} F\_Size \\
 & + \gamma_{11} Leverage + \gamma_{12} BM + \square_j
 \end{aligned}
 \tag{Model 3}$$

### 5.4. Model Test: 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 equity capital through accruals quality, Model (3) was used to examine the direct effect of audit committee characteristics on the cost of equity capital. Model (2) was used to test whether accruals quality is associated with the cost of equity capital 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 equity capital 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 model (2) is significantly negatively associated with the cost of equity capital. 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 model (3).

Standardized coefficient  $\gamma_j$  is expected to be unequal to the product of the standardized coefficient  $\beta_k$  and standardized coefficient  $\delta_l$ .

$$\text{Std coeff } (\gamma_j) - [\text{std coeff } (\beta_k) \times \text{std coeff } (\delta_l)] \neq 0$$

All variables investigated in this study are summarized in Table 1.

**Table 1**  
**Summary of Definitions of Variables**

<i>Variables</i>	<i>Symbol</i>	<i>Definition</i>
<i>Independent Variables</i>		
- 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	Female	The number of female audit committee members
• Audit Committee Independent	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

*contd. table 1*

<i>Dependent Variables</i>		
- Accruals Quality	AccQ	DD model multiplied by -1
- The Cost of Equity	Cost_E	The CAPM model
<i>Control Variables</i>		
- 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

## 6. DESCRIPTIVE STATISTICS

Table 2 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 and median of the cost of equity (Cost\_E) of non-financial firms are 3.3812% and 3.4349, 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 member age (Age) were 200.55 and 197.00, respectively.

With respect to the control variables, the mean and median of the natural logarithm of sampled firms' equity market value (F\_Size) were 3.6342 and 3.4819, respectively. The mean and median of 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 2**  
**Descriptive Statistics**

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Median</i>	<i>Standard Deviation</i>
AccQ	-0.16	0.00	-0.0606	-0.0523	0.0357
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

## 7. MULTIPLE REGRESSION RESULTS

### 7.1. The effect of audit committee characteristics on accruals quality

As Table 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%.

The coefficient of multiple directorships (Multi) was positive and significant at the 0.01 level. The results indicate that an audit committee with multiple directorships is positively related to accruals quality, which supports Hypothesis 3a. This is consistent with the findings of Yang and Krishnan (2005), that firms with audit committees with more multiple directorships have higher accruals quality. Audit committees with multiple directorships affect accruals quality because directors who serve on various boards may gain managerial expertise (Carpenter & Westphal, 2001; and Perry & Peyer; 2005) and increase the quality of the financial report (Dao, Huang, & Zhu, 2013). For audit committee size, the coefficient of audit committee size (Ac\_Size) was negatively significant at the 0.05 level. This result supports Hypothesis 7a, indicating that firms with smaller audit committee size have higher accruals quality. This is consistent with studies of Ghosh *et al.* (2010) and Baccouche, Hadriche, and Omri (2013), which found a significant negative relationship between audit committee size and accruals quality.



The negative relationship between audit committee size and accruals quality illustrates that smaller audit committees are more effective monitors (Jensen, 1993; and Yermack, 1996). For audit committee age, the coefficient of audit committee age (Age) was positively significant at the 0.01 level. This result supports Hypothesis 9a, indicating that the age of the audit committee members are positively related to accruals quality. This concurs with Qi and Tian (2012), who found that there is a significant positive relationship between audit committee age and accruals quality. Audit committee age affects accruals quality because older members of the audit committee may have more experience than those younger, which may help to identify the weaknesses of the internal controls easier.

Nonetheless, the coefficient of accounting experts (AccExp), legal experts (LegExp), tenure (Tenure), female audit committee members (Female), audit committee independence (Ac\_Ind), and meeting frequency (Meet) were not significant. Hypothesis 1a, 2a, 4a, 5a, 6a, and 8a are thus not supported, respectively. The results indicate that accounting experts, legal experts, tenure, female audit committee members, audit committee independence, and meeting frequency are not related to accruals quality.

In addition, the coefficient of the Big Four auditors (BIG4) was positively significant at the 0.05 level. This is consistent with the findings of Thoopsamut

**Table 3**  
**Multiple Regression of Accruals Quality on Audit Committee Characteristics**

<i>Variables</i>	<i>Expected Sign</i>	<i>Coefficients</i>	<i>Standardized Coefficients</i>	<i>t-statistic</i>	<i>p-value</i>
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	(+)	<b>0.003</b>	<b>0.168</b>	<b>2.680</b>	<b>0.008</b>
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	(?)	<b>-0.022</b>	<b>-0.229</b>	<b>-2.477</b>	<b>0.014</b>
Meet	(+)	0.000	0.037	0.581	0.562
Age	(+)	<b>0.000</b>	<b>0.257</b>	<b>2.691</b>	<b>0.008</b>
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 <sup>2</sup>				0.085	
Adjusted R <sup>2</sup>				0.043	

and Jaikengkit (2009) and Kent *et al.* (2010), who found that firms using the Big Four auditors have higher accruals quality than those the non-Big Four auditors. The coefficients of firm size (F\_Size) and leverage (Leverage) were not significant, indicating that firms' size and leverage are not related to accruals quality.

## 7.2. The effect of accruals quality on the cost of equity capital

Table 4 shows the multiple regression results of the effect of the accruals quality on the cost of equity capital. The adjusted R<sup>2</sup> for the cost of equity model was 0.107 at the significance level of 0.01.

The coefficient of accruals quality (AccQ) was positively significant at the 0.05 level. This result is inconsistent with Hypothesis 10, indicating that firms with higher accruals quality have a higher cost of equity capital. The results contrast with the prior studies of Ashbaugh *et al.* (2004), Francis *et al.* (2004), Francis *et al.* (2005), Bhattacharya *et al.* (2012), and Demirkan *et al.* (2012), which found a significant negative relationship between accruals quality and the cost of equity capital.

The results are robust in the use of several measures of accruals quality, namely discretionary accruals from the modified-Jones model (Dechow, *et al.*, 1995) and performance-matched discretionary accruals from Kothari *et al.* (2005), which found there to be a positive relationship between accruals quality and the cost of equity capital too. The reason the study is inconsistent with the hypothesis may be due to the following reasons:

Typically, accruals quality is a proxy of earnings quality. If the firm has higher managed earnings, it will have lower earnings quality (lower accruals quality). However, with the lower accruals quality, the financial report will look good because the earnings are managed, then the investor finds that the firm which has good performance will have a lower cost of equity capital. Penman and Zhang (2002) found that investors in the stock markets do not have insights into the quality of the earnings of a firm. The results of interviewing investors in Thailand, especially individual investors, showed that their view is that most investors do not take into account the quality of the financial statement. Also, Chan, Lin, and Strong (2009) studied the relationship between accounting conservatism and the cost of equity capital in the UK, and found that ex-post conservatism (market based and earnings related) has a positive impact on the cost of equity capital, which may be due to conservatism being less persistent and predictable to investors.

The Thai dataset of developing market economies made this study more interesting. Unlike studies in developed market economies, most often found a negative relationship between accruals quality and the cost of equity capital.

Therefore, using the Thai dataset in this study may produce results differing from previous studies. The association between accruals quality and the cost of equity capital exists, indicating that accruals quality is a mediating variable between audit committee characteristics and the cost of equity capital.

In addition, it was found that the coefficient of firm size (F\_Size) was negatively significant at the 0.01 level. This was consistent with prior studies (Ashbaugh *et al.*, 2004; Francis *et al.*, 2004; Gray *et al.*, 2009; Chen, Chen, Lobo, & Wang, 2011; and Demirkan *et al.*, 2012). The result indicates that large firms are expected to be less risky. The coefficient of leverage (Leverage) was negatively significant at the 0.01 level. This contrasts with the prior studies of Francis *et al.* (2005), Gray *et al.* (2009) and Chen *et al.* (2011). The result indicates that firms with high leverage ratios will have a low cost of equity capital. Furthermore, the coefficient of the book to market ratio (BM) was not significant, indicating that the book to market ratio was not related to the cost of equity capital.

**Table 4**  
**Multiple Regression of Cost of Equity on Accruals Quality**

<i>Variables</i>	<i>Expected Sign</i>	<i>Coefficients</i>	<i>Standardized Coefficients</i>	<i>t-statistic</i>	<i>p-value</i>
Intercept	None	54.573		14.932	0.000
AccQ	(-)	<b>25.668</b>	<b>0.119</b>	<b>2.052</b>	<b>0.041</b>
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 <sup>2</sup>				0.121	
Adjusted R <sup>2</sup>				0.107	

### **7.3. The effect of audit committee characteristics on the cost of equity capital**

The results of the effect of audit committee characteristics on the cost of equity capital are presented in Table 5. The cost of equity was significant at the 0.01 level as revealed by the model *F*-statistics. The adjusted R<sup>2</sup> for the cost of equity models was 0.109.

As presented in Table 5, the coefficient of multiple directorships (Multi) was positively significant at the 0.05 level. This result is inconsistent with Hypothesis 3b, indicating that firms with more audit committee members with multiple directorships have a higher cost of equity capital. Most directors who serve on various boards may not have enough time to monitor effectively and be more vulnerable, which may increase the likelihood of neglecting their duties (Ang,

2000). This may be the same reason as to why the Securities and Exchange Commission of Thailand (SEC) indicated that the audit committee should be a director in the other companies exceeding 5 companies. In addition, some investors in the interviews were of the opinion that sometimes individuals who used to be famous were often invited to be the directors of several companies without working at full capacity due to the lack of adequate time to consider the important issues, or they may not have performed their duties at all. This could cause increase the cost of equity capital.

The coefficient of accounting experts (AccExp), legal experts (LegExp), tenure of audit committee members (Tenure), female audit committee members (Female), audit committee independence (Ac\_Ind), audit committee size (Ac\_Size), meeting frequency (Meet) and members age in the audit committee (Age) were not significant. The results do not support Hypothesis 1b, 2b, 4b, 5b, 6b, 7b, 8b and 9b, indicating that accounting experts, legal experts, tenure of audit committee members, female audit committee members, audit committee independence, audit committee size, meeting frequency and members age in the audit committee are not related to the cost of equity capital.

In addition, the coefficient of firm size (F\_Size) was negatively significant at the 0.01 level. This study is consistent with Ashbaugh et al. (2004), Francis *et al.*

**Table 5**  
**Multiple Regression of Cost of Equity on Audit Committee Characteristics**

<i>Variables</i>	<i>Expected Sign</i>	<i>Coefficients</i>	<i>Standardized Coefficients</i>	<i>t-statistic</i>	<i>p-value</i>
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	(-)	<b>0.583</b>	<b>0.139</b>	<b>2.312</b>	<b>0.022</b>
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
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 <sup>2</sup>				0.149	
Adjusted R <sup>2</sup>				0.109	

(2004), Gray *et al.* (2009), Chen, Chen, Lobo, and Wang (2011) and Demirkan *et al.* (2012) which found negative relationship between firm size and the cost of equity. The coefficient of financial leverage (Leverage) was negatively significant at the 0.01 level. This contrasts with the studies of Francis *et al.* (2005), Gray *et al.* (2009) and Chen *et al.* (2011) that indicated that firms with high leverage ratios have low cost of equity. Furthermore, the coefficient of the book to market ratio (BM) is not significant. The result indicates that the book to market ratio is not related to the cost of equity capital.

#### **7.4. The effect of audit committee characteristics on the cost of equity capital through accruals quality**

Tables 6 present the results of the effect of audit committee characteristics on the cost of equity through accruals quality. As previously described, the effect of accruals quality on the cost of equity capital is positively. The results indicate that accruals quality is a mediating variable between audit committee characteristics and the cost of equity capital.

The results further indicate that the direct effect of multiple directorships (Multi) only on the cost of equity exists. Also, the results show the positive effects of multiple directorships on accruals quality. These results support Hypothesis 3c, indicating that multiple directorships has a positive effect on the cost of equity capital through accruals quality.

The results indicate a negative association between audit committee size and accruals quality. These results support Hypothesis 7c, indicating that audit committee size has a negative effect on the cost of equity capital through accruals quality.

The results indicate the positive effects of the age of audit committee members on accruals quality. These results support Hypothesis 9c, indicating that the age of audit committee members has a positive effect on the cost of equity capital through accruals quality.

In addition, the results indicate that accounting experts (AccExp), legal experts (LegExp), tenure (Tenure), female audit committee members (Female), audit committee independence (Ac\_Ind), and meeting frequency (Meet) have no effect on accruals quality (AccQ), in turn indicating that accounting experts, legal experts, tenure, female audit committee members, audit committee independence, and meeting frequency have no effect on the cost of equity capital through accruals quality. Thus, these results do not support Hypothesis 1c, 2c, 4c, 5c, 6c and 8c, respectively.

**Table 6**  
**The Effect of Audit Committee Characteristics on Cost of Equity through Accruals Quality**

<i>Model: Multiple Regression of</i>	<i>Table</i>	<i>Variables</i>	<i>Standardized Coefficient</i>	<i>t-statistic</i>	<i>p-value</i>
<b><u>Mediating variable</u></b>					
Cost of Equity on Accruals Quality	4	AccQ	$\delta_1$	0.119	2.052 0.041
<b><u>Direct Effects</u></b>					
Cost of Equity on Audit Committee Characteristics	5	Multi	$\gamma_3$	0.139	2.312 0.022
<b><u>Indirect Effects</u></b>					
Accruals Quality on Audit Committee Characteristics The product of simple correlation	3	Multi	$\beta_3$ $\beta_3 \times \delta_1$	0.1680.020	2.680 0.008
<b><u>Direct Effects</u></b>					
Cost of Equity on Audit Committee Characteristics	5	Ac_Size	$\gamma_7$	-0.091	-1.024 0.307
<b><u>Indirect Effects</u></b>					
Accruals Quality on Audit Committee Characteristics The product of simple correlation	3	Ac_Size	$\beta_7\beta_7 \times$ $\delta_1$	-0.229- 0.027	-2.477 0.014
<b><u>Direct Effects</u></b>					
Cost of Equity on Audit Committee Characteristics	5	Age	$\gamma_9$	0.084	0.914 0.362
<b><u>Indirect Effects</u></b>					
Accruals Quality on Audit Committee Characteristics The product of simple correlation	3	Age	$\beta_9\beta_9 \times$ $\delta_1$	0.257 0.031	2.691 0.008

## 8. CONCLUSIONS

The results show that firms with higher accruals quality have higher cost of equity capital, and that accruals quality is a mediating variable between audit committee characteristics and the cost of equity capital. The results are inconsistent with the prior studies of Ashbaugh *et al.* (2004), Francis *et al.* (2004), Francis *et al.* (2005), Bhattacharya *et al.* (2012), and Demirkan *et al.* (2012) which found a significant negative relationship between accruals quality and the cost of equity capital. The results of analysis of the effect of the audit committee characteristics on accruals quality and the cost of equity capital are as follows:

Firms with higher multiple directorships have higher accruals quality and higher cost of equity capital. Multiple directorships have a direct effect on the cost of equity, and an indirect positive effect on accruals quality. The reason that multiple directorships with its positive relationship with the cost of equity capital is

inconsistent with the hypothesis may be because the directors serve on various boards and may share an interest in working in various businesses, too. This may increase the chances of them neglecting their duties.

The results show that firms with larger audit committee size have lower accruals quality and lower cost of equity capital. Audit committee size has an indirect negative effect through accruals quality on the cost of equity because the perspective of investors in Thailand may be of the opinion that firms with larger audit committee size are more effective monitors. Consistent with Beasley (2001) and Ghosh *et al.* (2010), larger committees provide superior monitors of the financial accounting process because larger audit committees have more extensive knowledge. Thus, a larger audit committee is better from the perspective of investors. This may cause lower investment risk and lower the cost of equity capital. However, the results of this study contrast with the perspective of accounting information quality (accruals quality). The results revealed that there was a negative relationship between audit committee size and accruals quality. This indicates that smaller audit committees create higher accruals quality, so a smaller audit committee is better from the perspective of accounting information quality. This is consistent with the studies of Jensen (1993) and Yermack (1996) that show smaller audit committees are more effective monitors.

Finally, firms with older members on the audit committee have higher accruals quality and higher cost of equity capital. The perspective of accounting information quality (accruals quality) is one of a positive relationship between members' age in the audit committee and accruals quality. The hypothesis that older members in the audit committee create higher accruals quality suggest that this is a positive characteristic from the perspective of accounting information quality. However, the results of this study contrast with the perspective of investors that the members' age on an audit committee has an indirect positive effect through accruals quality on the cost of equity. From their perspective, they are confident that younger members on an audit committee could work honestly and effectively. As a result, there is lower investment risk and lower cost of equity capital.

On the whole, the results show that good audit committee characteristics i.e. lower multiple directorships, larger audit committee size and younger members on the audit committee, decrease the cost of equity capital of a firm directly and through the quality of accounting information, i.e. accruals quality, indirectly.

## **9. FURTHER STUDY**

This study has studied some characteristics of the audit committee. So, in the future, the researcher hopes to see research related to other characteristics of the audit committee, such as accounting-legal experts (joint experts) or audit committee

industry experts, which may affect accruals quality and the cost of equity capital. It is believed, especially from the view of investors, that the audit committee or board of directors must have members who are industry experts.

The cost of equity capital is like the expected return of investors. This study measured the cost of equity using the CAPM model which is a realized data that has already occurred in the past (ex-post cost of equity) only. However, in the present, many researchers have tried to measure the cost of equity on the other side of expectations in terms of what is expected to occur in the future of the firm (ex-ante cost of equity). For the Thai data, at present, there is not adequate data to estimate ex-ante cost of equity. Therefore, the researcher hopes that in the future the cost of equity using ex-ante method can be performed and used for comparison with the ex-post method.

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